Kern County Bicycle Master Plan and Complete Streets Recommendations

Volume I: Bicycle Master Plan

FINAL REPORT
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Kern Council of Governments

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Kern Council of Governments

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Exexcutive Summary

Kern County is located in the southern end of the Central Valley. It extends north of Los Angeles County and Ventura County, east of San Luis Obispo County, west of San Bernardino County and south of the counties of Tulare, Inyo and Kings. Kern County straddles the Sierra Nevada and Tehachapi Mountains, covering both the south end of the San Joaquin Valley and a portion of the High Desert Region on the east side of the Sierras. Kern County encompasses approximately 8,140 square miles of land, with an estimated population of 780,953 as of 2009[1].

The focus of this bicycle master plan and complete streets recommendations is the unincorporated portion of Kern County, including Metropolitan Bakersfield, the Greater Tehachapi Area, the Kern River Valley, the Tejon Mountain Village, Indian Wells Valley and Lake Isabella.

Kern County's topography and climate conditions provide many opportunities for bicycling activities. The climate is favorable for bicycling, with clear, dry weather and moderate temperatures common throughout much of the year. The terrain varies between valleys, deserts, and mountains. The majority of urbanized land features relatively flat terrain ideal for utilitarian and commuting bicycle trips, and the terrain of the foothills is ideal for more challenging bicycle riding.

There are over 67 miles of existing bicycle facilities in the unincorporated parts of Kern County. While the Kern River Bike Path is the premier bicycle facility in Kern County, all but three miles of its length are in the City of Bakersfield. The bicycle facilities in unincorporated Kern County consist of over 25 miles of Class II Bike Lanes, over 38 miles of Class III Bike Routes, and the aforementioned three miles of Class I Bike Path along the Kern River.

Aside from the incorporated areas, Kern County generally lacks bike parking facilities. The County does not have a bike parking installation program and does not maintain inventories of bicycle parking found within the public right-of-way or at public facilities, such as civic buildings or public parks.

Figure 1-1 displays recommended bikeways in the Kern County Bicycle Master Plan and Complete Streets Recommendations. The Plan proposes 751 miles of new bikeways, including 41 miles of Class I bike paths, 291 miles of Class II bike lanes, 99 miles of Class III bike routes, 188 miles of Class III bike routes on State routes, and 16 miles of Neighborhood Green Streets. Bicycle parking facilities include both short- and long-term. The Kern County Bicycle Master Plan and Complete Streets Recommendations also includes recommendations for education, encouragement, enforcement, and evaluation programs. Examples include public awareness campaigns, bike share, targeted bicycling enforcement, and annual bicycle counts.

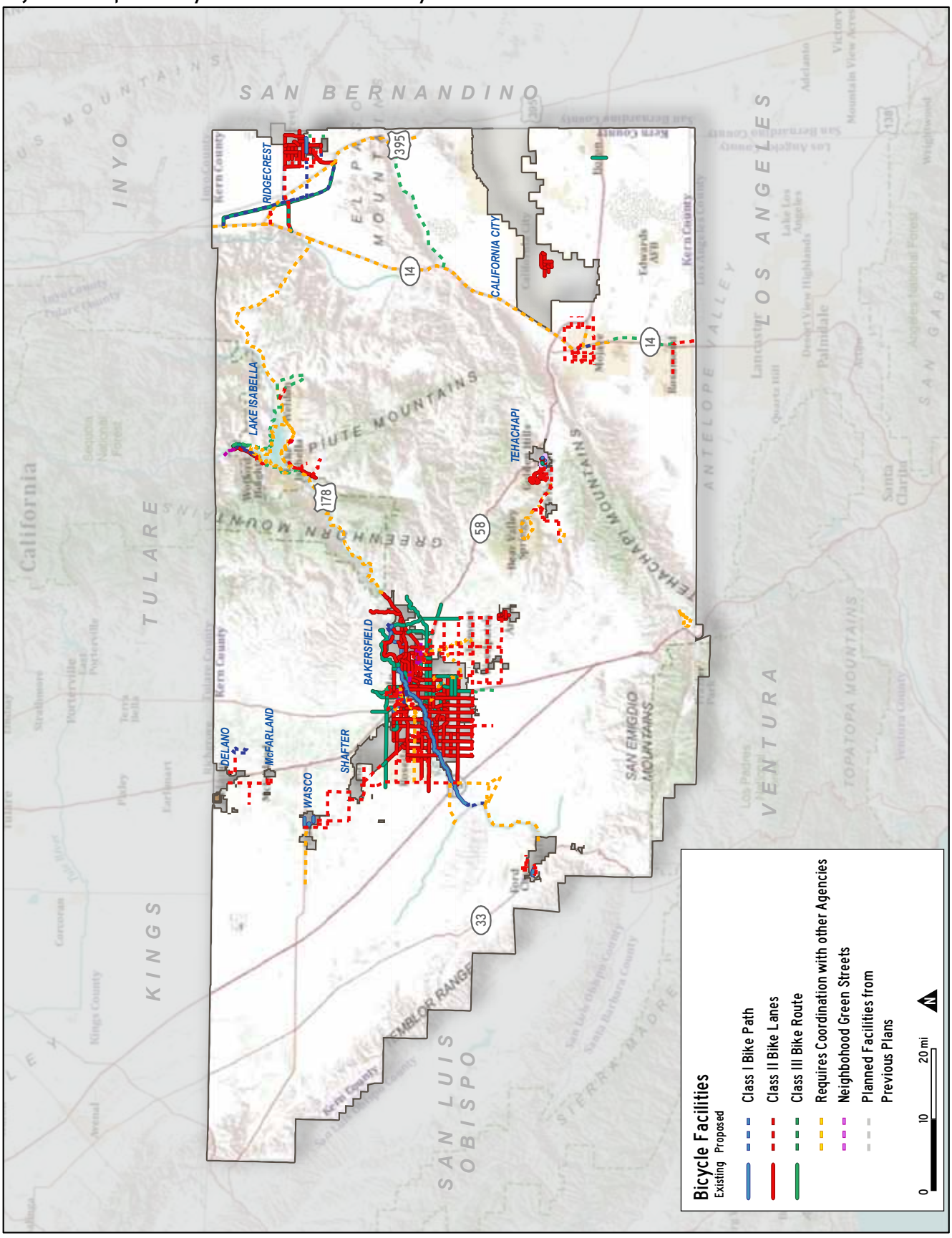
A multi-modal level of service analysis of the implementation of proposed Class II bikeways as part of this Plan through roadway widening, lane narrowing, lane reconfiguration, and parking reduction found that bicycle level of service (LOS) improves under all circumstances and pedestrian LOS improves in most situations.

In addition to proposed bicycle improvements, this Plan also presents recommendations for complete streets. Much of the existing roadway infrastructure within Kern County was not designed to accommodate bicycles, pedestrians, or transit, which creates a barrier for complete streets implementation. There are also several Kern County policies that create barriers to implementing complete streets, such as minimum vehicular LOS standards, and bicycle and pedestrian standards that are not comprehensive.

Despite the barriers to complete streets implementation, there are abundant opportunities within Kern County, such as through street maintenance and updating policies and standards.

1 *American Community Survey, 2009*

Figure 1-1: Proposed Bicycle Facilities in Kern County



1. Introduction

This chapter presents an introduction to the Kern County Bicycle Master Plan and Complete Streets Recommendations. It includes a discussion of the purpose of the Plan, the benefits of bicycling, how the Plan complies with the Caltrans Bicycle Transportation Account, and the organization of the Plan.

1.1 Purpose of the Bicycle Master Plan

The Kern County Bicycle Master Plan and Complete Streets Recommendations provides a broad vision for encouraging increased bicycle travel, as well as strategies and actions, to improve conditions for bicycling throughout the unincorporated communities throughout the county. This Plan provides direction for expanding the existing bikeway network and connecting gaps within the unincorporated communities and throughout the county as a means of bettering the bicycling environment.

In addition to providing recommendations for bikeways and support facilities, the Kern County Bicycle Master Plan and Complete Streets Recommendations offers recommendations for education, encouragement, enforcement, and evaluation programs to increase bicycling. In its recommendations, the Kern County Bicycle Master Plan and Complete Streets Recommendations includes facilities and programs that will encourage people of all ages and levels of ability to bike more frequently.

The Plan also recommends methods and designs for complete streets, which increase safety and convenience for all road users, including bicyclists, pedestrians, and transit users. These recommendations will guide Kern County in the development of a transportation network that will comply with sustainability requirements put forth by the State of California.

1.2 Benefits of Bicycling

Planning to create a more bicycle friendly region contributes to resolving several complex and interrelated issues, including traffic congestion, air quality, climate change, public health, and livability. By guiding the county toward bicycle friendly development, this Plan can affect all of these issue areas, which collectively can have a profound influence on the existing and future quality of life in Kern County.

1.2.1 Environmental/Climate Change Benefits

Replacing vehicular trips with bicycle trips has a measurable impact on reducing human-generated greenhouse gases (GHGs) in the atmosphere that contribute to climate change.[1] Fewer vehicle trips and vehicle miles traveled (VMT) translates into reduced fuel consumption and subsequently fewer mobile source pollutants, such as carbon dioxide, nitrogen oxides, and hydrocarbons, being released into the air. Providing transportation options that reduce VMT is an important component of decreasing greenhouse gas emissions and improving air quality.

1 *Gotschi, Thomas (2011). Costs and Benefits of Bicycling Investments in Portland, Oregon. Journal of Physical Activity and Health (8), S49-S58.*

1.2.2 Public Health Benefits

Public health professionals have become increasingly aware that the impacts of automobiles on public health extend far beyond asthma and other respiratory conditions caused by air pollution. There is a much deeper understanding of the connection between the lack of physical activity resulting from auto-oriented community designs and various health-related problems. Although diet and genetic predisposition contribute to these conditions, physical inactivity is now widely understood to play a significant role in the most common chronic diseases in the United States, including heart disease, stroke, and diabetes. Also, approximately 280,000 adults in the US die prematurely due to obesity-related illnesses every year.[2]

1.2.3 Economic Benefits

Bicycling is economically advantageous to individuals and communities. Replacing driving with bicycling reduces a person's expenses on vehicle maintenance, fuel costs, and insurance fees. These savings are accompanied by potential reductions in health care costs by participating in regular exercise and minimizing health complications associated with an inactive lifestyle. On a community scale, bicycle infrastructure projects are generally far less expensive than automobile-related infrastructure. Further, shifting a greater share of daily trips to bike trips reduces the impact on the region's transportation system, thus reducing the need for improvements and expansion projects. Increased bicycling also has the potential to increase sales at local businesses. Bicyclists might have more disposable income from fewer vehicle-related expenditures and as seen in Toronto's Bloor Street, bicyclists visit their local shops and spend more than their motorist counterparts.[3]

1.2.4 Community/Quality of Life Benefits

Fostering conditions where bicycling is accepted and encouraged increases a city's livability from a number of different perspectives that are often difficult to measure, but nevertheless important. The design, land use patterns, and transportation systems that comprise the built environment have a profound impact on quality of life issues. Studies have found that people living in communities with built environments that promote bicycling and walking tend to be more socially active, civically engaged, and are more likely to know their neighbors[4]; whereas urban sprawl has been correlated with social and mental health problems, including stress[5]. The aesthetic quality of a community improves when visual and noise pollution caused by automobiles is reduced and when green space is reserved for facilities that enable people of all ages to recreate and commute in pleasant settings.

1.2.5 Safety Benefits

Conflicts between bicyclists and motorists result from poor riding and/or driving behavior, as well as insufficient or ineffective facility design. Encouraging development and redevelopment in which bicycle travel is fostered improves the overall safety of the roadway environment for all users. Well-designed bicycle facilities improve security for current bicyclists and also encourage more people to bike. This in turn can further improve bicycling safety. Studies have shown that the frequency of bicycle collisions has an inverse relationship to bicycling rates – more people on bicycles equates to fewer crashes.[6] Providing information and

2 *Allison D.B., Fontaine K.R., Manson J.E., Stevens J., VanIttallie T.B. Annual deaths attributable to obesity in the United States. JAMA 1999(282), 1530-1538.*

3 *Sztabinski, F. (2009). Bike Lanes, On-Street Parking and Business. Clean Air Partnership 18-20.*

4 *Leyden, K. 2003. Social Capital and the Built Environment: The Importance of Walkable Neighborhoods. American Journal of Public Health 93: 1546-51.*

5 *Frumkin, H. 2002. Urban Sprawl and Public Health. Public Health Reports 117: 201-17.*

6 *Jacobsen, P. Safety in Numbers: More Walkers and Bicyclists, Safer Walking and Bicycling. Injury Prevention, 9: 205-209. 2003.*

educational opportunities about safe and lawful interactions between bicyclists and other roadway users also improves safety.

1.3 Bicycle Transportation Account Compliance

The Bicycle Transportation Account (BTA) is discretionary funding program administered by the Caltrans Bicycle Facility Unit. The BTA provides funding to local jurisdictions for the planning and implementation of bicycle projects that demonstrate a benefit for bicycle commuting. In order for Kern County to qualify for BTA funds, the Kern County Bicycle Master Plan and Complete Streets Recommendations must contain specific elements. **Table 1-1** displays the requisite BTA components and their location within this Plan. The table includes "Approved" and "Notes/ Comments" columns for the convenience of the official responsible for reviewing compliance.

1.4 Plan Contents

The Kern County Bicycle Master Plan and Complete Streets Recommendations is organized into two volumes with the following chapters:

Volume I - Chapter 1: Introduction

A discussion on the purpose of this bicycle plan and the importance and benefits of incorporating cycling in Kern County.

Chapter 2: Relationship to Other Plans and Policies

A review of existing plans and policies that are consistent with the recommendation of this plan and support bicycle faclities as a means of alternate transportation and recreation.

Chapter 3: Existing Conditions

An overview of the project area, existing bicycle facilities, programs, commuters and collisions.

Chapter 4: Needs Analysis

An assessment of the communities needs through public outreach and statistical data of current and future bicycle and walking trips.

Chapter 5: Bicycle Recommended Improvements

A list of recommended bicycle facilities, cost estimates, and level of service recommendations.

Chapter 6: Funding and Implementation

A review of past expenditures and a prioritized list of the recommended bicycle facilities with a suggested phasing plan and potential funding sources.

Volume II - Chapter 7: Introduction to Complete Streets and Best Practices

An overview of Complete Streets, legislation, best practices, plans and policies, infrastructure treatments and safety considerations.

Chapter 8: Opportunities and Constraints

An assessment of existing road cross sections, barriers, and opportunities to implementing Complete Streets in Kern County.

Chapter 9: Recommendations and Design Guidelines

Policy recommendations, infrustructure treatments to existing County roadways and innovative designs for bicycle and pedestrian facilities.

Appendices

A best practices toolbox for bicycle facilities design.

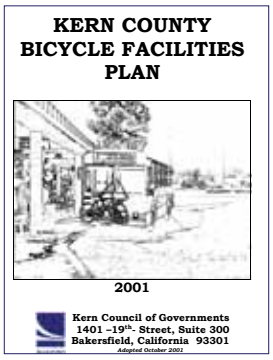
Table 1-1: BTA Compliance

Approved	Requirement	Page (s)	Notes/Comments
	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.	80 - 85	
	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.	15 - 16	
	c) A map and description of existing and proposed bikeways.	61 - 69	
	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.	61 - 69	
	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.	61 - 69	
	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.	15; 61 - 69	
	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.	17	
	h) A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.	43 - 52	
	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.	5 - 11	
	j) A description of the projects proposed in the plan and a listing of their priorities for implementation.	87 - 111	
	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.	87 - 111	

2. Relationship to Other Plans and Policies

This chapter provides an overview of the plans and policies governing and relating to active transportation in Kern County.

2.1 Kern County Bicycle Facility



The *Kern County Bicycle Facilities Plan* is a compendium of bicycle transportation facilities, both constructed and planned, mostly within and adjacent to Kern County incorporated cities including Arvin, Metropolitan Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, Wasco, and Lake Isabella. A summary of the existing bicycle facilities according to the Plan (2001) is presented later in this document.

The Goals of the Plan are to:

- Provide a balanced and efficient transportation system that maximizes the reduction of air pollution.
- Provide safe, accessible and convenient bicycling facilities.
- Support and encourage increased levels of bicycling and walking.
- Promote the use of bicycles as an integral component of the regional multi-modal transportation network.

According to the 1991 Statewide Travel Survey, 1.3 percent of trips were made by bicycle. The plan presents the projected Vehicle Miles of Travel and Emissions reduction in 2010 if bicycle usage replaces 3% of single-occupant vehicle trips.

2.2 Frazier Park/Lebec Specific Plan

The *Frazier Park/Lebec Specific Plan* was developed at the request of the Kern County Board of Supervisors. This plan was tasked with identifying the long-term goals for the Frazier Park/Lebec community. The plan is divided into 10 chapters, each addressing different elements of life for the residents in the community. Different parts of this document address bicycling conditions in the area and will be summarized in section below.

Chapter One – Land Use Element

This section outlines the policies set to guide the development of land use within the community. This section lays out goals, objectives and policies for the community, based on the designated land use type. Objective 1 States that:

Non-vehicular trips are encouraged by providing a series of multi-purpose trails and bicycle parking in commercial areas as identified in the Circulation Element of this Specific Plan.

The Land Use Element emphasizes the connection between the vitality of commercial areas and their accessibility by non-motorized forms of travel, including off-street bicycle and end-of-trip facilities.

Chapter Six – Circulation Element

The Circulation Element of the Frazier Park/Lebec Specific Plan describes the goals of the transportation system for the area. A key component to a balanced transportation system is a complete bikeway network.

The Circulation Element states that there are "no bicycle trails or lanes within the Plan Area." Among the key issues identified in the project's public outreach component was the need to "create a comprehensive bicycle and pedestrian trail system along Cuddy Creek."

Policy O in this chapter supports the development of multi-purpose trails and support facilities located at recreational destinations and commercial business districts.

Chapter Ten – Implementation

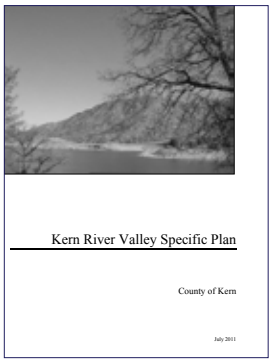
This chapter identifies key projects that will be developed over a 20 year time frame. This chapter also describes project costs, financing issues and potential grant funding sources. Among the listed projects include two key projects that will add bicycling infrastructure in the area.

- Multi-Purpose Community Recreational Trail (Phase 1). This project identifies several options for providing a bicycle and equestrian trail with landscaping and signage that parallels Cuddy Creek from Frazier Mountain Park to Mt. Pinos Way (east).
- Multi-Purpose Community Recreational Trail (Phase 2). This project identifies several options for providing a bicycle and equestrian trail with landscaping and signage that parallels Cuddy Creek from Mt. Pinos Way (east), to the Lebec commercial area and High School.

This section also identifies potential funding sources for future projects including:

- Congestion Mitigation and Air Quality (CMAQ)
- Environmental Enhancement and Mitigation (EEM)
- Transportation Development Act Article 3 (TDA-3)
- Transportation Enhancement Programs (TE)

2.3 Kern River Valley Specific Plan



The *Kern River Valley Specific Plan* was adopted by the Board of Supervisors in June 2011. The Kern River Valley Area encompasses approximately 173 square miles of unincorporated communities in northeast Kern County, approximately 40 miles northeast of Bakersfield. The area includes the Lake Isabella Reservoir, the North and South Forks of the Kern River, and the foothills of the Sierra Nevada Mountains. Several federal, state, and local agencies

have jurisdictional responsibilities within the Specific Plan Area boundaries, including the United States Department of Interior, the United States Department of Agriculture, the U.S. Army Corps of Engineers, and the US Forest Service. Caltrans is responsible for the state highway system management.

The Trails Section of the Circulation Element suggests coordination between County Planning Staff and the Kern Council of Governments to update the regional bicycle facilities plan that includes development of facilities for alternative transportation modes in the Kern River Valley and development of a trail system to connect to the Isabella Reservoir. Following are the key issues and goals identified in the plan relating to bicycling in the Kern River Valley:

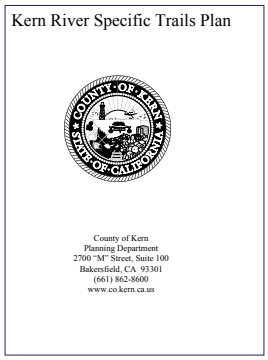
Issues:

- Private ownership bordering public lands
- Bicycle facilities have not been identified or developed in the Valley
- Coordination between multiple agencies to undertake development of trails in the area

Goals:

- Provide a continuous, multi-use loop trail around Lake Isabella that provides linkage with Kern River Valley communities and recreational facilities, through coordination with Kern County Parks and Recreation and the US Forest Service.
- Identify the provision of bicycle lockers and shower facilities in local agencies as an implementation measure to reduce air quality impacts.
- Establish a policy to provide opportunities for the use of alternative transportation modes to reduce emissions associated with automobile use.

2.4 Kern River Specific Trails Plan



The *Kern River Specific Trails Plan* (KRSTP) was adopted in 2003 with the objective to create a "comprehensive plan to guide the planning and development of multi-use trails along the Kern River corridor." The vision of this document is to develop a system of trails that connect residents to open space, parks and other recreational facilities adjacent to the Kern River.

The KRSTP identifies various types of trails and facilities within its plan, and calls for the following bicycle facilities to develop a complete multi-modal network in relation to the river:

- Bicycle, Equestrian and Pedestrian Multi-Use Trails
- Bicycle and Pedestrian (only) Multi-Use Trails
- Class I Bike Paths
- Class II Bike Lanes
- Class III Signed, Shared Roadways

The first goal of the KRSTP states that the plan hopes to "create a comprehensive multi-use trail plan."

Recognizing bicyclists as a major user of multi-

use trails for both transportation and recreation, the KRSTP plays an important part of developing bicycle infrastructure and completing the County bikeway network along the Kern River.

2.5 Tejon Mountain Village Specific Plan

The *Tejon Mountain Village Specific Plan* was adopted by the Board of Supervisors in October 2009. The Tejon Mountain Village is located in the southwestern portion of Kern County, approximately 35 miles south of Bakersfield. As it relates to bicycling in Kern County, the purpose of this specific plan is to "provide detailed direction for the future development and conservation of the Specific Plan Area over an approximate 30-year build out." Increasingly, bicycling is becoming a part of conservation discussions, and should be accommodated during new development whenever possible.

The Circulation Element of the document addresses present and planned facilities that connect Tejon Village residents to destinations within the community. Among its designated "Design Issues" are addressing the needs of bicyclists by "providing alternative transportation options for the preservation of air quality, energy efficiency, health considerations and (to) reduce traffic impacts."

Goals of the Circulation Element include to:

- Create a non-vehicular circulation system (i.e. trail system) to provide controlled access to open space areas and environmental features of the property; and promote healthy alternatives to vehicular transportation.
- Create trail design options which allow for the implementation of multi-use trails adjacent to the public road network of the Specific Area Plan

2.6 Kern County General Plan

The *Kern County General Plan* was adopted in 2009 and helps the county plan for long-term growth. The Circulation Element is a key component of the General Plan, with the responsibility to "set up goals and guiding policies about building transportation improvements" for Kern County.

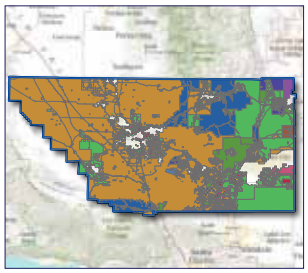
The Kern County General Plan Circulation Element does not fully integrate bicycles into its mobility strategy. Kern County has minimum right-of-way widths for roads, depending on the street classification (e.g. arterial, collector, etc.). These widths do not include the provision of bikeways, and will be considered on a "case-by-case" basis.

According to the Circulation Element, bicycles are considered an "other mode" and are addressed in greater detail in the Kern County Federal Transportation Improvement Plan (FTIP), which is an implementation measure of the General Plan's Circulation Element and Long-Range Transportation Plan.

2.7 Inyokern Specific Plan

Inyokern is an unincorporated area located west of the City of Ridgecrest along major the transportation corridors – State Route 178 and US Highway 395. This community serves as a retirement area and rural lifestyle alternative to the city of Ridgecrest. The Inyokern Specific Plan has not been updated in over 20 years due to limited funding. The plan discusses the economic development assets of the community including its privilege location along the main north/south route on the eastern side of the Sierra, U.S Highway 395. Although there is no discussion in the Plan regarding non-motorized transportation alternatives, it is important to note that Highway 395, State Route 178 and major arterial Brown Road are highly desirable routes for bicycle commuting and recreational bicycling. Future update of this plan should include recommendations for developing the Inyokern Loop.

2.8 Kern County Code of Ordinances



The *Kern County Code of Zoning Ordinances* contains the official county standards and regulations instructing the community on the proper use and organization of land within County boundaries. Some ordinances influence bicycle facilities, and are discussed in the paragraphs below.

19.80.020 Development Standards – Multifamily Residential Districts

Clause Q. requires that all multifamily development with 5 or more units must provide bicycle racks or lockers at a ratio of one parking space per three residential units.

19.82.20 Required Parking Spaces

A minimum of 10 bike racks are required at all swimming pools and video game arcades. Studies suggest more could be added. Bike counts could be taken to justify or warrant additional bicycle racks.

The Kern County Code of ordinances addresses bicycle facilities very minimally, with a limited number of minimum parking requirements for corresponding land uses. In order to expand bicycle parking facilities and support bicycling, additional minimum parking requirements could be added to different land uses. Requirements could be set by conducting bike counts to assess which areas need more parking facilities.

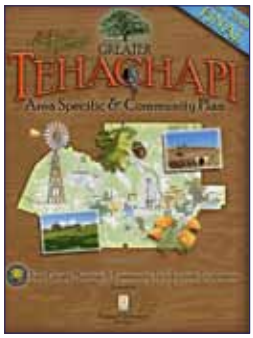
1.10 Proposed 2011 Zoning Ordinance Amendments

If adopted, the recommended amendments to the zoning ordinances will influence the built environment and the facilities provided to bicyclists within Kern County.

Section 19.45.130 discusses development standards

for "Passive Recreation" land areas, which applies to bicycle trails (off-street). This ordinance requires bike trails to have restroom facilities, drinking fountains, lighting, and trash receptacles.

2.9 Greater Tehachapi Area Specific & Community Plan



The *Greater Tehachapi Area Specific and Community Plan* was adopted by the Board of Supervisors of Kern County in 2010. The intent of the Plan is to provide guidance and recommendations for the development of the area in accordance with the provisions of the Kern County General Plan.

The Greater Tehachapi Area encompasses approximately 275 square miles of unincorporated communities located in eastern Kern County between the San Joaquin Valley and the Mojave Desert.

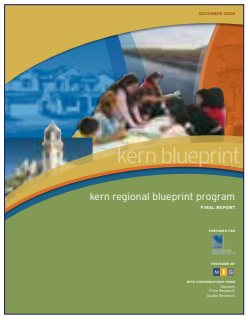
The Plan establishes planning goals, policies and implementation measures to guide future growth and ensure sustainability of the Greater Tehachapi Area (GTA) from 2010-2030.

The Circulation Element of the Plan identifies the location for existing and proposed expansion of the transportation network in the GTA, including infrastructure for alternative transportation modes.

The Circulation Element identifies the following issues relevant to the development of alternative transportation facilities, including bicycle, trails and pedestrian networks:

- Limited number of roadway facilities, and lack of connectivity between the GTA communities.
- Coordination between multiple land management agencies, and property owners within the GTS region for the development of connected trails.
- The future establishment and realignment of trails, including the Pacific Crest Trail, may be impacted by property rights of private and public property owners.
- Opportunities for new bicycle and pedestrian facilities can be studied along existing railroad right-of-ways and open space areas.
- Opportunities for the implementation of the Complete Streets Act (CA-AB1358) requirements specified in the Kern County General Plan- it is anticipated that improved facilities for alternative transportation modes will be more readily available.
- Most of the existing and planned facilities are located within the City of Tehachapi. The existing "Freedom Trail," that runs from Golden Hills into the City and connects to a Class I bicycle path.

2.10 Kern Regional Blueprint Program



The *Kern Regional Blueprint Program*, led by KernCOG is part of an eight-county San Joaquin Valley planning process. At both the County and Valley levels, the program presents a series of twelve principles designed to increase coordination between land use and transportation decisions throughout Kern County.

Relevant to the scope of work for this planning effort, Principle #2 urges the creation of communities and land use scenarios that increase levels of walking and bicycling as a solution to air quality and congestion issues. Applicable measures to stimulate active transportation include:

- Develop a Pedestrian Master Plan

- Increase Street Connectivity
- Develop Walking Awareness and Promotion Programs
- Design Streets for Pedestrian Comfort
- Use Trees and Green Infrastructure to Provide Shelter, Beauty, Urban Heat Reduction and Separation from Auto Traffic
- Consider Park Streets to Calm Traffic and Increase the Amount of On-Street Parking
- Minimize Roadway Width
- Place Transit Stops and Stations in the Core and Encourage Safe Pedestrian Routes to Transit
- Integrate Pedestrian Access into the Community Master Plan
- Adopt Design Standards for Streets That Ensure Safety and Mobility
- Adopt Design Standards for sidewalks
- Require Traffic Calming Techniques
- Provide Grants or Other Financial Assistance to Retrofit Existing Streets and Sidewalks
- Connect Walkways, Parking Lots, Greenways and Developments
- Beautify and Maintain Existing and Future Walkways

Principle #8 provides guidance into improving transportation choices for residents, including:

- Prepare Master Plan for Transportation
- Update Plans for Transit, Pedestrian, and Bicycle Infrastructure
- Implement Transportation Demand Management (TDM) Measures
- Address parking needs and opportunities
- Improve roadway connectivity standards
- Connect transportation modes to one another
- Create comprehensive bicycling programs
- Require bicycle parking for new development
- Require sidewalks in all new development
- Create programs and policies that support car sharing
- Collaborate with employers and provide information and incentives for programs to minimize or decrease rush-hour congestion impacts

2.11 Destination 2030 - Kern County Regional Transportation Plan and Federal Transportation Improvement Program

The *KernCOG FTIP* functions as the implementation document for the County's Long-Range Transportation Plan, visioned out to 2030. The FTP identifies the popularity and growth of bicycling in Kern County, and supports the development of mixed-use zoning to support and expand bicycling. The FTIP identifies key funding sources that will help build the bikeway network in Kern County, including:

- Transportation Enhancements Program (TE)
- Recreational Trails Program (RTP)

The FTIP then identifies recommended projects for TE and RTP funding sources. The recommended projects for TE funds include:

- Sycamore Road Bike Lane
- Derby Street Bike Lane
- Lake Isabella Blvd Bike Path
- Tehachapi (various locations) Bike Paths

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3. Existing Conditions

3.1 Setting

Kern County straddles the Sierra Nevada and Tehachapi Mountains, covering both the south end of the San Joaquin Valley and a portion of the High Desert Region on the east side of the Sierras. It extends north of Los Angeles County and Ventura County, east of San Luis Obispo County, west of San Bernardino County and south of the counties of Tulare, Inyo and Kings. Kern County encompasses approximately 8,140 square miles of land, with an estimated population of 780,953 as of 2009 [7]. Significant variations in terrain, climate, geography and environment are evident and unique in Kern County, and can be divided in three general regions as follows:

- The Kern Valley Region, also known as the southern San Joaquin Valley area. Most of the urbanized areas in the County including Metropolitan Bakersfield unincorporated territory are located within the Kern Valley Region. The relatively flat terrain and fair weather of this region are very conducive to bicycle transportation.
- The Mountain Region corresponds to the western-most and central portion of the County. This region is comprised of different mountain ranges including the Tehachapi Mountains, Greenhorn Mountains and Piute Mountains.
- The High Desert Region is located in the eastern section of the County. The Indian Wells Valley with an elevation of 2,600 feet is located in the High Desert Region.

The focus of this bicycle master plan is the unincorporated portion of Kern County, including Metropolitan Bakersfield, the Greater Tehachapi Area, the Kern River Valley, the Tejon Mountain Village, Indian Wells Valley and Lake Isabella.

7. *American Community Survey, 5 year estimate 2005-2009*

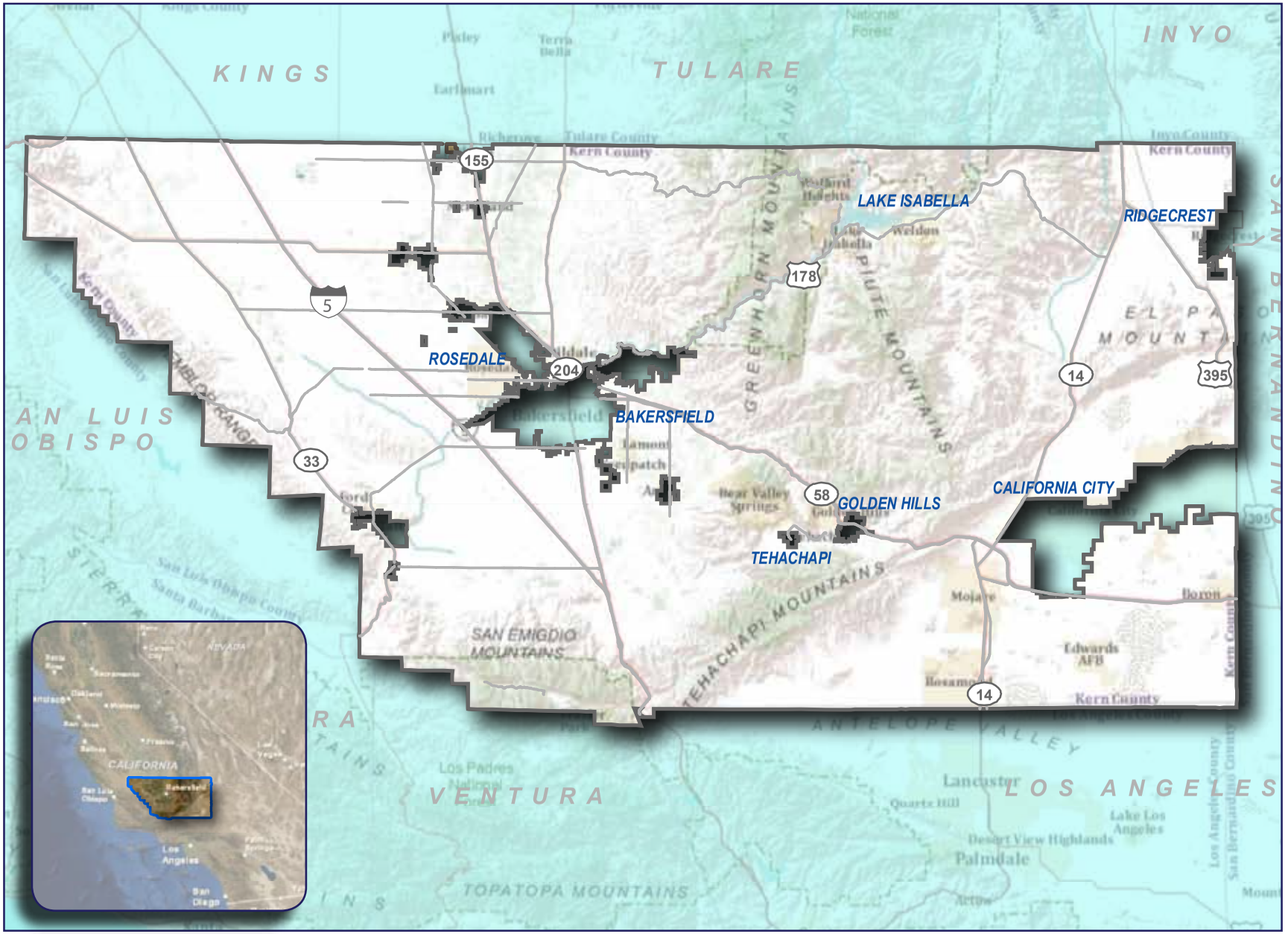
Table 3-1 shows the population estimates[7] of the major cities and the unincorporated areas of Kern County. The Unincorporated territory comprises approximately 25% of the population of the County as shown in **Table 3-1. Figure 3-1** displays the regional setting and study area.

Table 3-1: Kern County Population Estimates by Major Cities

Municipality	Population Estimate (ACS 05-09	Percent of Total Population
Unincorporated County	196,100	25%
Arvin	14,858	2%
Bakersfield	310,077	40%
California City	13,393	2%
Delano	50,461	6%
McFarland	11,890	2%
Maricopa	1,345	0.2%
Ridgecrest	25,588	3%
Shafter	15,203	2%
Taft	9,053	1%
Tehachapi	11,884	2%
Wasco	24,169	3%
Kern County	780,953*	

** Population of the entire Kern County Region. Not a direct addition of the regions selected above.*

Figure 3-1: Project Study Area



3.2 Land Uses

Kern County is comprised predominately of natural resource land, open space, and productive farmland. **Figure 3-2** shows Kern County's existing land uses. **Table 3-2** summarizes the approximate percentage of each existing land use type in the county as determined by Alta's Geographic Information Systems (GIS) analysis.

Table 3-2: Kern County Land Uses

Land Use Type	Percentage
Agricultural/Resources and Open Space	48%
Low-Density Residential	19%
Federal/State Land	17%
Single-Family Residential	5%
Public Facilities	5%
Industrial	3%
Commercial	2%
Multi-Family Residential	1%

Approximately fifty percent of the county land is reserved for agricultural and other natural resources. Additionally, about one-fifth of the county is under Federal or State ownership. Located in Western Mojave Desert is the Naval Air Weapons Station (NAWS), also known as China Lake U. S. Navy Station as the main gate of the station is located at the intersection of Inyokern Road (Highway 178) and China Lake Boulevard. China Lake is the United States Navy's largest single land holding, representing 85 percent of the Navy's land for weapons and armaments research, development, acquisition, testing and evaluation use and 38 percent the Navy's land holdings worldwide. Currently at least 95 percent of that land is undeveloped.

The incorporated cities of Bakersfield, California City, Arvin, Tehachapi, Delano, Shafter, Wasco, Ridgecrest and Taft, constitute the developed areas, containing most of the residential, and commercial land uses in the County. Low-density residential communities account for almost twenty percent of the county land and are well-distributed throughout the unincorporated areas of the County.

3.3 Existing Bikeways

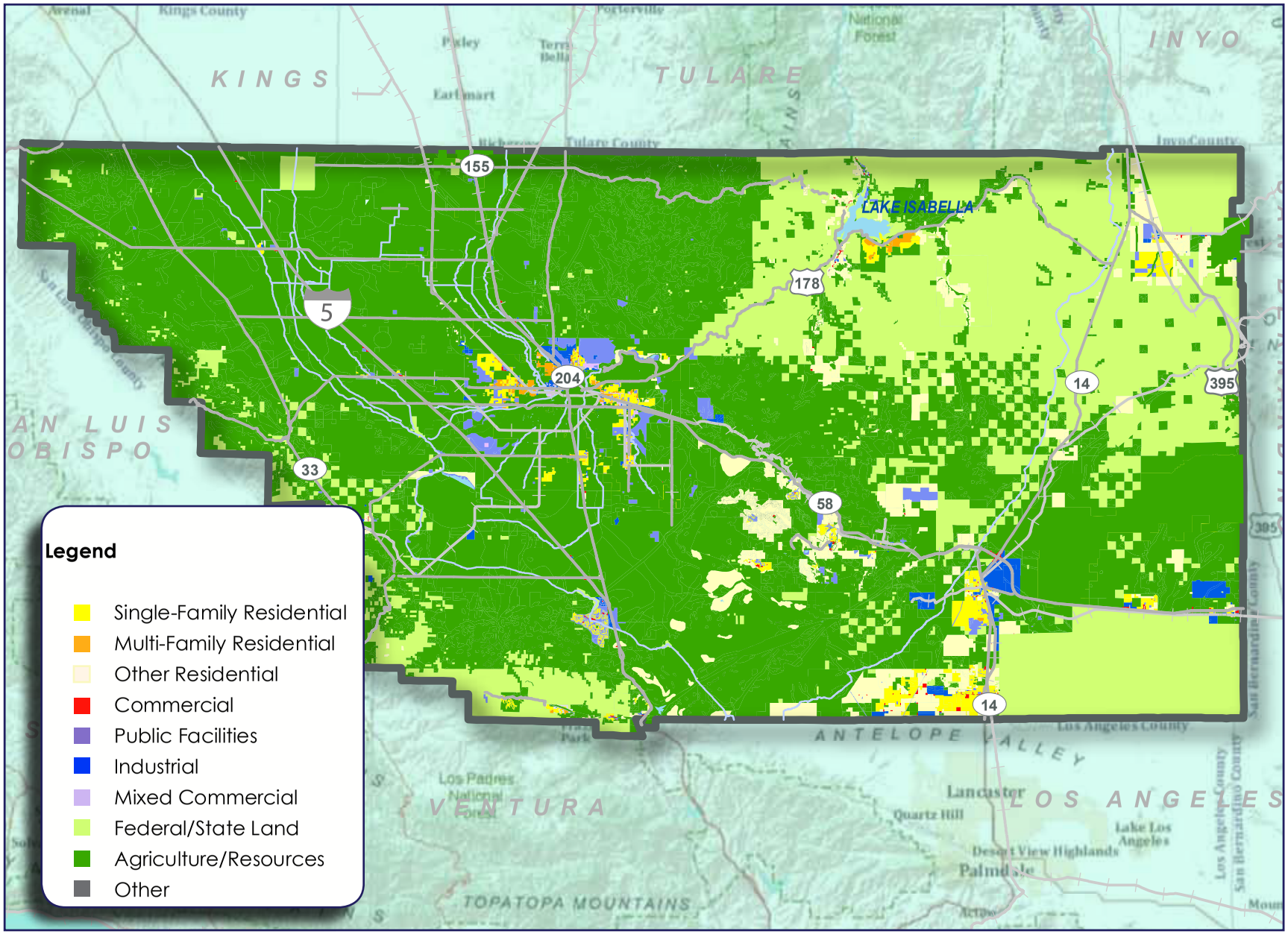
Kern County's topography and climate conditions provide many opportunities for bicycling activities. The climate is favorable for bicycling, with clear, dry weather and moderate temperatures common throughout much of the year; however, temperatures can get high in the summer with an average of 108 days of over 90 degrees. In the winter months, Tule Fog is also concerning as it creates poor visibility discouraging people to ride their bike. The terrain varies between valley, desert and mountains. The majority of urbanized land features relatively flat terrain ideal for utilitarian and commuting cycling, and the terrain of the foothills is ideal for more challenging bicycle riding.

There are 67 miles of existing bicycle facilities in the unincorporated parts of Kern County. While the Kern River Bike Path is the premier bicycle facility in Kern County, all but three miles of its length are in the City of Bakersfield. The bicycle facilities in unincorporated Kern County consist of over 25 miles of Class II Bike Lanes, over 38 miles of Class III Bike Routes, and the aforementioned three miles of Class I Bike Path along the Kern River.

Table 3-3 provides a breakdown of existing facilities by segment and by class.

It is also important to recognize the efforts of the Adventure Cycling Association of Missoula, Montana who is currently working with AASHTO to develop a United States Bike Route System (USBR) where, when fully implemented, the system will be a series of cross-country bike routes. Currently, both SR-33 and SR-46 in western Kern County are being considered as a part of the proposed USBR 87 which will go from Seattle, Washington to Ventura, California via Portland, Oregon, Grant Pass, Oregon, Redding, California, Sacramento, California and Fresno California. This route will intersect USBR 95, the Pacific coast route. Appropriate signage is now available in Part 9 of the current CA-MUTCD for these proposed routes.

Figure 3-2: Existing Land Use



3.4 Bike Parking and End-of-Trip Facilities

Aside from the incorporated areas, Kern County generally lacks bike parking facilities. The county does not have a bike parking installation program and does not maintain inventories of bicycle parking found within the public right-of-way or at public facilities, such as civic buildings or public parks.

3.5 Existing Bicycle Programs

The Kern Council of Governments runs the Kern Commuter Connection program. The goal of this program is to reduce traffic congestion during peak times, as well as reduce greenhouse gas emissions and other environmental effects that resulted from everyday commuting trips. The Kern Commuter Connection program offers an IRS Commuter Tax Benefit to employees who ride their bikes to work.

The bicycle advocacy group Bike Bakersfield is one of the main sources for information and resources related to bicycling in the County. Bike Bakersfield's mission is to promote healthier lifestyles, reduce vehicular traffic congestion and polluting emissions by encouraging county residents to bicycle for transportation. Throughout the year, they offer bicycle safety workshops at elementary schools, encourage and support high school cycling clubs, and research routes for people to get to work, school or other desirable destinations. Their programs include:

- Safe Routes to School (SRTS) programs: Bike Bakersfield provided SRTS information to six different schools during 2011.
- Bike Kitchen: Bike Bakersfield offers tools and assistance for fixing bikes, as well as affordable bikes for sale, or in exchange for 15 hours of volunteer time.
- Bike Education: Bike Bakersfield offers Road Skills 1 and 2 classes designed to improve the confidence of cyclists in managing challenging situations on the road.
- Bike to Work Handbook: Bike Bakersfield provides this free guide that illustrates quick tips for commuting by bike.
- Bike Buddy Program: Bike Bakersfield assists in matching members of the community up so that people new to bike commuting can have an experienced mentor.

The High Sierra Cyclists also serves as a bicycle advocacy group serving the California High Desert out of Ridgecrest. The club was established in 1987 and provides information about local routes, rides, trainings, bike shops, safety tips, and weather thinks for the Indian Wells Valley area. Their website (www.highsierracyclists.org) has a calendar posting weekly rides for residents to participate in.

3.6 Existing Bikeway Exhibits

The State of California uses a three-tiered system to identify bicycle facilities. A brief description of these classifications can be seen in **Figure 3-3** at right.

Figure 3-4 illustrates the existing County bike facilities, and represents a digital GIS visualization of the County's tabular bikeway data as seen in **Table 3-3.**

Figures 3-5 and **3-6** were developed by Kern COG and show the regional transportation and active recreation opportunities available in the County.

Figure 3-3: California Bicycle Facility Classification

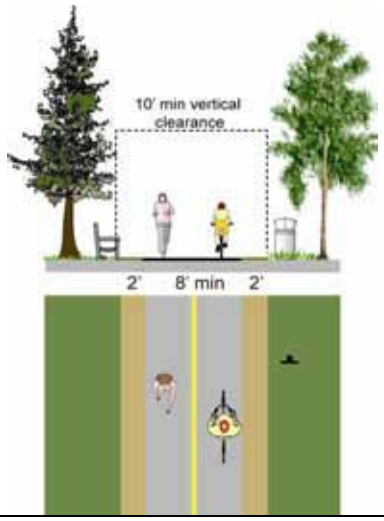
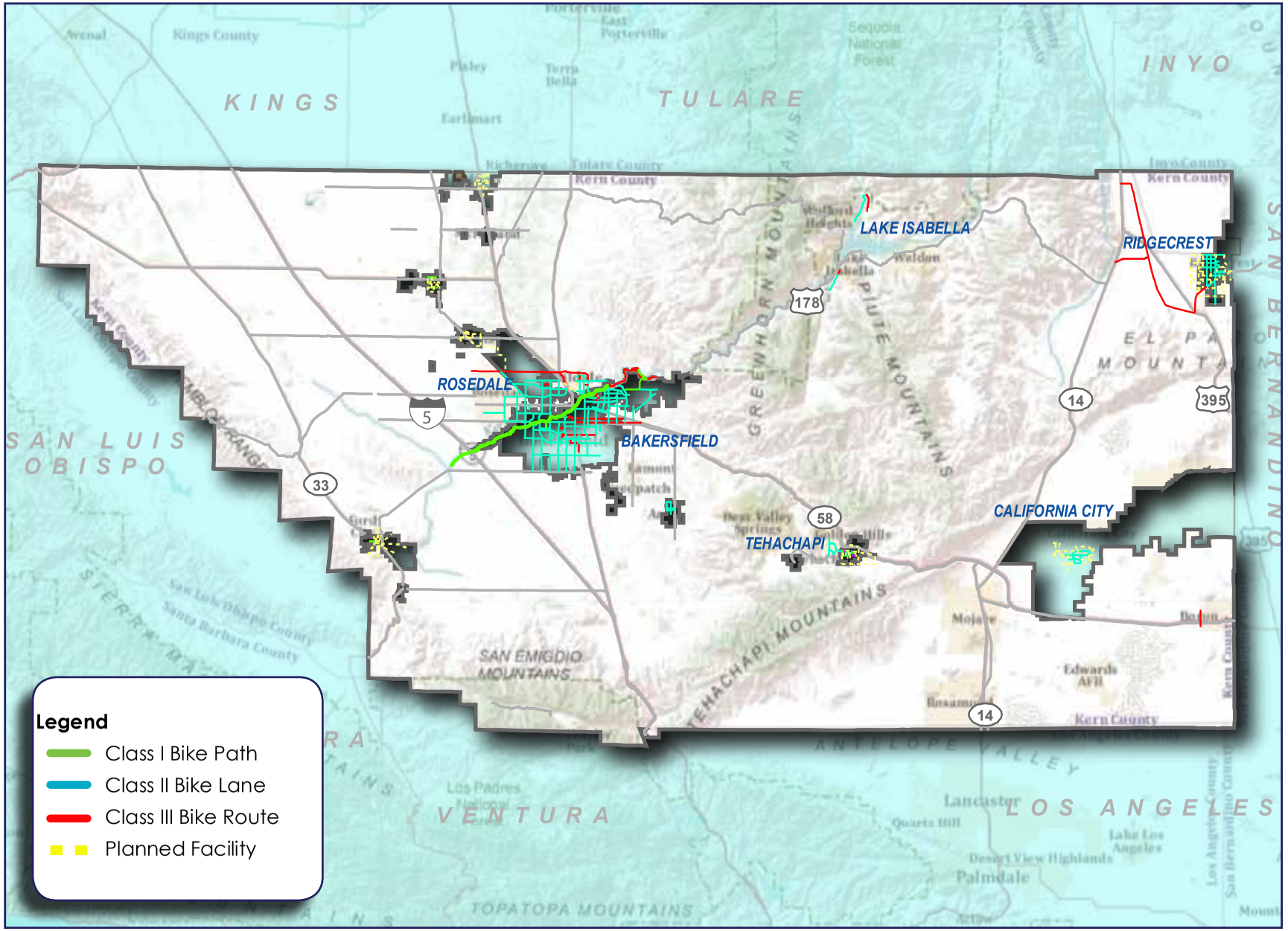
Class Description	Example Graphic
Class I – Bike Path Bike paths, also termed shared-use or multi-use paths, are paved right-of-way for exclusive use by bicyclists, pedestrians, and those using non-motorized modes of travel. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. Bike paths provide critical connections in the city where roadways are absent or are not conducive to bicycle travel.	
Class II - Bike Lane Bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive or preferential bicycle travel. Bike lanes are one-way facilities on either side of a roadway. Bike lanes can be enhanced with treatments that improve safety and connectivity by addressing site-specific issues, such as additional warning or way-finding signage.	
Class III - Bike Route Bike routes provide shared use with motor vehicle traffic within the same travel lane. Designated by signage and / or on-street shared lane markings. They are typically used on roads with low speeds and traffic volumes; however, they can be used on higher volume roads with wide outside lanes or shoulders. Shared lane markings, in addition to signage, may be more appropiate for roadways with narrow travel lanes and parking. Bike routes provide continuity to other bike facilities or designate preferred routes through corridors with high demand.	

Table 3-3: Existing Bikeways in Unincorporated Kern County by Classification

Bicycle Facilities by Type	From	To	Mileage
Class I Facilities			
Kern River Bike Path	Western Terminus	Eastern Terminus	3.0 (Not including 21.5 miles within Bakersfield City Limits)
		Total Class I Mileage	3.0
Class II Facilities			
Alfred Harrell Hwy	Hart Park	Fairfax Rd	3.8
China Grade Loop	Airport Dr	Carrere St	1.1
China Grade Loop	Manor St	China Grade Loop/Round Mtn Rd	2.2
Cottonwood Rd	Casa Loma	SR-58	0.9
Day Ave	Airport Dr	North Chester Ave	1.0
Manor St	Kern River	China Grade Loop	1.3
North Chester Ave	Kern River	Manor St	2.9
Old Farm Rd	Rosedale Hwy	Palm Ave	0.5
Roberts Ln	Sequoia Dr	North Chester	0.7
Burlando Rd	Nellie Dent Dr	Kernville Rd/Burlando Rd	3.4
Golden Hills Bl	Santa Barbara Dr	Woodford Tehachapi Rd	0.9
Kernville Road	Burlando Rd	Sierra Way	0.5
Lake Isabella Bl	Kilbreth Dr	Erskine Creek Rd	1.5
Red Apple Ave	Westwood Bl	SR -202	0.8
Westwood Bl	Golden Hills Bl	Woodford Tehachapi Rd	2.0
Woodford-Tehachapi Rd	White Pine	SR-202	2.0
		Total Class II Mileage	25.5
Class III Facilities			
Alta Vista Dr	Panorama Dr	Bernard St	1.1
Belle Terrace	South H St	Wible Rd	1.0
Brown Road	US 395	SR 14	20.0
China Grade Loop Bike Path	Crossing at China Grade Loop	Alfred Harrell Hwy	0.5
Columbus St	Alta Vista Dr	River Bl	0.5
Frontage Rd M198G	Alfred Harrell Hwy	Lake Ming Rd	1.5
Inyokern Road (SR 178)	Brown Road	SR 14	4.0
McCray St	Day Ave	China Grade Loop	0.6
Norris Rd	Calloway Dr	Coffee Rd	1.0
Norris Rd	North Chester	Manor St	0.5
Pegasus Dr	Norris Rd	7th Standard Rd	1.8
River Dr	Thru Hart Park	Thru Hart Park	1.5
Borax Rd	20 Mule Team Rd	Suckow Rd	1.9
Lake Isabella Bl	Turner Rd	Erskine Creek Rd	0.6
Sierra Way	Kernville Rd	Kernville Airport	2.0
		Total Class III Mileage	38.5
		Total All County Bikeways	67.0

Figure 3-4: Kern County Existing Bikeways



3 Existing Conditions

Figure 3-5: Kern County Transportation Facilities

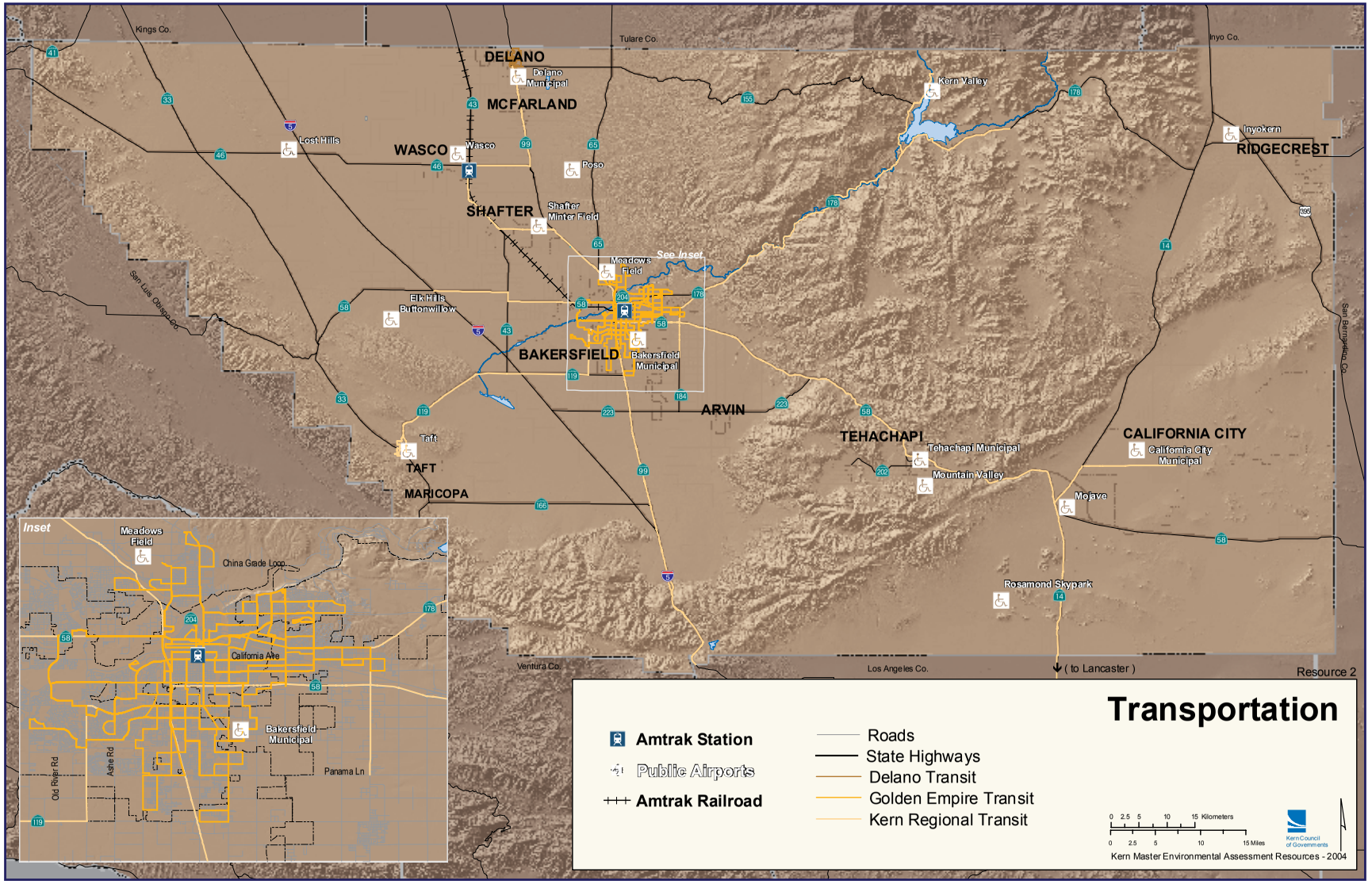
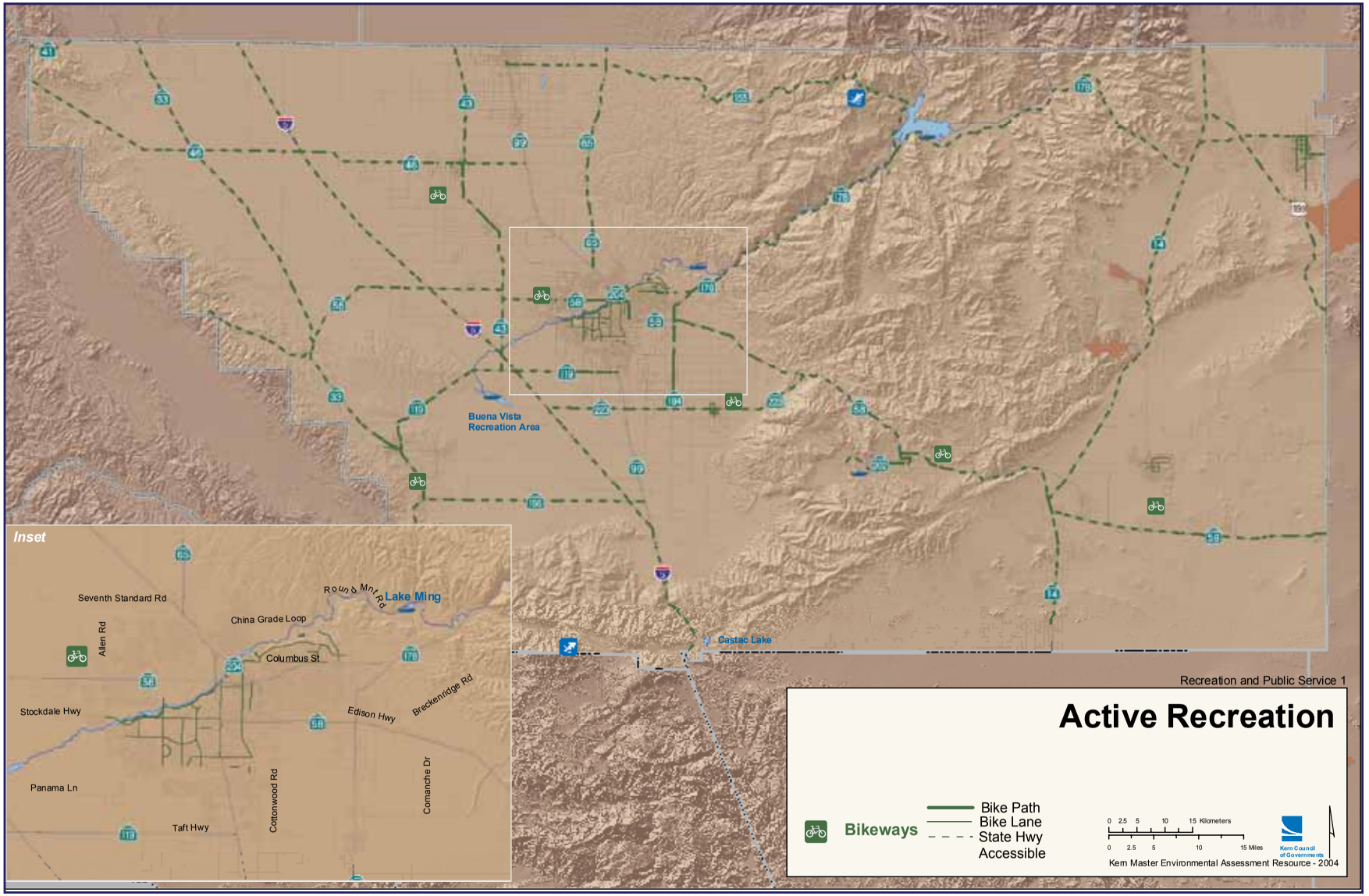


Figure 3-6: Kern County Active Recreation Facilities



3.7 Facility Assessment by Community

This section presents and evaluates the network of existing and proposed bicycle facilities in Kern County, specifically those facilities adjacent to the incorporated cities of the county. A well-connected series of bikeway facilities will require close coordination between Kern COG and the county's incorporated cities, as bicyclists frequently cross jurisdictional boundaries as part of their travels, and a robust bikeway network should reflect this multi-jurisdictional emphasis to ensure that a seamless, well integrated bikeway network is developed.

3.7.1 Bikeway Gap Types

Bikeway gaps exist in various forms, ranging from short "missing links" on a specific street or path corridor, to larger geographic areas with few or no bicycle facilities. Gaps can be organized based on length and other characteristics. For the purposes of this analysis, bikeway gaps are classified into five main categories, described below.

Spot gaps: Spot gaps refer to point-specific locations lacking dedicated bicycle facilities or other treatments to accommodate safe and comfortable bicycle travel. Spot gaps primarily include intersections and other vehicle/bicycle conflict areas posing challenges for riders. Examples include bike lanes on a major street "dropping" to make way for right turn lanes at the intersection, or a lack of intersection crossing treatments for a route or path as it approaches a major street.

Connection gaps: Connection gaps are missing segments (1/4 mile long or less) on a clearly defined and otherwise well-connected bikeway. Major barriers standing between bicycle destinations and clearly defined routes also represent connection gaps. Examples include bike lanes on a major street "dropping" for several blocks to make way for on-street parking; a discontinuous off-street path; or a freeway standing between a major bicycle route and a school.

Lineal gaps: Similar to connection gaps, lineal gaps are ½- to one-mile long missing link segments on a clearly defined and otherwise well-connected bikeway.

Corridor gaps: On clearly defined and otherwise well-connected bikeways, corridor gaps are missing links longer than one mile. These gaps will sometimes encompass an entire street corridor where bicycle facilities are desired but do not currently exist.

System gaps: Larger geographic areas (e.g., a neighborhood or business district) where few or no bikeways exist would be identified as system gaps. System gaps exist in areas where a minimum of two intersecting bikeways would be required to achieve the target network density.

3.7.2 Data Sources

Kern County's 2001 Bicycle Facilities Plan was used to develop the basemap of existing facilities seen in **Figure 3-4**. To supplement this regional figure, Kern County developed a series of figures in the 2001 Plan which focus on the facilities around each of the incorporated cities in Kern County.

A snapshot of the facilities found in and around each of the cities is presented in **Figure 3-7** through **Figure 3-17**.

Figure 3-7: Arvin Bikeways from 2001 Bicycle Facilities Plan

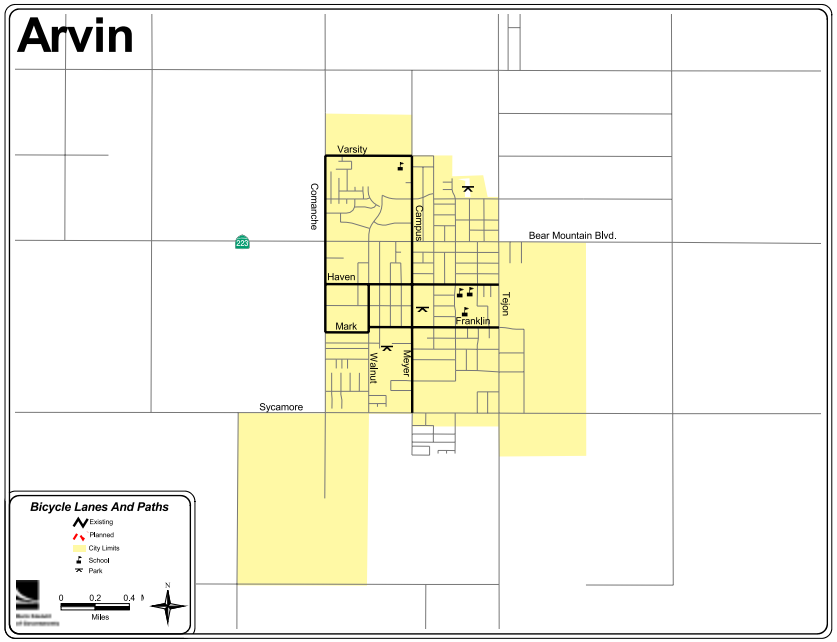
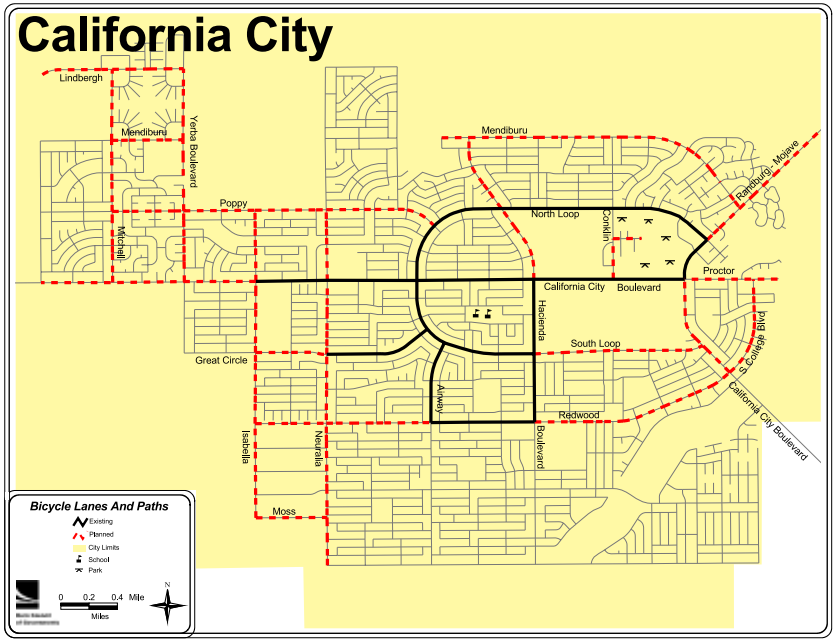


Figure 3-8: California City Bikeways from 2001 Bicycle Facilities

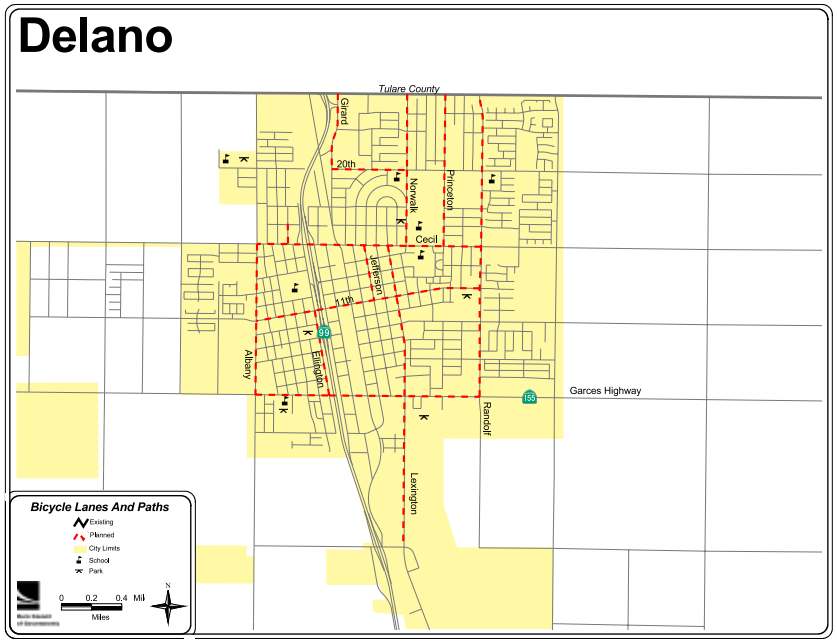


Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	-	-	-	-
Class II	5.4	-	-	-
Class III	-	-	-	-
Total	5.4	-	-	-

Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	-	-	-	-
Class II	10.0	24.9	-	-
Class III	-	-	-	-
Total	10.0	24.9	-	-

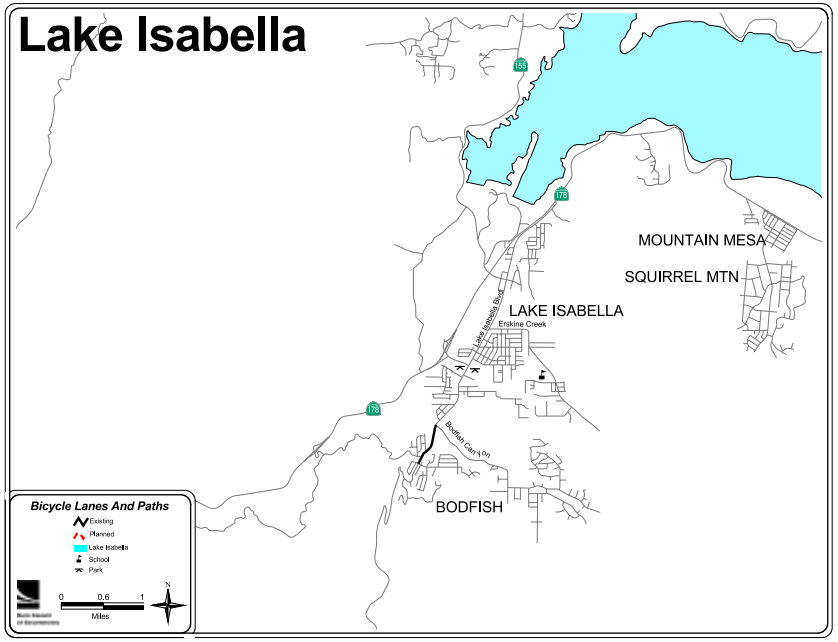
3 Existing Conditions

Figure 3-9: Delano Bikeways from 2001 Bicycle Facilities Plan



Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	-	-	-	-
Class II	-	13.0	-	-
Class III	-	-	-	-
Total	-	13.0	-	-

Figure 3-10: Lake Isabella Bikeways from 2001 Bicycle Facilities



Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	-	-	-	-
Class II	0.6	-	-	5.5
Class III	-	-	-	2.6
Total	0.6	-	-	8.1

Figure 3-11: Maricopa Bikeways from 2001 Bicycle Facilities Plan

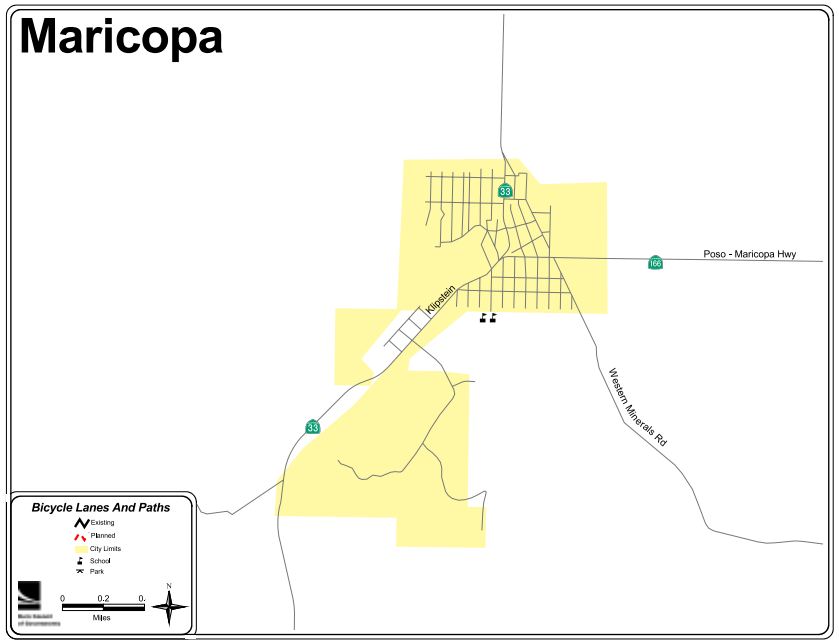
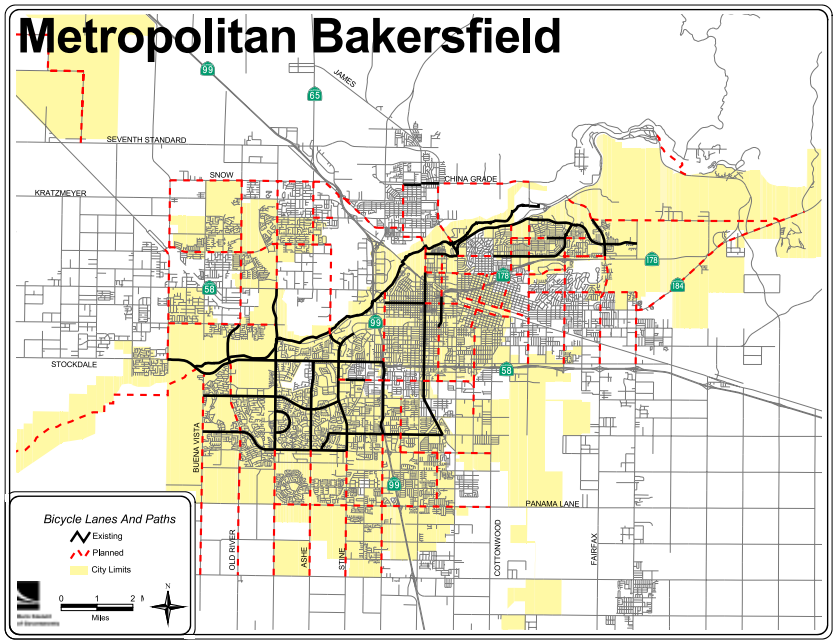


Figure 3-12: Metropolitan Bakersfield Bikeways from 2001 Bicycle Facilities Plan



Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	-	-	-	-
Class II	-	-	-	-
Class III	-	-	-	-
TOTAL	-	-	-	-

Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	22.3	-	4.5	-
Class II	186.5	-	23.2	3.2
Class III	37.8	-	18.3	-
TOTAL	246.6	-	46.0	3.2

3 Existing Conditions

Figure 3-13: Ridgecrest Bikeways from 2001 Bicycle Facilities Plan

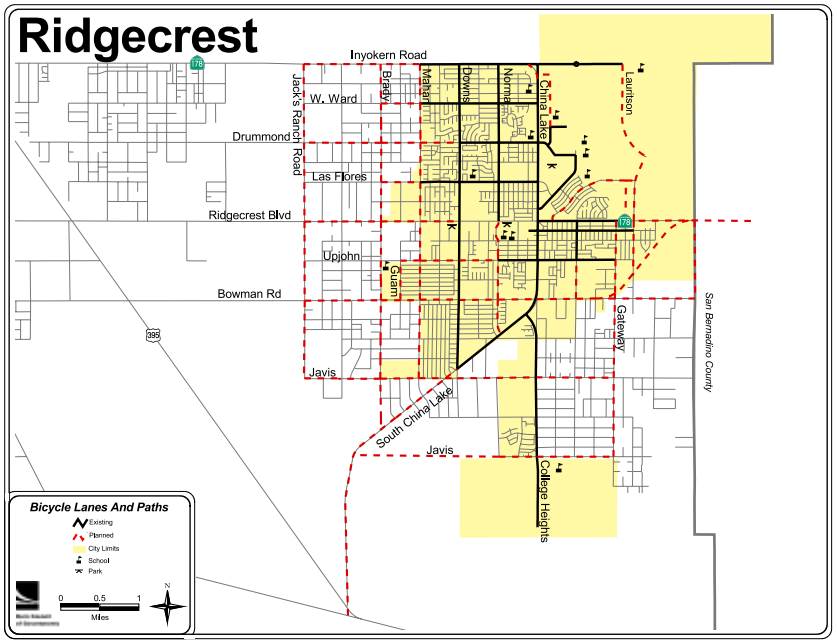
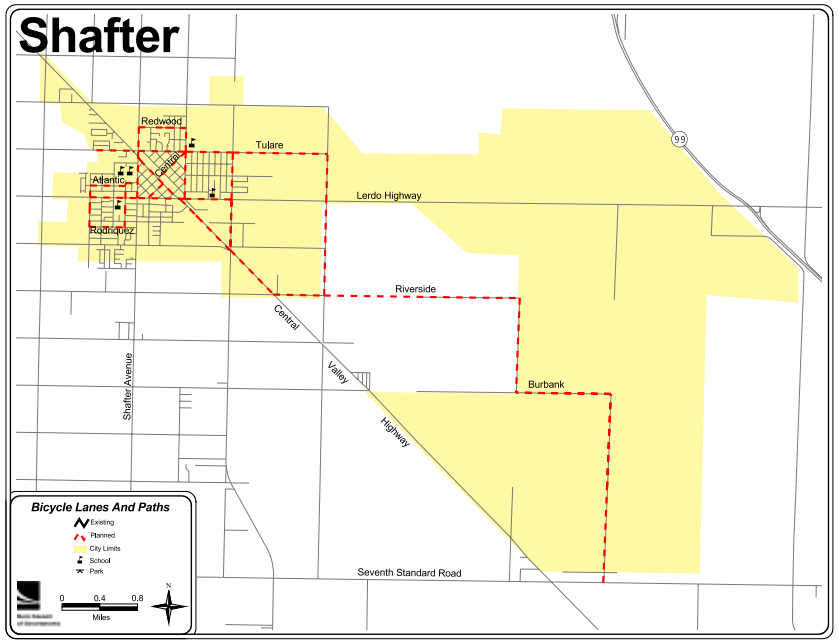


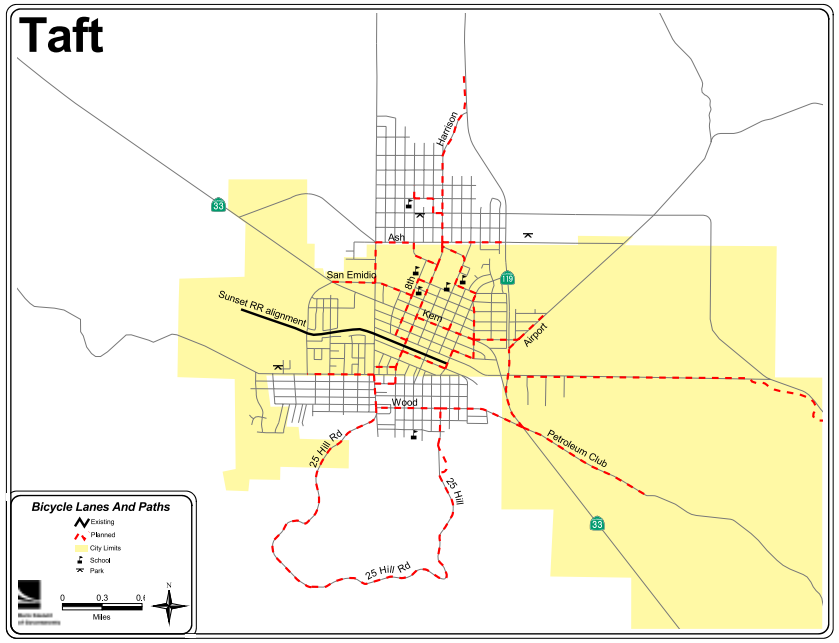
Figure 3-14: Taft Bikeways from 2001 Bicycle Facilities Plan



Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	-	2.9	-	-
Class II	26.2	21.5	-	25.3
Class III	-	-	-	-
TOTAL	-	24.4	-	25.3

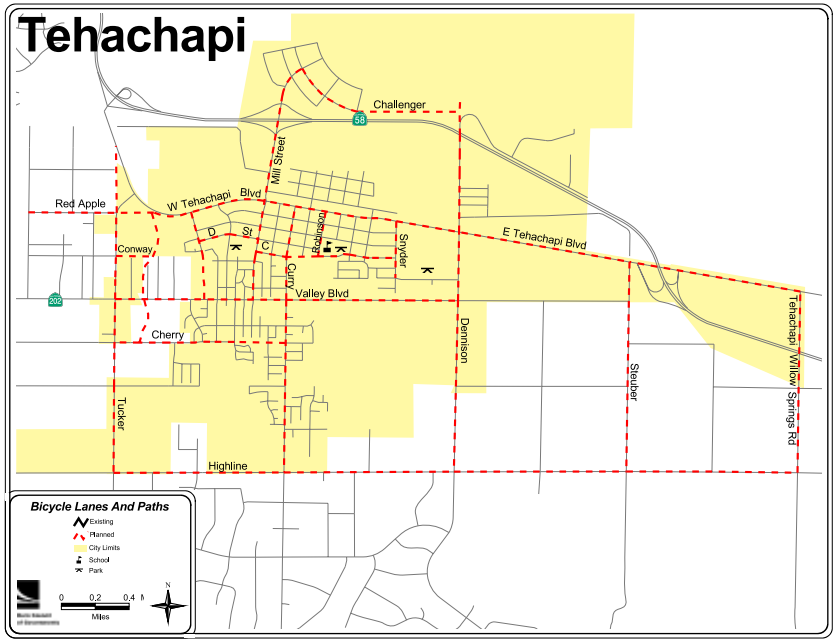
Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	-	-	-	-
Class II	-	16.8	-	2.2
Class III	-	-	-	-
TOTAL	-	16.8	-	2.2

Figure 3-15: Taft Bikeways from 2001 Bicycle Facilities Plan



Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	1.1	-	-	-
Class II	-	18.7	-	2.6
Class III	-	-	-	-
TOTAL	1.1	18.7	-	2.6

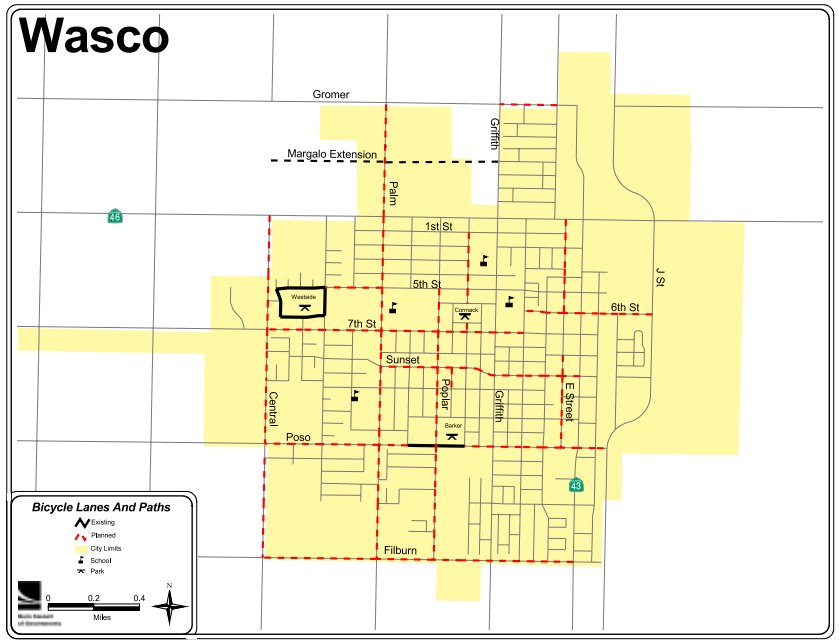
Figure 3-16: Tehachapi Bikeways from 2001 Bicycle Facilities Plan



Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	1.9	1.7	-	-
Class II	2.4	13.6	5.7	5.5
Class III	-	-	-	-
TOTAL	4.3	15.3	5.7	5.5

3 Existing Conditions

Figure 3-17: Wasco Bikeways from 2001 Bicycle Facilities Plan



Estimated 2001 Bikeway Facility Mileage				
Facility Classification	Within City Limits		Adjacent to City Limits	
	Existing	*Proposed*	*Existing*	*Proposed*
Class I	2.2	-	-	-
Class II	-	11.2	-	-
Class III	-	-	-	-
TOTAL	2.2	11.2	-	-

3.8 Bicycle Commuter Estimates

Journey to work information collected by the US Census Bureau's American Communities Survey (ACS) is the foundation of this analysis. The ACS "Commuting to Work" data provide an indication of current bicycle system usage.

A major objective of any bicycle facility enhancement or encouragement program is to increase the "bicycle mode split" or percentage of people who choose to bike rather than drive alone. The most recent ACS data available for Kern County is the 2005-2009 five-year estimates. ACS data sets used in the model include: total population (196,100 people), employed population (73,982 people), school enrollment (39,215 students grade K-12; 9,495 college students), and travel-to-work mode split data. **Table 3-4** presents ACS mode split data for Kern County, California and the United Sates.

According to the estimates shown in **Table 3-4**, approximately 0.3 percent of unincorporated County residents reported that they travel to work by bicycle. This estimated bicycle mode share is consistent with the national average of 0.5 percent, although it is less than half of the estimated statewide average of 0.9 percent. Interestingly, the unincorporated parts of the County experience similar reported bicycle commuting rates to the more urbanized and densely populated incorporated cities within Kern County.

It is important to note that the Census figures likely underestimate the true amount of bicycling that occurs for several reasons. First, data reflect the journey to work only and therefore do not capture trips to school, for errands, or other bike trips that would supplement vehicular trips. Also, US Census data collection methods only enable a respondent to select one mode of travel, thus excluding bicycle trips as a response from those who may occasionally bicycle to work or who may use their bicycle as a part of a longer multimodal trip.

Table 3-5 provides an aggregate estimate of purposeful bicycle trips that are made daily in addition to bike-to-work commute trips.

Table 3-4: ACS Mode Split Data, Means of Transportation to Work (Population 16 & Over)

Mode	Unincorporated Kern County	Incorporated Kern County	State of California	United States
Bicycle	0.3%	0.4%	0.9%	0.5%
Drove Alone	77.1%	74.3%	72.9%	75.8%
Carpool	14.9%	18.1%	12.0%	10.6%
Transit	0.9%	1.3%	5.2%	4.9%
Walked	0.5%	1.1%	2.8%	2.8%
Other Means	3.3%	2.2%	1.4%	1.4%
Worked at Home	3.0%	2.6%	4.8%	4.0%
Total Population of workers 16 and over	73,982	211,946	16,172,152	138,541,405

Source: US Census Bureau, 2005-2009 American Community Survey

Table 3-5: Kern County Trip Volume Estimates

Trip Type	Bike	Walk	Methodology
Commute Trips			
Commuters	222	369	Employed population multiplied by mode split
Total Weekday trips	444	738	Amount of commuters multiplied by two for return trips
K-12 School Trips			
Commuters	118	196	School-aged population multiplied by mode split
Total Weekday trips	236	392	Amount of school-aged population multiplied by two for return trips
College Trips			
Commuters	28	47	College population multiplied by mode split
Total Weekday trips	56	94	Amount of college population multiplied by two for return trips
Utilitarian Trips			
Daily adult bicycle/ walking commute trips	500	832	Sum of bicycle/walking commute trips and bicycle/walking college trips
Daily Utilitarian Trips	1,095	4,093	Sum of bicycle/walking commute trips and bicycle/walking college trips multiplied by ratio of utilitarian to work trips (NHTS). Distributes weekly trips over entire week (vs. commute trips over 5 days)
Total Estimated Daily Trips	1,831	5,317	

3.9 Bicycle Counts

Bicycle counts were conducted at various locations throughout Kern County in order to identify existing levels of bicycle use and establish a benchmark for measuring the impact that proposed bicycle facilities will have on bicycle use within the County.

Counts were collected on both a weekday and weekend day (Saturday). Weekday counts were collected between the hours of 6:30 am and 9:00 am, and weekend counts were collected between 9:00 am and 12:00 noon. The count data was collected in county unincorporated communities throughout Kern County. The sites were selected by the study's steering committee members. The count locations are listed in **Table 3-6** and shown on **Figures 3-18** and **3-19**.

Table 3-6: Data Collection Dates and Locations

Location	Count Date			
Community	Intersection	11/16/11	11/17/11	11/19/11
Metro Bakersfield	Fruitvale Ave / Olive Dr.	X		
	Airport Dr. / Norris Rd.	X		
	McCray St. / Day Ave.	X		
	Roberts Ln / Chester Ave	X		X
	Columbus St. / Hawthorne Ave.	X		
	Wible Rd / Belle Terrace	X		
	South H St / Ming Ave	X		
	Mt. Vernon Ave / California Ave	X		
	Oswell St / Niles St	X		
	Fairfax / Alfred Harrell Hwy			X
	Gordons Ferry / China Grade	X		X
	Chester Ave /James Rd	X		X
Frazier Park	Frazier Mountain Park Rd / Monterey Trail	X		X
Indian Wells Valley	China Lake Bl / College Heights	X		X
	China Lake Bl / Brown Rd	X		X
	Inyokern Rd / Jacks Ranch Rd	X		X
	Inyokern Rd / Brown Rd	X		X
Lake Isabella	Lake Isabella Bl / Erskine Creek Rd		X	
	Burlando Rd / Kern River Dr.			X
Tehachapi	Westwood Bl / Golden Hills Bl.	X		X

3 Existing Conditions

Figure 3-18: Total Bicycle Counts by Location

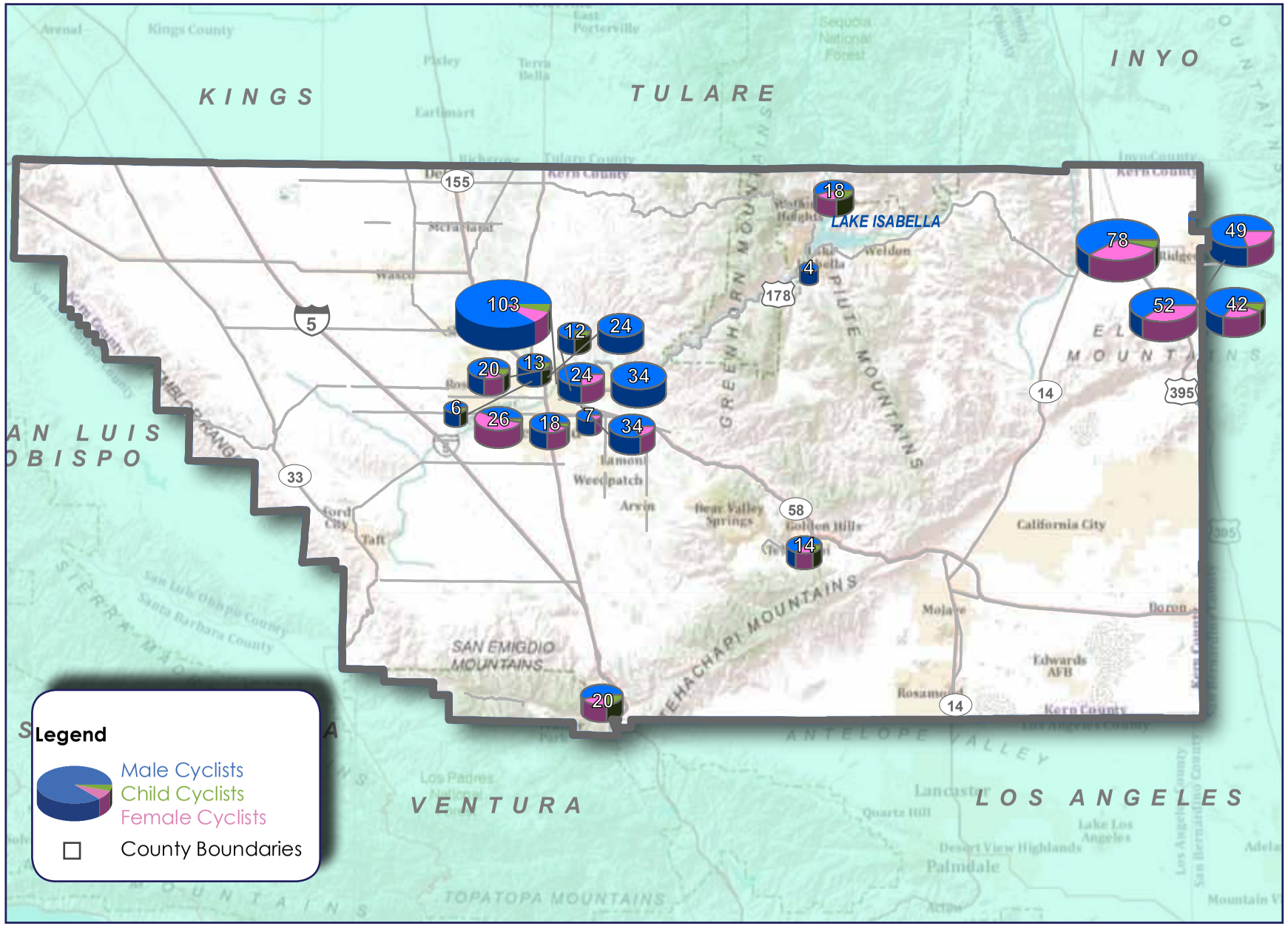
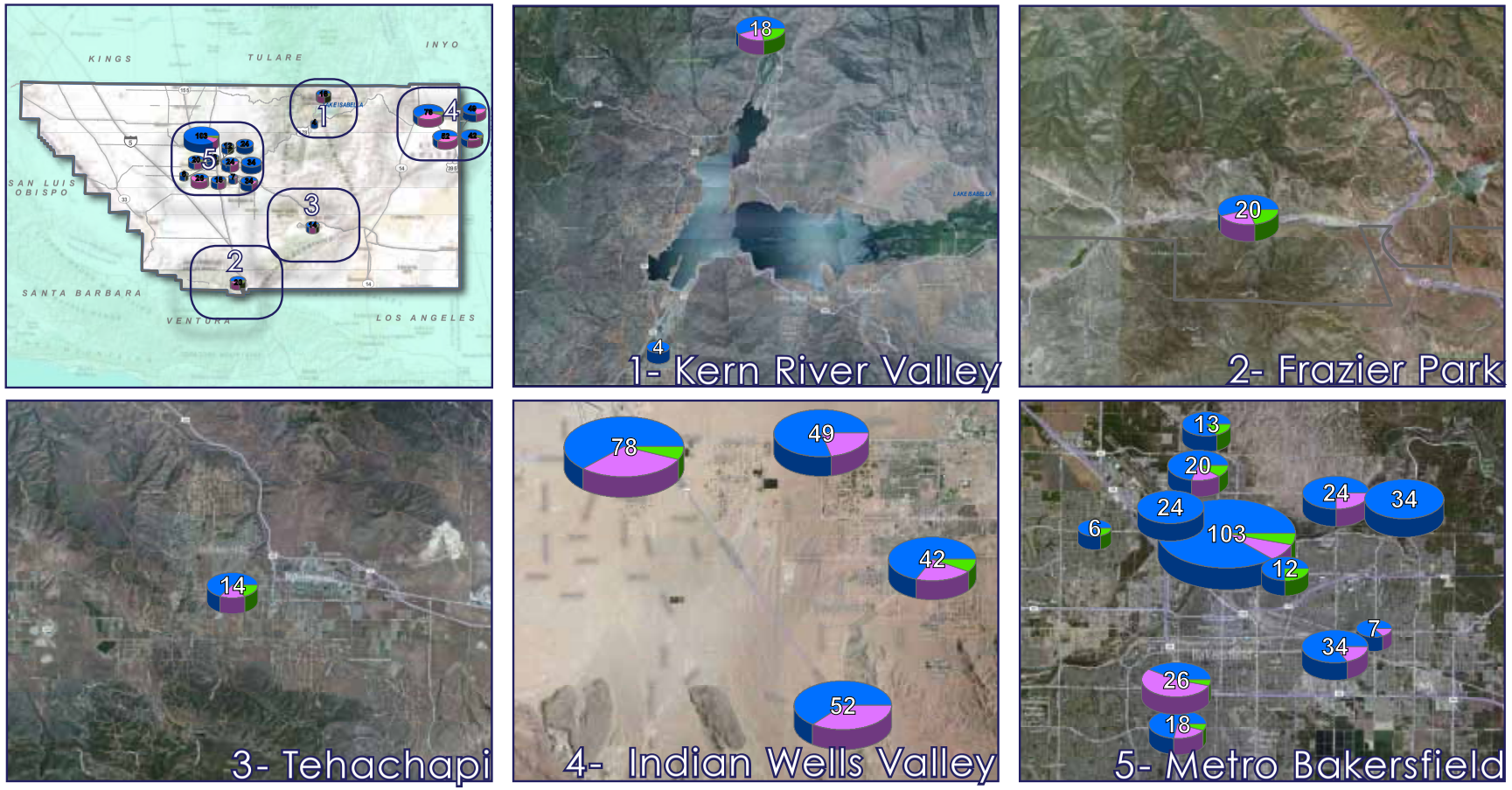


Figure 3-19: Bicycle Counts by Location Sub-Areas



A total of 253 bicyclists were observed during the count period on Wednesday, November 16, 2011 (Lake Isabella weekday counts were collected on Thursday November 17, 2011). **Table 3-7** shows the distribution of counts among the different count stations.

67 percent of the total cyclists were observed not wearing helmets and 24 percent riding their bikes on the sidewalks. Approximately 28 percent of bicyclists were observed riding on the wrong side of the street.

A total of 345 bicyclists were observed during the count period on Saturday, November 19, 2011. The highest total weekend bicycle ridership was observed in Indian Wells Valley as shown in **Table 3-8**.

The percentage of bicyclists not wearing helmets, riding on sidewalks, or riding on the wrong side of the street was significantly lower on weekends than on weekdays. The number of female bicyclists was higher on weekends, and the number of children observed riding bicycles was slightly lower on weekends. The higher overall weekend counts and concentration of weekend bicycling in Indian Wells Valley suggests that there are more recreational bicyclists in Kern County than bicycle commuters.

On the following page, **Table 3-9** presents the weekday bicycle count data by intersection ranked by total numbers of counts by community, and **Table 3-10** presents the weekend bicycle count data by intersection in ranked by total numbers of counts by community.

Table 3-7: Weekday Bicycle Counts by Community

	Total Counts					Percentage of Total		
Community	No of Count Locations	Male	Female	Child	Total	No Helmet	Sidewalk	Wrong Side of Street
Metro Bakersfield	12	154	33	14	201	78%	29%	33%
Frazier Park	1	1	1	0	2	50%	0%	50%
Indian Wells Valley	4	27	13	0	40	10%	0%	3%
Kern River Valley	2	4	0	0	4	100%	0%	0%
Tehachapi	1	3	1	2	6	50%	33%	50%
TOTAL	20	189	48	16	253	67%	24%	28%

Table 3-8: Weekend Bicycle Counts by Community

	Total Counts					Percentage of Total		
Community	No of Count Locations	Male	Female	Child	Total	No Helmet	Sidewalk	Wrong Side of Street
Metro Bakersfield	12	126	8	3	137	25%	5%	7%
Frazier Park	1	1	0	0	1	100%	0	0
Indian Wells Valley	4	119	55	7	181	3%	1%	1%
Kern River Valley	2	10	4	4	18	0	28%	0
Tehachapi	1	6	2	0	8	0	0	0
TOTAL	20	262	69	12	345	17%	5%	5%

Table 3-9: Weekday Bicycle Counts

Location	Total Weekday Counts				
Community	Intersection	Men	Women	Child*	Total
Metro Bakersfield	Roberts Ln/Chester Ave	29	5	3	37
	Wible Rd/Belle Terrrace	11	14	1	26
	Oildale Dr/Norris Rd	24	0	0	24
	Mt Vernon Ave/California Ave	20	4	0	24
	McCray St/Day Ave	14	4	2	20
	South H St/Ming Ave	13	4	1	18
	Columbus St/Hawthorne Ave	9	0	3	12
	Oswell St/Niles St	6	1	0	7
	Fruitvale Ave/Olive Dr	5	0	1	6
Frazier Park	Frazier Mountain Park Rd/Monterey Trail	1	1	0	2
Indian Wells Valley	Inyokern Rd/Jacks Ranch Rd	12	4	0	16
	Inyokern Rd/Brown Rd	10	6	0	16
	China Lake Bl/College Heights	2	2	0	4
	China Lake Bl/Brown	3	1	0	4
Lake Isabella	Lake Isabella Blvd/Erskine Creek Rd	4	0	0	4
Tehachapi	Westwood Blvd/Golden Hills Blvd	3	1	2	6

Table 3-10: Weekend Bicycle Counts

Location	Total Weekday Counts				
Community	Intersection	Men	Women	Child*	Total
Metro Bakersfield	Roberts Ln/Chester Ave	63	2	1	66
	Fairfax /Alfred Harrell Hwy	34	0	0	34
	Gordons Ferry/China Grade	18	6	0	24
	Chester Ave/James Rd	11	0	2	13
Frazier Park	Frazier Mountain Park Rd/Monterey Trail	10	4	4	18
Indian Wells Valley	Inyokern Rd/Brown Rd	37	21	4	62
	China Lake Blvd/Brown Rd	29	19	0	48
	Inyokern Rd/Jacks Ranch Rd	27	6	0	33
	China Lake Bl/College Heights	26	9	3	38
Lake Isabella	Burlando Rd/Kern River Dr	10	4	4	18
Tehachapi	Westwood Blvd/Golden Hills Blvd	6	2	0	8

3.10 Collision Analysis

Safety is a major concern for both existing and potential bicyclists. For those who bicycle, safety is typically an ongoing concern. For those who do not bike, it is one of the most compelling reasons not to ride. Identifying bicycle collision sites can draw attention to safety concerns, particularly if multiple collisions occur at the same location.

For this analysis, collision data for unincorporated Kern County was obtained from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) database, which provides information based on the motor vehicle traffic collision reports received from local police and sheriff jurisdictions and from California Highway Patrol field offices. SWITRS processes all reported fatal, injury and non-injury collisions.

Table 3-11 presents the total number of reported motor vehicle-involved collisions with bicycles and pedestrians resulting in injuries or fatalities throughout the unincorporated areas of Kern County for the three-year period between 2007 and 2009.

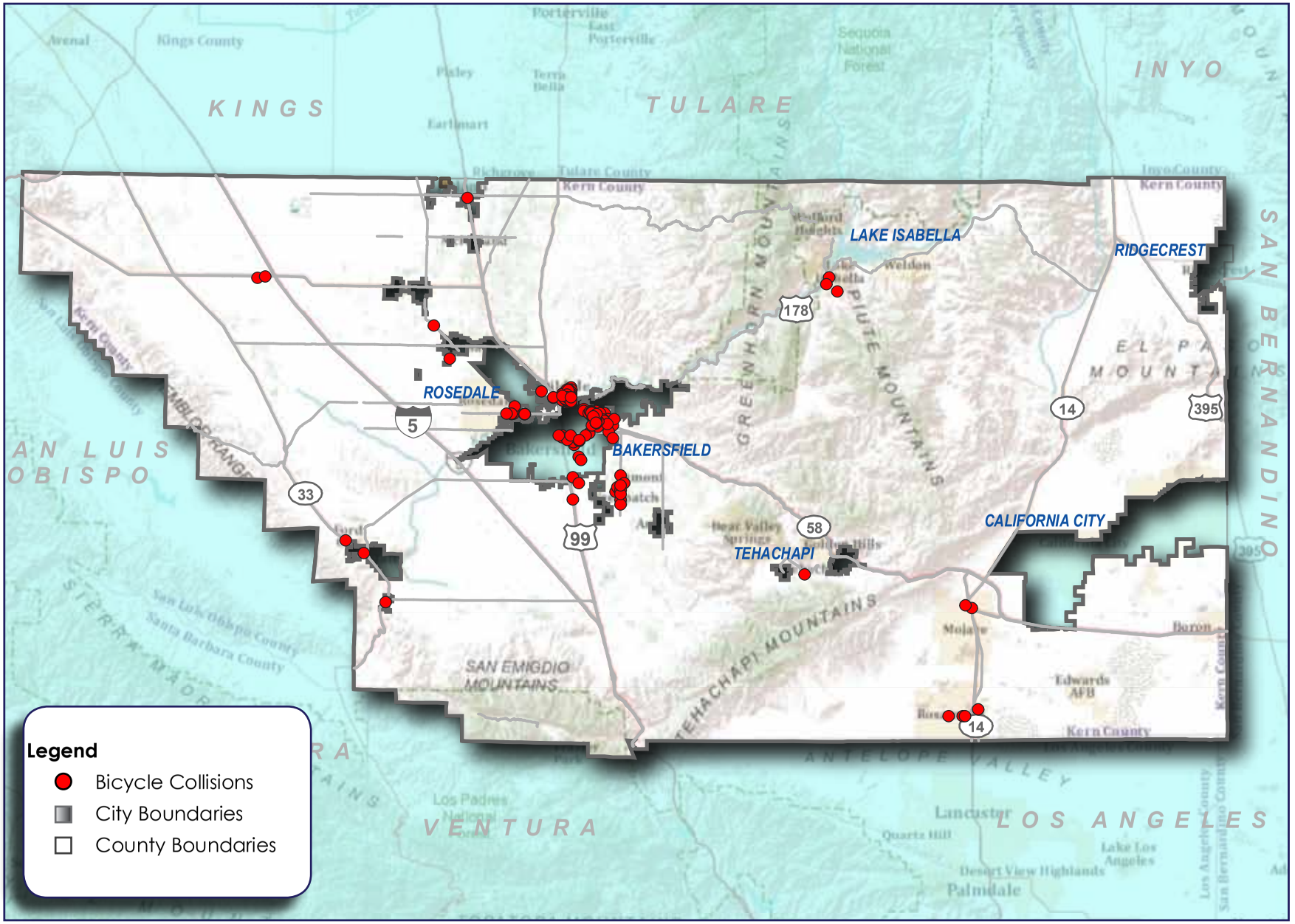
There were 357 reported collisions over the three-year period that involved a bicyclist or pedestrian and a motor vehicle. Of the 357 total collisions, 131 collisions (37 percent) involved bicyclists and 226 collisions (63 percent) involved pedestrians. Two bicycle collisions and 21 pedestrian collisions were fatal crashes. The number of bicycle and pedestrian crashes reported in the County is relatively consistent annually. **Figure 3-20** and **Figure 3-21** show the location of collisions involving bicyclists and pedestrians, respectively, in the county.

Table 3-11: Kern County Reported Collisions 2007–2009

Pedestrian Collisions		Bicycle Collisions		
Year	Fatal	Injury	Fatal	Injury
2007	6	66	0	47
2008	5	70	1	35
2009	10	69	1	47
TOTAL	21	205	2	129

7. Source: Statewide Integrated Traffic Records System (SWITRS)

Figure 3-20: Bicycle Collisions in Unincorporated Kern County, 2007-2009*



Note: The scale of the above figure, combined with the size of the collision icons, obscures small unincorporated "islands" surrounded by cities. Each collision in the figure occurred in unincorporated Kern County, as verified by SWITRS data.

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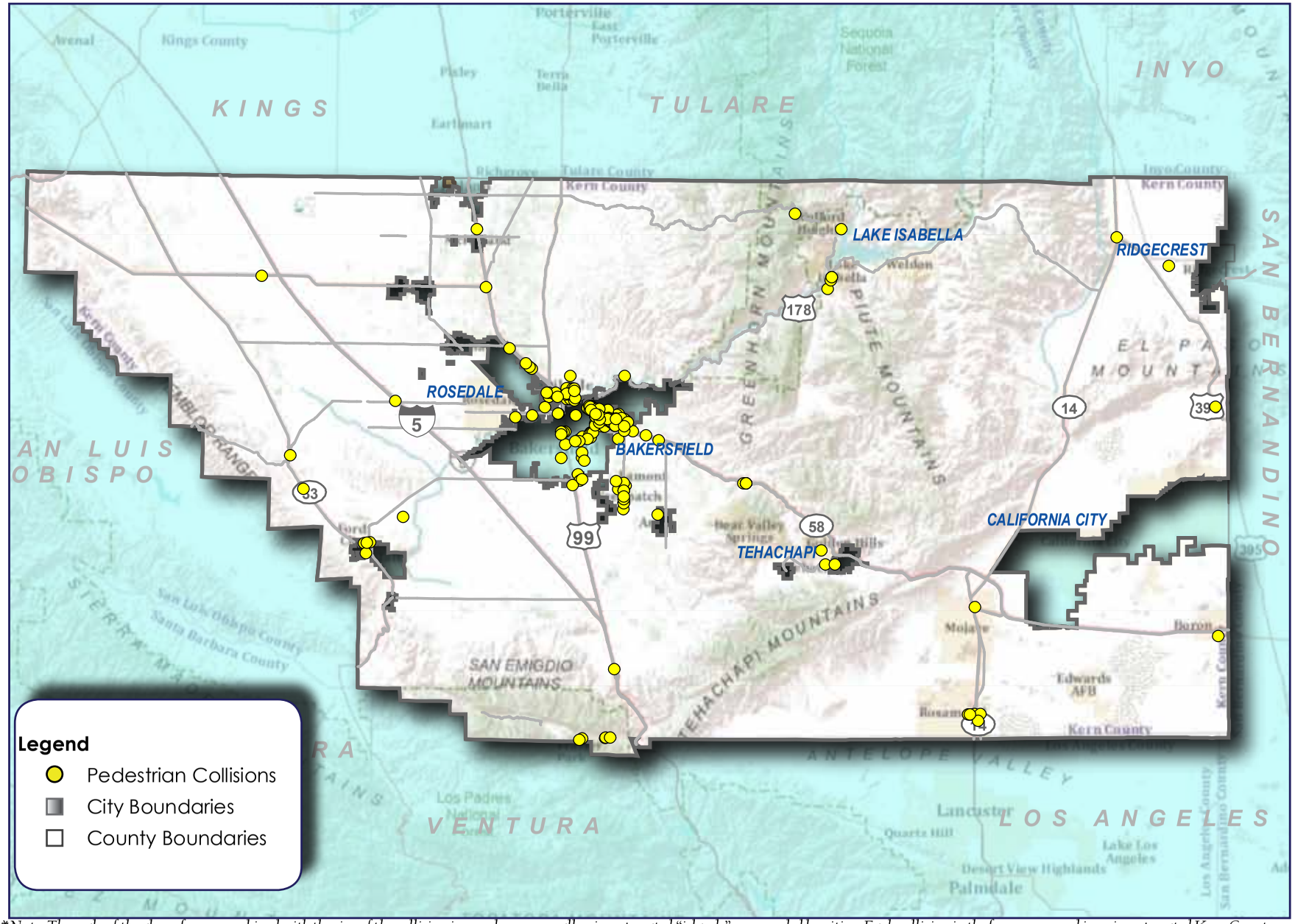
Figure 3-21: Pedestrian Collisions in Unincorporated Kern County, 2007-2009*



*Note: The scale of the above figure, combined with the size of the collision icons, obscures small unincorporated "islands" surrounded by cities. Each collision in the figure occurred in unincorporated Kern County, as verified by SWITRS data.

3.10.1 Collisions by Location

The majority of bicycle- and pedestrian-involved crashes in unincorporated Kern County occurred in the areas in and around Bakersfield. As seen in **Table 3-12**, Chester Avenue, Mount Vernon Avenue, Airport Drive, and SR-58 were the roadway segments with the greatest number of bicycle collisions. These numbers should not be confused with collision rates, which describe collisions as they relate to the population of an area.

3.10.2 Collisions by Primary Collision Type

Knowing the type of collision provides information about the position of the bicyclists and the motor vehicle at the time of the collision. This information can be helpful in determining what type of facilities will be most appropriate for improving the safety of the bicycle network in the County. **Figure 3-22** indicates that the most common type of collision between a motor vehicle and a bicyclist in the County is the broadside collision, which typically occurs during turning movements, such as vehicle right turns or cyclist turning left at an intersection. This type of vehicle-bicycle collision can be reduced by providing intersection treatments that alert motorists of the presence of bicyclists and that help bicyclists with proper intersection positioning. Many of the streets in Kern County are high-speed rural roads that lack paved shoulders, which may contribute to collisions with bicyclists.

3.10.3 Collisions by Violation Type

The available data also includes information about the circumstances of the reported crashes. **Figure 3-23** shows the number of crashes for each category of primary contributing factor to the collision. A total of 28 crashes were the result of driving under the influence of alcohol or drugs. The pedestrian was at fault in almost 50 percent of the total pedestrian crashes (108 out of 243).

Identification of the most common violations in bicycle-related collisions can inform the County of possible engineering or education needs. A specific re-occurring violation can be the result of unclear traffic controls, or roadways not designed for bicycle use. It can also be the result of bicyclists not being aware of or complying with the "rules of the road," or not feeling comfortable riding with traffic.

The most common contributing factor, other than pedestrian violations, with more that fifty total occurrences, is riding on the wrong side of the road. The second most common contributing factor is one party driving at an unsafe speed. This analysis of violations informs the Plan's recommendations. These contributing factors suggest the need for bicycle and motorist education and increased enforcement of traffic speeds.

Table 3-12: Roadways with Higher Numbers of Bicycle/Pedestrian Collisions

Primary Road	Limits	Road Type	Bicycle Collisions	Pedestrian Collisions
Chester Avenue	b/w Granite Rd & Oildale Drive	Arterial	13	5
Mount Vernon Avenue	b/w East California Ave & Route 178	Arterial	7	9
Airport Drive	b/w Oildale Dr & Roberts Ln	Arterial	7	1
SR-58	b/w Route 223 & I-5	Highway	7	7
SR-184	b/w Niles St & Bear Mtn Blvd	Highway	5	13
South Union Avenue	b/w Curnow Rd & SR-58	Arterial	5	4
Bernard St	b/w Mt Vernon & Baker St	Arterial	4	4
Haley Street	b/w Bernard St & Grace St	Collector	4	2
Flower Street	b/w Miller St & Mt Vernon Ave	Collector	3	3
Niles Street	b/w Haley St & SR-184	Arterial	3	13
Norris Road	b/w Mignonette St & North Chester Ave	Arterial	3	5
Lake Isabella	b/w Kernville Rd & Erskine Creek Rd	Arterial	2	4
Edison Hwy	b/w Fairfax & Walter Ave	Highway	0	6
SR-99	b/w Peterson Rd & Olive Dr	Highway	0	8
TOTAL	-	-	63	84

Source: Statewide Integrated Traffic Records System (SWITRS)

Figure 3-22: Collisions by Collision Type

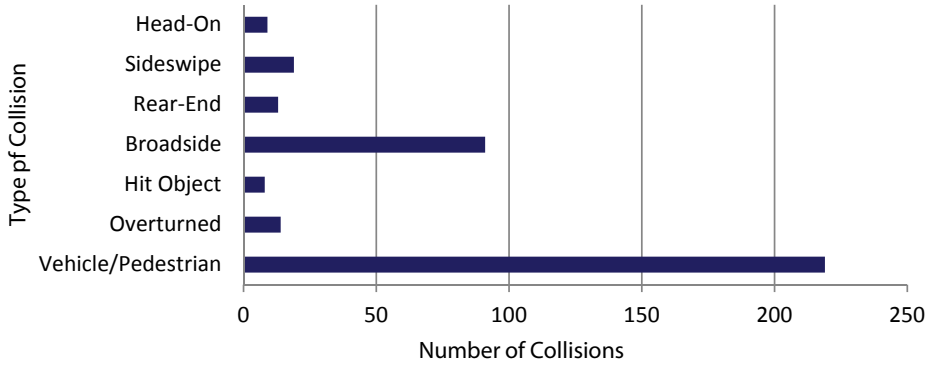
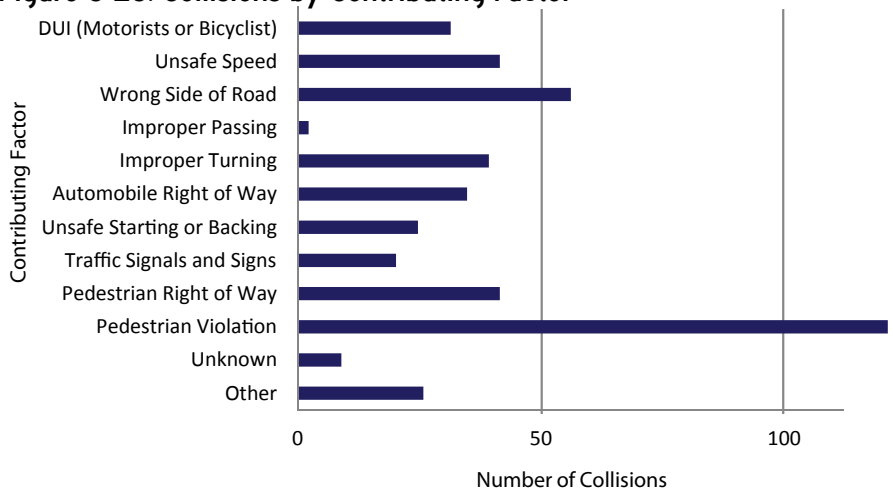


Figure 3-23: Collisions by Contributing Factor



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4. Needs Analysis

The County of Kern's bicycling needs are diverse and depend on one's level of experience, confidence, age, trip type, and many other factors. Estimates of current bicycle ridership provide an indication of current network usage and establish a baseline against which to measure progress. This section presents an estimate of current and potential bicycling demand in the County based on public outreach, bicycle mode share, bicycle trip attractors and generators, and population and land use characteristics.

4.1 Public Outreach

The Bicycle Master Plan development process included a public outreach campaign. Public input provides valuable local knowledge and reveals the needs of bicyclists, motorists, and those aspiring to become bicyclists, among others. The Kern Council of Governments (Kern COG) solicited public input through an online survey and three public workshops. The City of Tehachapi held an additional workshop as part of the concurrent Tehachapi Bicycle Master Plan, at which the public provided input on both land within the City of Tehachapi and unincorporated County land adjacent to the city.

4.1.1 Online Survey

The Kern County Bicycle Master Plan and Complete Streets Recommendations online survey was open from October 2011 through January 2012. The survey was advertised through various outreach methods, was available at public workshops (discussed below), and was posted on the project website. A total of 433 responses were received. General question results are discussed below and facility-specific question results are discussed in section 4.2.

Respondent Characteristics

Of the 433 survey respondents, 67.5 percent were males and 32.5 percent of respondents were females. As shown in **Figure 4-1**, the highest percentage of respondents were over the age of 55 and a relatively low percentage of respondents were below the age of 25.

Table 4-1 shows the distribution of where respondents live in Kern County. Over half of respondents live in Bakersfield and almost one-quarter of respondents live in the Indian Wells Valley. Bakersfield is the most populated community; however, respondents from less populated communities were also well represented.

Table 4-1: Distribution of Survey Respondent Locations

Respondent Location	Percent	% of County Population
Bakersfield	52.7%	40%
California City Area	2.3%	2%
Indian Wells Valley	22.6%	3%
Lake Isabella Area	8.3%	0.6%
Taft	0.2%	1%
Tehachapi	10.2%	2%
Shafter	0.2%	2%
Outside Kern County/No Response	3.5%	N/A

Figure 4-1: Age of Survey Respondents

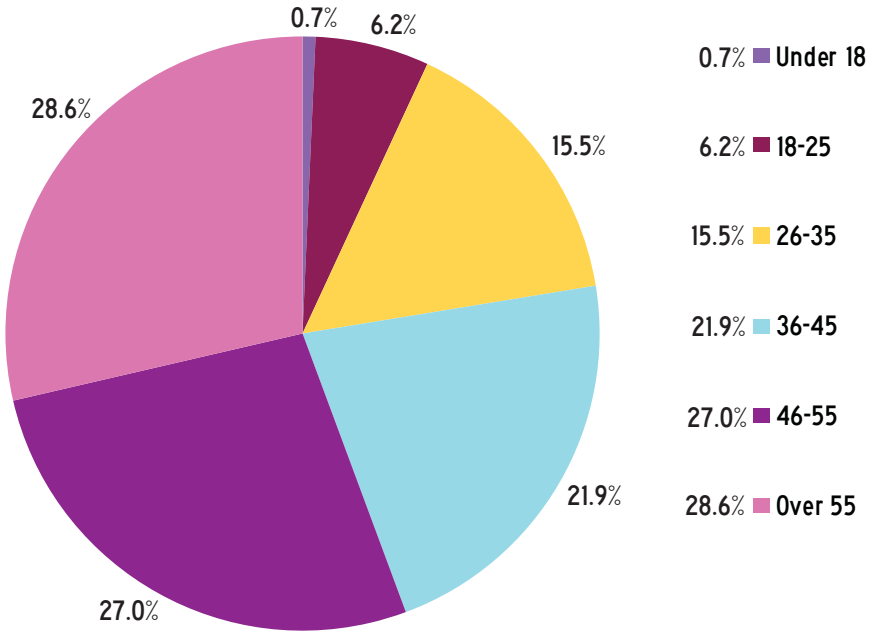


Figure 4-2: Distance Respondents Live from School or Job

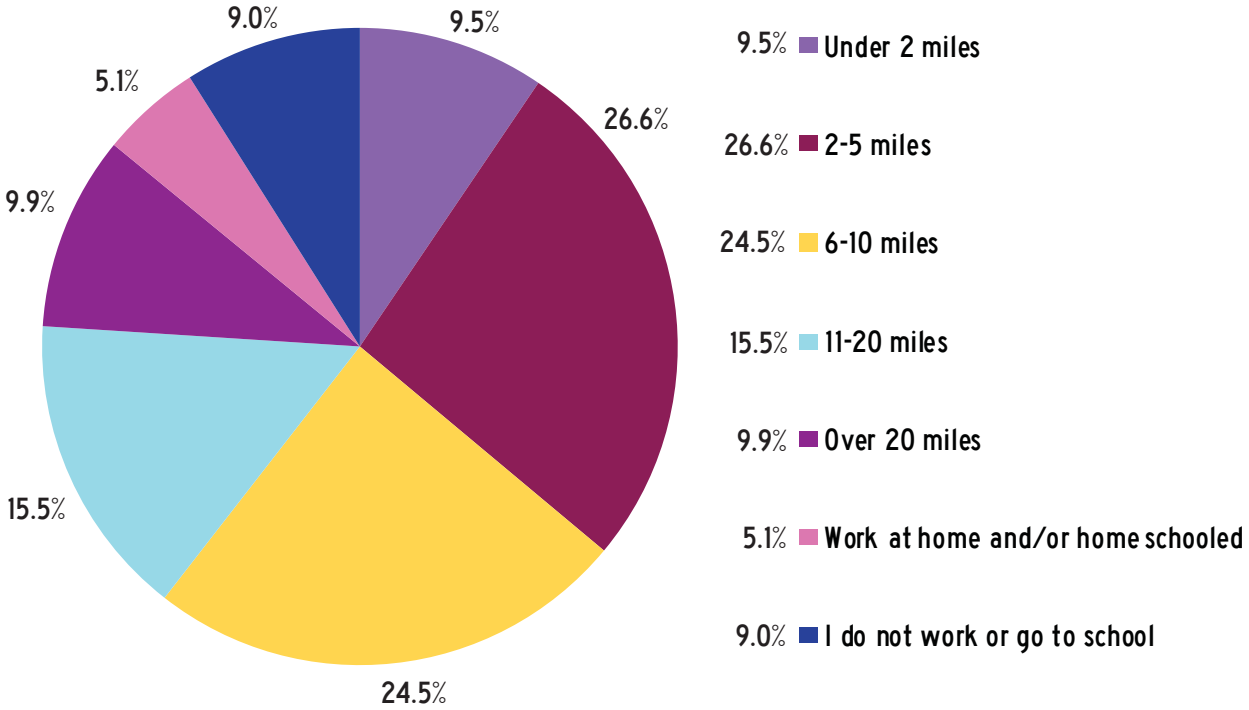


Figure 4-3: Respondent's Primary Commute Mode

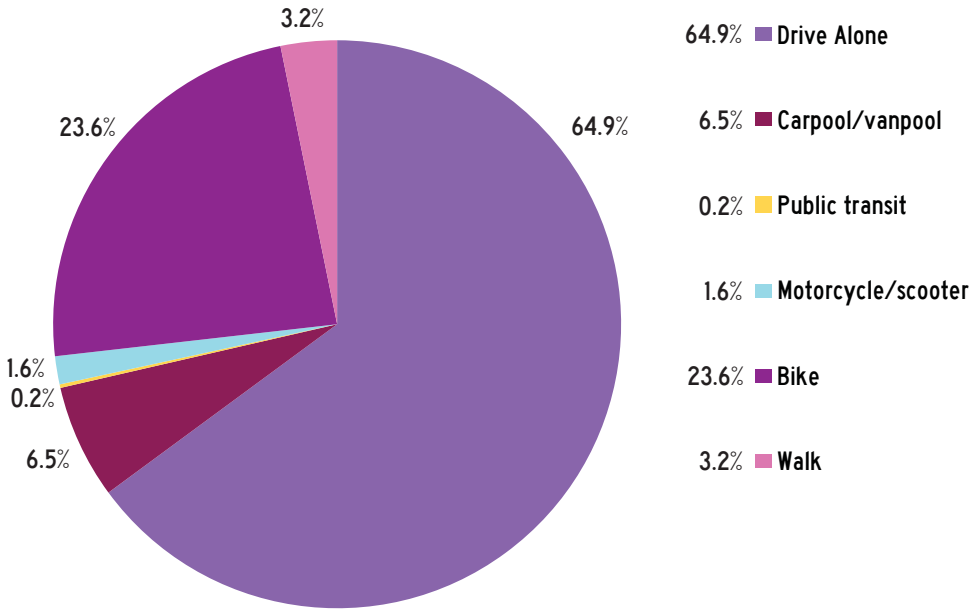
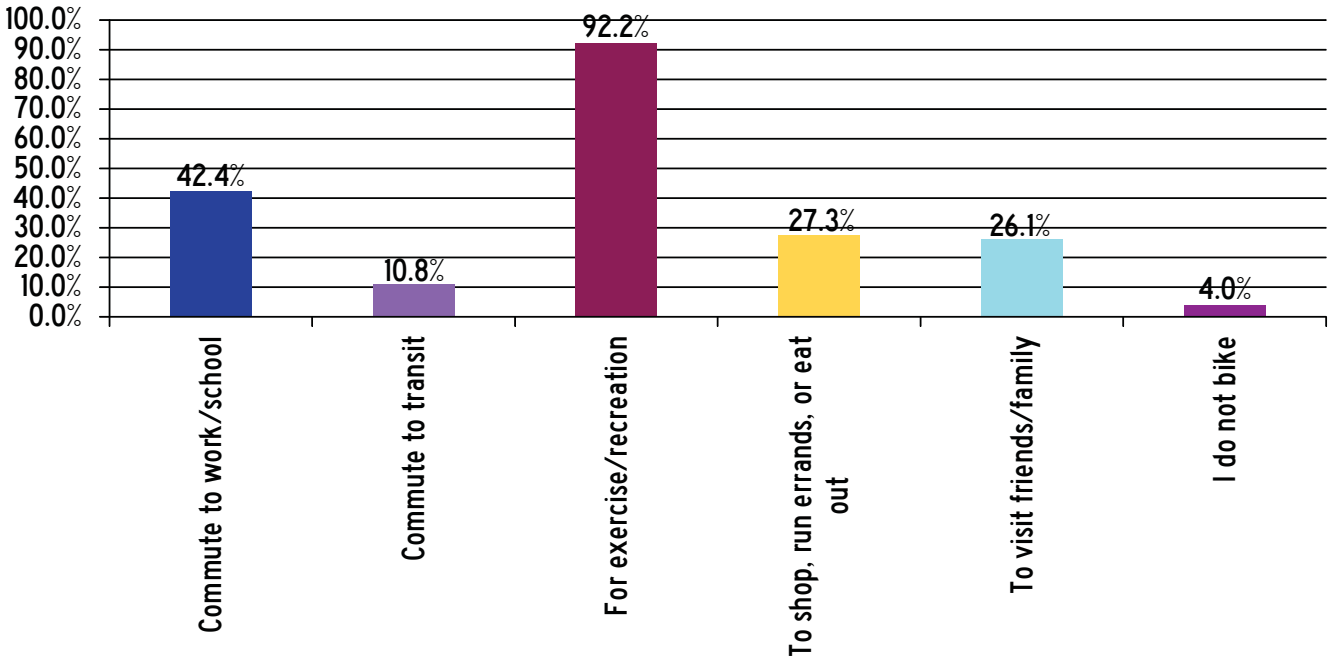


Figure 4-4: Respondent's Reasons for Bicycling



As shown in **Figure 4-2**, approximately 60 percent of respondents live within 10 miles of their job or school, and over half of which live within five miles. This presents a tremendous opportunity for increasing bicycle commute mode share, as a five mile bike ride takes less than half and hour. **Figure 4-3** reveals that the majority of respondents currently commute to work by driving alone. Approximately 25 percent of respondents commute by bicycle. This percent shows how interested the participants are in cycling, considering the County's unincorporated commute mode share according to the American Community Survey 5 year (2005-2009) estimate is 0.3 percent[8].

The majority of respondents reported that, on average, their round-trip bicycle trips are over 20 miles. This lengthy trip distance suggests there is a high incidence of recreational trips in Kern County. Over 75 percent of respondents ride at least one day per week and 24 percent of respondents ride five or more days per week.

Figure 4-4 shows respondents' reasons for bicycling. Almost all respondents noted that they ride for recreational purposes and almost half of respondents said they ride for commuting. Though most respondents primarily drive alone to commute to work/school, the data suggest that respondents sometimes commute by bicycle, though less frequently than by private automobile.

Bicycling Preferences

The survey asked respondents to rank infrastructure and programmatic improvements that affect their decision to ride a bicycle more often. **Figure 4-5**

shows the infrastructure improvements that would increase the likelihood that Kern County residents would bicycle more frequently. The most important factors in increasing respondents' bicycling frequency are having more/better on-street and off-street bicycle facilities. **Figure 4-6** displays the programmatic improvements that would affect respondents' decision to bicycle. The most important programs include commuter incentive programs, public awareness campaigns, and Safe Routes to School programs.

4.1.2 Public Workshops

As previously mentioned, Kern COG received public input regarding the plan at four workshops. **Table 4-2** shows the location, date, time, and number of attendees at each workshop.

The workshop format was open house style and included a presentation to provide an overview of the project. Workshop attendees visited a collection of boards asking them to vote with "workshop currency dots" on bicycle facilities, bicycle support

Table 4-2: Public Workshop Details

Workshop Location	Date	Time	Attendance
Bakersfield	Wednesday January 11, 2012	6 pm – 8 pm	24
Kernville	Thursday January 12, 2012	2 pm – 4 pm	22
Ridgecrest	Tuesday January 17, 2012	6 pm – 8 pm	30
Tehachapi	Wednesday January 18, 2012	6 pm – 8 pm	30

8. *Combined commute mode share in Kern County including Workers 16+ years, K-12 and College students*

Figure 4-5: Ranked Improvements Affecting the Decision to Bike

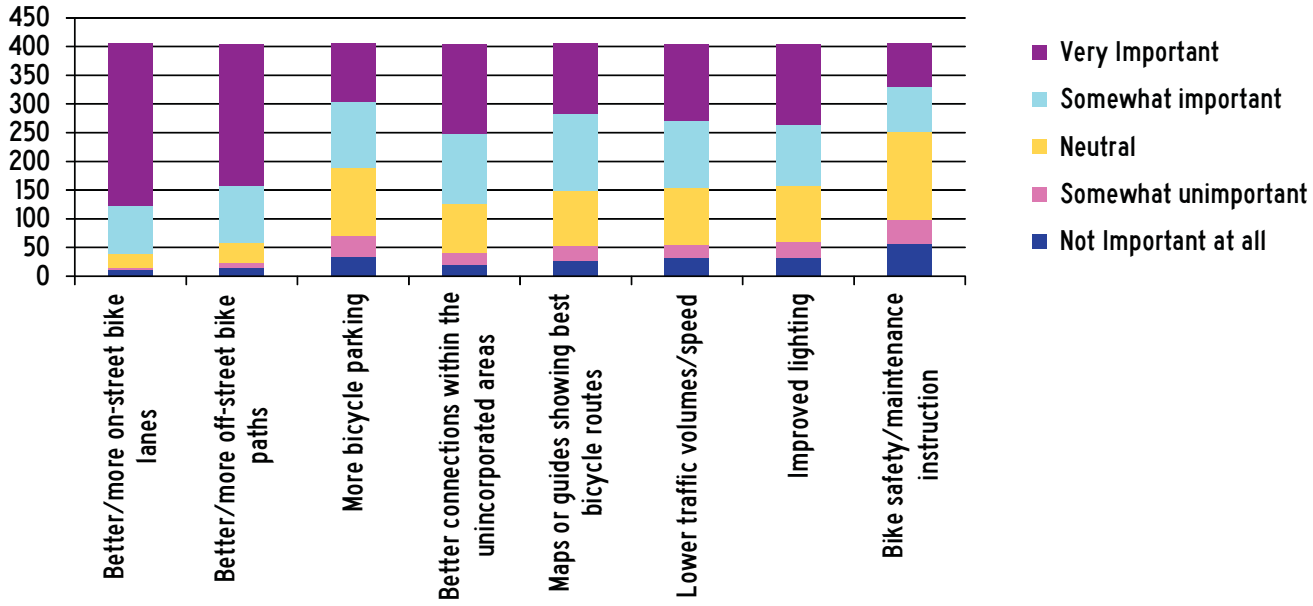
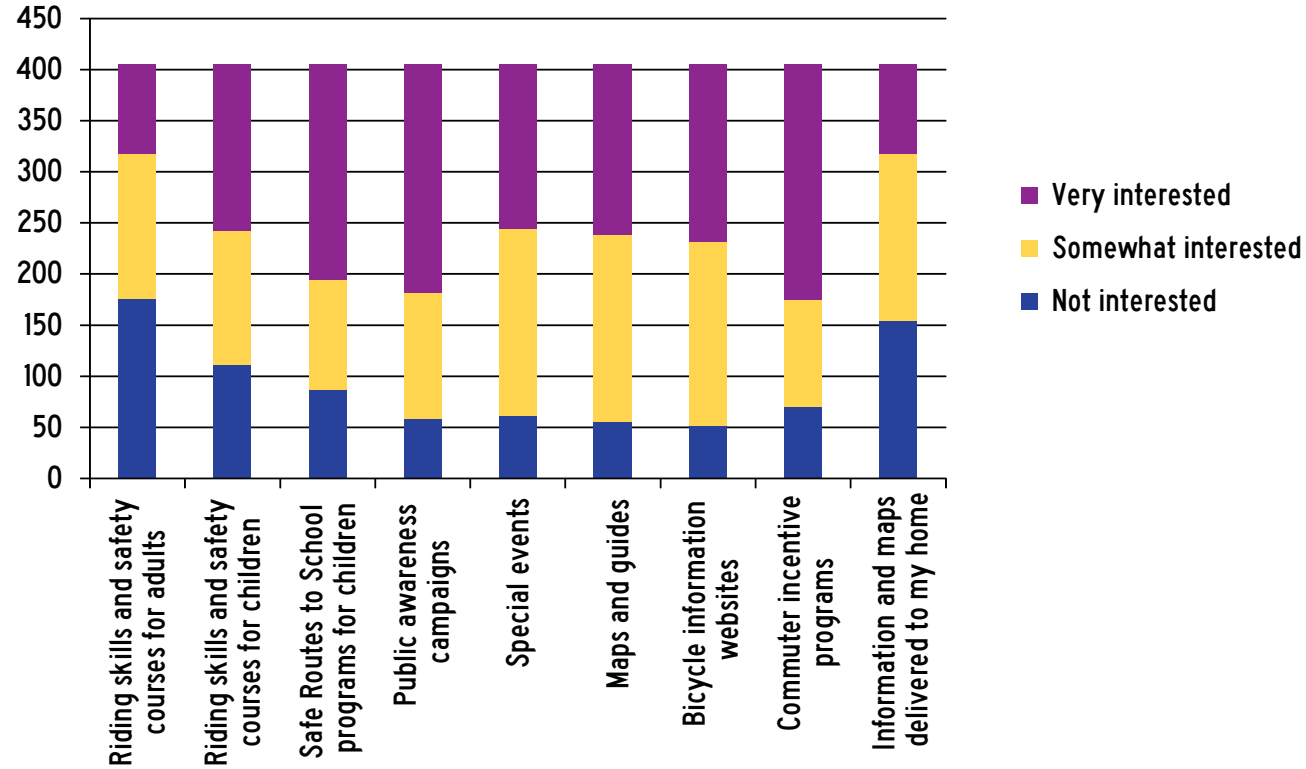


Figure 4-6: Respondent Ranked Interest in Bicycle Programs



facilities, signage, programs, and other information they would like to see in the plan. Attendees could also provide input on comment cards, draw on large maps, and complete the online survey, as discussed above. A summary of public input received from the workshops is discussed in the following section

4.2 Community Identified Needs

Based on the public participation and comments received from communities in Kern County, this section presents identified bicycle facilities and support facilities to improve the bicycle transportation network throughout the County.

4.2.1 Bikeway Facilities

The community wishes to see the extension of the existing network of bike trails, especially the Kern River Parkway path. There is also considerable community interest to see additional long distance bike routes connecting the incorporated cities of the county, which will primarily offer recreational opportunities for avid cyclists. In general, the community would like to see connections to Lake Isabella, the Kern River Parkway, city centers, major airports, and college campuses.

Figure 4-7 displays the most popular suggestions for future bikeway facilities based on the survey. The size of the font reflects the number of times the respondents of the survey mentioned each roadway facility. The most popular roadways for future on-street bikeways are:

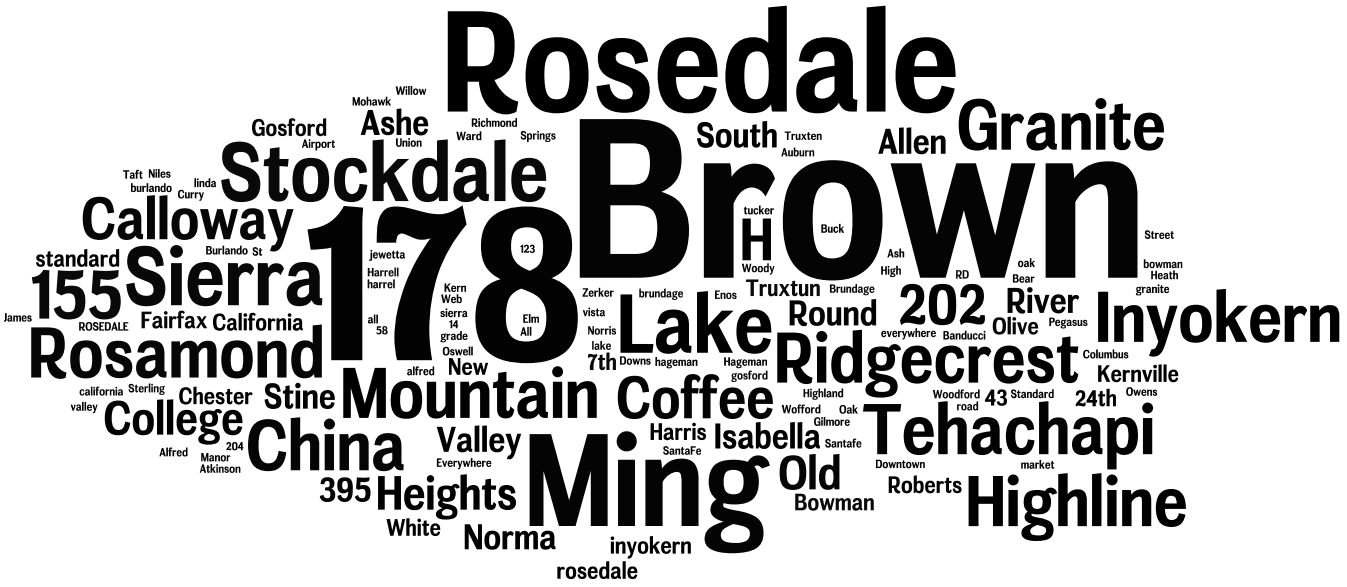
- Inyokern Road (SR 178), in the Indian Wells Valley
- Brown Road in the Indian Wells Valley
- Rosedale Highway in Metropolitan Bakersfield
- Ming Avenue in City of Bakersfield
- Sierra Way in Kernville, around Lake Isabella

4.2.2 Popular Destinations

Residents of Kern County expressed interest in having more bikeway routes to the following popular destinations in the County:

- The primary recreational attraction in the County is the Kern River Parkway, a native riparian area extending 30 miles through Bakersfield along the Kern River. It extends east to west from the mouth of the Kern Canyon to Enos Lane. One of the most used facilities is the Kern River Parkway Trail, a Class I Multiuse trail along the Kern River.

Figure 4-7: Common Suggestions for Future Bicycle Facilities



- Lake Isabella is one of the larger reservoirs in California and it is located in the heart of the Kern River Valley at the southern end of the Sierra Nevada Mountains. Lake Isabella is a popular destination for local and touring cyclists. The Adventure Cycling Magazine includes Lake Isabella as a landmark and overnight recommendation in a number of their suggested west coast routes.
- Indian Wells Valley is an arid north-south basin in east-central California. Ridgecrest is the only incorporated city in the valley and provides major support to the mission of the adjacent China Lake Naval Base. California State Routes 14 and 178 and US Highway 395 are the main transportation corridors through the valley. These three corridors, along with Brown Road, comprise a popular recreational route for cyclists called the Inyokern Loop. This loop is an important priority for the Indian Wells Valley cycling community.

4.2.3 End-of-Trip Facilities

Appropriately-sited, high quality bicycle parking is a necessary addition to a bicycle network since it provides a place for bicyclists to park their bicycles once they have arrived at their destinations. Bicyclists' needs for bicycle storage range from a simple and conveniently located bicycle rack to storage in a bicycle locker that affords weather, theft, and vandalism protection, gear storage space, and 24-hour access. For cyclists who dress more formally, travel longer distances, or bicycle during wet or hot weather, the ability to shower and change clothing can be just as important as bike storage.

Kern County generally lacks bike parking facilities. The county does not have a bike parking installation program and does not maintain an inventory of bike parking located within public right-of-way or at public facilities such as civic buildings or public parks.

Despite the lack of much available parking, section 19.80.020 of the Kern County Code of Zoning Ordinances includes provisions for minimum bicycle parking requirements in recreation, entertainment and tourist facilities, as well as in multifamily development.

Overall, workshop attendees voted that they preferred short-term bicycle parking over long-term bicycling parking. Kernville and Ridgecrest attendees prefer sidewalk bicycle racks, while Tehachapi attendees voted for curb extension bicycle racks and Bakersfield attendees voted for on-street bicycle corrals. Bakersfield attendees also indicated that they would be interested in having a BikeStation, a 24 hour secure indoor bicycle parking facility with supporting amenities, and bicycle rooms/compounds, while Tehachapi attendees indicated that they would like to have bicycle lockers.

In general, workshop attendees indicated that they would like to see more secure bicycle parking at the following locations:

- Government offices
- Trailheads
- Downtowns
- Park and ride lots

Specific locations that would benefit from bicycle parking in Kern County are presented in Chapter 5.

4.2.4 Signage

Bikeway signage identifies a bike route, lane, or path, as well as provides regulation, warning, and wayfinding information. Signage is important for numerous reasons, including identification of bikeway routes, increasing bicyclist visibility, and promoting bicyclist presence. The California Manual on Uniform Traffic Control Devices (CA MUTCD) and the California Highway Design Manual outline the requirements for bikeway signage, which are included in the **Bicycle Facilities Design Guidelines Appendices** of this report.

Currently, Kern County has standard bike route signs, share the road signs, and bike lane signs in various locations. Workshop attendees identified the need for bikeway signage at the following locations:

- Bike route signs around Lake Isabella
- "Share the Road" signage on SR 155 and 178, and up Sierra Mountain (99 to Kern River)
- "Share the Road" signs from Bodfish Post Office to Delonega.
- Along roads with switchbacks (e.g. Canyon roads)

4.2.5 Bicycle Programs

Bicycle programs are an important component of a bicycle transportation system. Bicycle education can increase awareness of bicycling as a viable mode of transportation, improve bicyclist and motorist observance of traffic laws, and improve bicyclist and motorist safety. Support programs such as bikeway management and maintenance and encouragement programs further improve safety and convenience for bicyclists.

Existing programs in Kern County include the Kern Commuter Connection program run by Kern COG, which aims to reduce traffic congestion during peak times, as well as reduce greenhouse gas emissions and other adverse environmental effects that result from every day commuting trips. Also, the bicycle advocacy group Bike Bakersfield is one of the main information sources about bicycling in the County.

The residents of Kern County expressed interest in seeing an expansion in program coverage offered throughout the county, including, but not limited to, the following suggestions:

- Bike Sharing in the Metropolitan Bakersfield area
- Cycling education for youth
- Valet parking at events and farmers markets
- Bike Share at airport locations

Recommendations for bicycle related programs are presented in sections to follow.

4.2.6 Maintenance

Routine maintenance of bikeway facilities is a critical and often overlooked element of bikeway planning. Maintenance includes street sweeping of bike lanes and shoulders, repairing and replacing bicycle lane striping, and replacing missing or damaged signage. This plan recommends the following maintenance related actions to improve bicycling conditions:

- Regular street sweeping, including bicycle lanes, shoulders, and intersections
- Repair and improve the surface of roadways potholes and cracks along the shoulder of roadways that adversely affect bicyclists
- Inspect drainage grates during repaving or maintenance work to ensure the grate patterns are perpendicular to the road
- The County should establish a proactive maintenance program through a customer service line and/or website where residents can report maintenance needs for on-street bikeways and paths
- Relocate rumble strips to the edge, rather than the middle, of the shoulder.

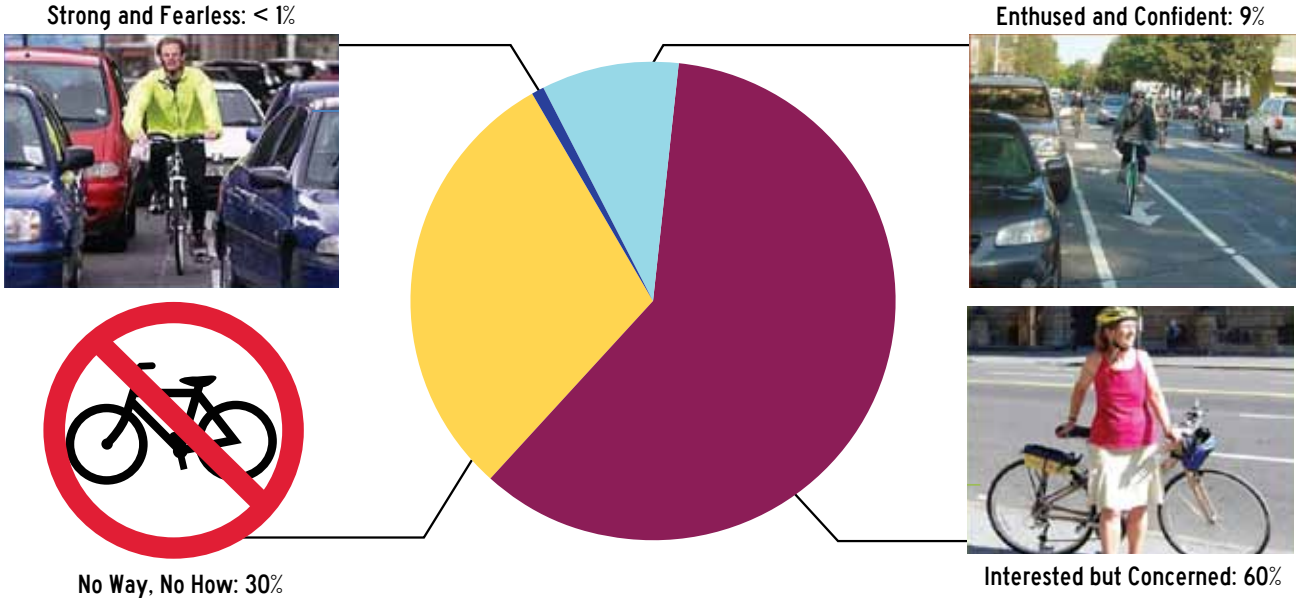
4.3 Bicyclist Types

It is important to consider bicyclists of all skill levels in creating a bicycle plan. The skill level of the bicyclist greatly influences expected speeds and behavior. There are several systems of bicyclist type classification currently in use within the bicycle planning and engineering professions. These classifications can be helpful in understanding the characteristics and infrastructure preferences of different bicyclists. However, these classifications may change in type or proportion over time as infrastructure and culture evolve, thus changing bicyclists' ability level and facility preference. An instructional course can rapidly change a less-confident bicyclist into one that can comfortably and safely share the roadway with vehicular traffic. Bicycle infrastructure should be planned and designed to accommodate as many user types as possible. Facilities separated from vehicular traffic or on low-volume, low-speed roads parallel to arterials should be considered to provide a comfortable experience for the greatest number of bicyclists.

Figure 4-8 shows a classification system that is currently in use in the Pacific Northwest and is also under consideration in the update to the 1999 AASTHO *Guide for the Development of Bicycle Facilities*. This classification system provides the following bicycle user types to address Americans' 'varying attitudes' towards bicycling.

As illustrated, less than one percent of Americans comprise a group of bicyclists who are '**Strong and Fearless**'. These bicyclists typically ride anywhere on any roadway regardless of roadway conditions, weather, or the availability of bicycle facilities. The strong and fearless bicyclists can ride faster

Figure 4-8: Bicyclist Type Classification



than other user types, prefer direct routes, and will typically choose roadway connections – even if shared with vehicles – over separate bicycle facilities such as bicycle paths. This category of bicyclists will be less affected by this Plan than the following groups.

Approximately nine percent of Americans fall under the category of '**Enthused and Confident**' bicyclists who are confident and mostly comfortable riding on all types of bicycle facilities, but will usually prefer low traffic streets or multi-use pathways when available. These bicyclists may deviate from a more direct route in favor of a preferred facility type. This group includes all kinds of bicyclists including commuters, recreationalists, racers, and utilitarian bicyclists. The Kern County Bicycle Master Plan and Complete Streets Recommendations will provide this group of bicyclists more bicycle facility options, which should create a more comfortable bicycling environment for them.

The remainder of the American population does not currently ride a bicycle regularly, in large part due to perceived safety risks from riding with traffic. Approximately 60 percent of the population can be categorized as '**Interested but Concerned'** and represents bicyclists who typically only ride a bicycle on low traffic streets or bicycle paths under favorable conditions and weather. These bicyclists may ride more regularly with encouragement, education, experience, and the availability of bicycle infrastructure. This Plan will affect the **'Interested but Concerned'** group the most as it will recommend the facilities and programs that should encourage them to ride or ride more often.

Approximately 30 percent of Americans are not bicyclists. They are referred to in the diagram as **'No Way, No How.'** Some people in this group may eventually consider bicycling and may progress to one of the user types above. A significant portion of these people will never ride a bicycle under any circumstances.

Table 4-3 displays the type of bicyclist that Kern County survey and workshop respondents identify with. The majority of workshop attendees and survey respondents identified themselves as 'Enthused and Confident.'[9] Bicycling workshops are likely to attract people who are already bicyclists, which explains the higher than average distribution of bicyclists in this category.

Table 4-3: Survey Respondent Distribution of Bicyclist Types

Bicyclist Type	Number	Percent
A confident bicyclist who is comfortable riding in most traffic situations, regardless of bicycle facilities.	165	38.6%
A bicyclist who is comfortable riding in some traffic situations, with appropriate bicycle facilities (like bicycle lanes, sharrows, etc).	140	32.8%
A bicyclist who prefers paths/ greenways and quiet, residential streets, away from major roadways.	98	23.0%
Not currently a bicyclist, but interested in taking up bicycling.	14	3.3%
I am not interested in bicycling.	10	2.3%

9 *The second and third rows of Table 4-3 are assumed to be 'Enthused and Confident' cyclists.*

5. Recommended Improvements

5.1 Bikeways

The bikeways recommended in this plan correspond to California Department of Transportation (Caltrans) standard designations, as illustrated in **Figure 5-1**.

- **Class I Bikeway:** Typically called a "bike path", a Class I Bikeway provides bicycle travel on a paved right-of-way completely separated from the street where vehicles travel.
- **Class II Bikeway:** Often referred to as a "bike lane", a Class II Bikeway provides a striped, signed, and stenciled lane for one-way travel on a street or highway.
- **Class III Bikeway:** Generally referred to as a "bike route"' a Class III Bikeway provides for shared use with bicycle or motor vehicle traffic and uses only signage identification. In addition, this Plan includes bikeway recommendations along state-maintained roadways, also know as "highway shoulder bike route". These state routes are under Caltrans jurisdiction. The County will have to coordinate with Caltrans on the development of these facilities.

5.1.1 Neighborhood Green Streets

In addition to the three bikeway types defined by Caltrans, this plan includes recommendations for Neighborhood Green Streets. These facility types are local roads or residential streets enhanced with signage, traffic calming, and other treatments to prioritize bicycle travel. Neighborhood green streets are typically found on low-traffic / low volume streets that can accommodate bicyclists and motorists in the same travel lane. Neighborhood green streets are not defined as a specific bikeway type by Caltrans; however, the basic design features of neighborhood green streets comply with Caltrans Standards. **Figure 5-2** shows a typical neighborhood green street treatment.

Table 5-1 presents a summary of the proposed bikeway facilities, which are shown on **Figure 5-3**. **Table 5-2** provides the detailed proposed network for Kern County.

Table 5-1: Proposed Bikeway Summary

Facility Type	Length (Miles)
Class I Bike Paths	41
Class II Bike Lanes	291
Class III Bike Routes	99
Neighborhood Green Streets	16
Class III Bike Routes on State Routes	188
Canal Bike Paths - (Requires coordination with other agencies)	116
Total	751

Figures 5-4 through **5-11** show the proposed bicycle networks for each community in Kern County, as well as the existing and planned bikeways throughout the County. **Chapter 6** lists the extents of the entire network of proposed facilities along with their project prioritization scores.

5.1.2 Bikeways Outside of County Jurisdiction

There are numerous opportunities for the development of multi-use paths along existing irrigation canals in Metropolitan Bakersfield. The right-of-way for these facilities is privately owned and development of these facilities would require coordination with respective property owners and any water agencies with jurisdiction.

Similarly, there is interest in the Kern River Valley community for the development of a Class I bike path around Lake Isabella. The development of this facility would require multijurisdictional coordination with Federal agencies such as the USDA Forest Service, Bureau of Land Management, and State agencies such as Caltrans and the Department of Fish and Game, and County agencies such as Kern County Planning and the Parks and

Table 5-2: Proposed Bikeways

Location	Limit 1	Limit 2	Community	Class	Miles
E Bear Mountain Blvd	S Comanche Drive	Weedpatch Hwy	Arvin	2	4.1
Main Street	Panama Road	Di Giorgio Road	Arvin	2	1.0
Lake Ming Loop	Kern River Parkway	Campground Road	Bakersfield	1	2.6
Airport Drive	Manor Street	W China Grade Loop	Bakersfield	2	1.0
Airport Drive	China Grade Loop	Roberts Lane	Bakersfield	2	1.3
Beech Ave	E Los Angeles	Enos Lane	Bakersfield	2	2.3
Brae Burn Drive	Country Club Drive	College Ave	Bakersfield	2	0.6
Brimhall Road	Enos Lane	Superior Road	Bakersfield	2	1.0
Brimhall Road	Wegis Ave	Rudd Ave	Bakersfield	2	1.0
Buena Vista Blvd	S Union Ave	S Comanche Drive	Bakersfield	2	9.1
Comanche Drive	E Panama Lane	Varsity Ave	Bakersfield	2	5.5
Day Ave	N Chester Ave	Manor Street	Bakersfield	2	0.5
Decatur Street	Airport Drive	Sequoia Drive	Bakersfield	2	0.3
Enos Lane	Beech Ave	Panama Lane	Bakersfield	2	11.3
Flower Street	Owens Street	Mt Vernon Ave	Bakersfield	2	1.0
Hageman Road	Wegis Ave	Nord Road	Bakersfield	2	0.5
Kratzmeyer Road	Santa Fe Way	Enos Lane	Bakersfield	2	4.5
McCray Street	Merle Haggard Drive	China Grade Loop	Bakersfield	2	1.0
Mere Haggard Drive	South Granite Road	N Chester Ave	Bakersfield	2	1.0
Muller Road	S Owell Street	Weedpatch Hwy	Bakersfield	2	2.0
Niles Street	Virginia Street	Morning Drive	Bakersfield	2	3.5
Nord Ave	Kratzmeyer Road	Stockdale Hwy	Bakersfield	2	4.5
Norris Road	Snow Road	Roberts Lane	Bakersfield	2	0.7
Old Farm Road	Palm Ave	Brimhall Road	Bakersfield	2	0.5
Old Farm Road	Good Place	Rosedale Hwy	Bakersfield	2	0.5
Old River Road	Taff Hwy	Shafter Road	Bakersfield	2	3.0
Palm Ave	Heath Road	Renfro Road	Bakersfield	2	1.0
Panama Road	Weedpatch Hwy	S Comanche Drive	Bakersfield	2	4.0
Patton Way	Snow Road	Hageman Road	Bakersfield	2	1.8
Pioneer Drive	Oswell Steet	Morning Drive	Bakersfield	2	2.0
River Blvd	Panorama Drive	Bernard Street	Bakersfield	2	1.3
Roberts Lane	Norris Road	Washington Ave	Bakersfield	2	0.5
Roberts Lane	Washington Ave	Standford Drive	Bakersfield	2	0.7
Rudd Ave	Palm Ave	Brimhall Road	Bakersfield	2	0.5
Santa Fe Way	Driver Road	Riverside Street	Bakersfield	2	3.6
Union Ave	Panama Road	Bear Mountain Blvd	Bakersfield	2	4.0
N Chester Ave	Existing Bike Route	Mere Haggard Drive	Bakersfield	3	0.3
Olive Drive	Victor Street	SR 99	Bakersfield	3	0.3
Rosedale Hwy	Enos Lane	Mohawk Street	Bakersfield	Caltrans Shoulder	10.9
Center Street	Oswell Street	Pesante Road	Bakersfield	NGS	0.8

Location	Limit 1	Limit 2	Community	Class	Miles
Center Street/Rosewood Avenue	Shalimar Drive	Monica Street	Bakersfield	NGS	1.8
Country Club Drive - Horace Mann Ave- Pentz Street	College Ave	Center Street	Bakersfield	NGS	0.8
Decatur Street	Sequoia Drive	Chester Ave	Bakersfield	NGS	0.8
Height Street	River Blvd	Haley Street	Bakersfield	NGS	0.5
Jeffrey Street	Union Ave	River Blvd	Bakersfield	NGS	0.2
Jeffrey Street	Loma Linda Drive	River Blvd	Bakersfield	NGS	0.7
Pesante Road	Cul-de-sac	Pioneer Drive	Bakersfield	NGS	1.0
Shalimar Drive	Niles Street	Pioneer Drive	Bakersfield	NGS	0.5
Valencia Drive	College Ave	Pioneer Drive	Bakersfield	NGS	1.0
Wilson Avenue - Castaic Ave	Roberts Lane	North Chester Avenue	Bakersfield	NGS	1.9
Woodrow Ave	Roberts Lane	N Chester Ave	Bakersfield	NGS	1.8
Arvin-Edison Canal	S Oswell Street	Marion Avenue	Bakersfield	Requires Coordination	1.5
Arvin-Edison Canal	Central Branch Canal	Mount Vernon Avenue	Bakersfield	Requires Coordination	1.3
Beardsley Canal	Fruitvale Avenue	Manor Street	Bakersfield	Requires Coordination	4.0
Buena Vista Rec Area Loop	Lake Buena Vista	Lake Buena Vista	Bakersfield	Requires Coordination	7.7
Calloway Canal	Coffee Road	Hwy 99	Bakersfield	Requires Coordination	3.8
Central Branch Canal	Ming Avenue	Union Avenue	Bakersfield	Requires Coordination	1.3
Central Branch Canal	E Pacheco Road	Buckley Avenue	Bakersfield	Requires Coordination	0.8
Central Branch Canal	E Panama Lane	Berkshire Road	Bakersfield	Requires Coordination	0.5
East Branch Canal	Belle Terrace	Casa Loma Drive	Bakersfield	Requires Coordination	0.7
East Side Canal	Kentucky Street	Fairfax Road	Bakersfield	Requires Coordination	2.7
East Side Canal	E Brundage Lane	Panama Road	Bakersfield	Requires Coordination	7.9
Enos Lane Path	Panama Lane	Buena Vista Rec Area Loop	Bakersfield	Requires Coordination	4.5
Lake Evans Loop	Lake Evans	Lake Evans	Bakersfield	Requires Coordination	2.7
Stine Canal	Stockdale Hwy	Belle Terrace	Bakersfield	Requires Coordination	0.5
Tupman Path	Enos Lane	Moose Street	Bakersfield	Requires Coordination	5.6
Knudsen Drive	Norris Road	Hageman Road	Bakersfiled	2	0.9
Landco Drive	Calloway Canal	Rosedale Highway	Bakersfiled	2	0.7
Palm Ave (Country Breeze & Slikker Drive)	Old Farm Road	Country Breeze Place	Bakersfiled	2	1.7
Pegasus Road	Merle Haggard Drive	Norris Road	Bakersfiled	2	1.8
Bear Valley Road	Cumberland Road	Hwy 202	Bear Valley Springs	Requires Coordination	6.8
Cumberland Road	Bear Valley Road	Bear Valley Road	Bear Valley Springs	Requires Coordination	3.6
Kern River Parkway	Western end of Path	Lake Buena Vista	County	1	2.9
Kiddyland Drive	River Crosing	Alfred Harrel Hwy	County	2	0.3
Rosamond Blvd	60th Street	Sierra Hwy	County	2	4.2
Sierra Hwy	Rosamond Blvd	LA County Line	County	2	3.0

Location	Limit 1	Limit 2	Community	Class	Miles
202 Hwy	Tehachapi Blvd	Bear Valley Road	County	Caltrans Shoulder	5.7
SR 14	SR 178	Mojave	County	Caltrans Shoulder	46.6
SR 178	SR 14	Sierra Way	County	Caltrans Shoulder	32.3
SR 178	Bakersfield City Limits	Kern River Valley	County	Caltrans Shoulder	26.4
Lake Woollomes Loop	Lake Woollomes	Lake Woollomes	Delano	1	5.3
Airport Avenue	Mast Avenue	Proposed Woollomes Loop	Delano	2	2.7
Mast Avenue	Grace Hwy	Airport Ave	Delano	2	1.0
Pond Road	Benner Ave	Stradley Ave	Delano	2	3.0
Stradley Ave	Hwy 155	Sherwood Ave	Delano	2	6.0
202 Hwy	Bear Valley Road	Woodford Tehachapi Road	Golden Hills/ Tehachapi	2	5.7
Bailey Road	Giraudo Road	Cummings Valley Road	Golden Hills/ Tehachapi	2	1.5
Banducci Road	202 Hwy	Highline Road	Golden Hills/ Tehachapi	2	0.2
Banducci Road	Comanche Point Rd	Pellisier Road	Golden Hills/ Tehachapi	2	2.5
Bear Valley Road	202 Hwy	Proposed	Golden Hills/ Tehachapi	2	1.5
Cummings Valley Road	Bailey Road	Bear Valley Road	Golden Hills/ Tehachapi	2	1.0
Cummings Valley Road	Bailey Road	202 Hwy	Golden Hills/ Tehachapi	2	0.4
Giraudo Road	Pellisier Road	Bailey Road	Golden Hills/ Tehachapi	2	0.5
Golden Hills Blvd	Santa Barbara Drive	Highline Road	Golden Hills/ Tehachapi	2	1.1
Highline Road	Tucker Road	Banducci Road	Golden Hills/ Tehachapi	2	3.1
Old Town Road	Mariposa Road	Tehachapi Road	Golden Hills/ Tehachapi	2	0.7
Pellisier Road	Banducci Road	Giraudo Road	Golden Hills/ Tehachapi	2	2.0
Valley Blvd	Tucker Rd	Woodford Tehachapi Road	Golden Hills/ Tehachapi	2	1.5
White Pine Drive	Tehachapi Road	Mariposa Road	Golden Hills/ Tehachapi	2	0.4
Wooford Tehachapi Road	Valley Blvd	Highline Road	Golden Hills/ Tehachapi	2	1.0
Stallion Springs Road/ Comanche Point Road	Banducci Road	Banducci Road	Golden Hills/ Tehachapi	Requires Coordination	3.1
Athel Ave*	US 395	Brown Road	Indian Wells Valley	3 Signage Only	2.6
Brown Road*	SR 14	US 395	Indian Wells Valley	3 Signage Only	20.0
Brown Road	US 395 Northern overpass	US 395 Southern overpass	Indian Wells Valley	3 Signage Only	0.3
SR 14	Athel Ave	SR 178	Indian Wells Valley	Caltrans Shoulder	5.9
SR 14	US 395	Athel Ave	Indian Wells Valley	Caltrans Shoulder	1.0
US 395	Brown Road	China Lake Blvd	Indian Wells Valley	Caltrans Shoulder	10.1

** Short-Term improvements include additional Class III Bike Route signage. Mid to long-term improvements include addition of paved shoulders and possible conversion to Class II Bike Lanes.*

Location	Limit 1	Limit 2	Community	Class	Miles
US 395	Brown Road	Inyo County Line	Indian Wells Valley	Caltrans Shoulder	10.4
Brown Road*	US 395	Ridgecrest Blvd	Indian Wells Valley	Paved Shoulders	8.2
Brown Road	Athel Ave	US 395	Indian Wells Valley	Paved Shoulders	7.8
Brown Road	US 395 Northern overpass	US 395 Southern overpass	Indian Wells Valley	Paved Shoulders	0.3
Inyokern Road (SR 178)*	Ridgecrest City Limits	SR 14	Indian Wells Valley	Requires Coordination	9.2
Broadway	Orchard Avenue	Plains Avenue	Inyokern	2	0.5
Kelso Valley Road	SR 178	Adams Drive	Kern River Valley	2	1.8
Lake Isabella Blvd	Nugget Ave	Erskine Creek Road	Kern River Valley	2	2.2
Kelso Valley Rd/Kelso Valley Creek Road	SR 178	Loops back to SR 178	Kern River Valley	3	9.7
SR 178	Kelsy Valley Creek Road	Kelso Valley Road	Kern River Valley	Caltrans Shoulder	1.2
Lake Isabella Loop	Loop		Kern River Valley	Requires Coordination	30.1
Kern River/Lake	Riverside Park	Wofford Heights Park	Kernville	1	4.3
Sierra Way	Valley View Drive	Cyrus Canyon Road	Kernville	3	2.2
Burlando Road	Rio Del Loma/Whiskey Flat Trailhead	Kernville Road	Kernville	NGS	2.1
Sirretta Street	Burlando Road	Existing Class II	Kernville	NGS	1.0
Burlando Road	Kernville	Wofford Heights	Kernville & Wofford Heights	1	3.0
Erskine Creek Road	Lake Isabella Blvd	Pasadena Lane	Lake Isabella	2	1.4
McCray Road	SR 178	Dogwood Road	Lake Isabella	2	0.4
Wofford Road	Burlando Road	Hwy 155	Lake Isabella	2	2.0
Hwy 155	Wofford Road	Lake Isabella Blvd	Lake Isabella	3	5.5
Sierra Way	Kernville Airport	SR 178	Lake Isabella	3	11.2
SR 178	Hwy 155	Sierra Way	Lake Isabella	Caltrans Shoulder	11.4
SR 178	Mobile Drive	Poplar Street	Lake Isabella	Caltrans Shoulder	0.8
Lynch Canyon Drive	SR 178	Poplar Street	Lake Isabella	NGS	0.7
Bodfish Canyon Road	Lake Isabella Blvd	End of Road	Lake Isabella community	2	2.9
Perkins Ave	Stradley Ave	S Garzoli Ave	McFarland	2	1.0
Sherwood Ave	Stradley Ave	S Garzoli Ave	Mcfarland	2	1.0
Unknown Bike Path	Arrow Street	May Street	Metropolitan Bakersfield	1	0.6
Unknown Bike Path	Knudsen Drive	Hwy 99	Metropolitan Bakersfield	1	0.7
Unknown Bike Path	Beardsley Ave	Kern River Parkway	Metropolitan Bakersfield	1	0.5
Cottonwood Road	E Panama Lane	Panama Road	Metropolitan Bakersfield	2	2.0
E Panama Lane	Cottonwood Road	S Comanche Drive	Metropolitan Bakersfield	2	8.1
E Norris Road	Roberst Lane	N Chester Ave	Metropolitan Bakersfield	2	2.1
Edison Hwy	Washington Street	S Comanche Drive	Metropolitan Bakersfield	2	7.8

Location	Limit 1	Limit 2	Community	Class	Miles
Fairfax Road	E Brundage Lane	Panama Road	Metropolitan Bakersfield	2	6.0
Gilmore Ave	Mohawk Street	Standard Street	Metropolitan Bakersfield	2	1.0
Muller Road	Weedpatch Hwy	S Comanche Drive	Metropolitan Bakersfield	2	4.0
Panama Road	Buena Vista Road	Weedpatch Hwy	Metropolitan Bakersfield	2	12.1
Standard Street	Rio Mirador Drive	Gilmore Ave	Metropolitan Bakersfield	2	1.1
Taft Hwy	Heath Road Extension	Buena Vista Road	Metropolitan Bakersfield	2	3.0
Weedpatch Hwy	58 East Hwy	Panama Road	Metropolitan Bakersfield	2	6.0
Sierra Hwy	Oak Creek Road	Purdy Ave	Mojave	1	2.4
40th St	Arroyo Avenue	Purdy Ave	Mojave	2	3.1
5th Street	Rosewood Blvd	Purdy Ave	Mojave	2	5.1
Arroyo Ave	5th Street	Town Limits	Mojave	2	1.5
Arroyo Ave	45th Street	58 Hwy	Mojave	2	1.9
Butte Ave	5th Street	Town Limits	Mojave	2	1.5
Camelot Blvd	45th Street	Holt Street	Mojave	2	1.6
Denise Ave	5th Street	Town Limits	Mojave	2	1.5
Holt Street	Arroyo Avenue	Purdy Avenue	Mojave	2	3.0
Inyo Street	K Street	O Street	Mojave	2	0.3
K Street	Oak Creek Road	Inyo Street	Mojave	2	0.5
Kock Street	Arroyo Avenue	Purdy Avenue	Mojave	2	3.1
O Street	Inyo Street	Park Street	Mojave	2	0.4
Oak Creek Road	45th Street	K Street	Mojave	2	2.3
Purdy Ave	45th Street	Town Limits	Mojave	2	6.8
Rosewood Blvd	Kyle Street	5th Street	Mojave	2	5.0
Sierra Hwy	Rosamond Blvd	Silver Queen Road	Mojave	3	9.3
HWY 58	SR 14 (Sierra Hwy)	5th Street	Mojave	Caltrans Shoulder	2.9
Bowman Road	Jacks Ranch Road	Brady Street	Ridgecrest	1	1.0
Indian Wells Valley Parkway Trail	N Jacks Rancho Road	N Jacks Rancho Road	Ridgecrest	1	12.6
Javis Ave Parkway	China Lake Blvd	S Downs St Parkway	Ridgecrest	1	1.2
Brady Street	Inyokern Road (SR 178)	South China Lake Blvd	Ridgecrest	2	4.7
Drummond Ave	Jacks Ranch Road	Downs Street	Ridgecrest	2	1.0
Jacks Ranch Road	Ridgecrest Blvd	Springer Ave	Ridgecrest	2	2.0
Javis Ave	South China Lake Blvd	Norma St Parkway	Ridgecrest	2	1.8
S Downs Street	S China Lake Blvd	E Javis Ave	Ridgecrest	2	1.1
Springer Ave	Jacks Ranch Road	Brady Street	Ridgecrest	2	1.0
Springer Ave	College Heights Blvd	Gateway Blvd	Ridgecrest	2	1.0
Springer Ave	S Downs Street	Norma St Parkway	Ridgecrest	2	0.5
E Belle Vista Parkway	Gateway Blvd	Summit Street	Ridgecrest	3	0.4

Location	Limit 1	Limit 2	Community	Class	Miles
E Dolphin Ave	Gateway Blvd	Lumill Street	Ridgecrest	3	0.5
US 395	China Lake Blvd	San Bernardino Cty Line	Ridgecrest	Caltrans Shoulder	14.0
E Bear Mountain Blvd	S Union	Weedpatch Hwy	S Union Ave	2	5.0
Central Ave	Filburn Ave	Kimberlina Road	Shafter	2	1.5
Fresno Ave	Palm Ave	Shafter Ave	Shafter	2	4.1
Kimberlina Road	Magnolia Ave	Shafter Ave	Shafter	2	5.1
Magnolia Ave	McCombs Road	Kimbelina Road	Shafter	2	4.0
Palm Ave	Kimberlina Road	Fresno Ave	Shafter	2	3.0
Palm Ave	Lupine Court	Kimberlina Road	Shafter	2	1.5
Poplar Ave	Fresno Ave	Riverside Street	Shafter	2	2.0
Riverside Street	Central Valley Hwy	Driver Road	Shafter	2	2.6
Riverside Street	Poplar Ave	Charry Ave	Shafter	2	2.5
Shafter Ave	Sierra Ave (Shafter)	Kimberlina Road	Shafter	2	3.3
S H Street	Taff Hwy	Shafter Road	Shafter	3	3.2
A Street	Arroyo Drive	Hilard Street	Taft	2	0.3
Ash Street	Emmons Park	Harrison Street	Taft	2	0.2
Asher Ave	Supply Row	South Street	Taft	2	0.5
Cedar Street	Harrison Street	Airport Road	Taft	2	1.6
Cedar Street	Division Road	Tyler Street	Taft	2	0.4
Division Road	Grevillea Street	Ash Street	Taft	2	0.7
E Ash Street	Adams Street	Airport Road	Taft	2	0.9
E Street	Harding Ave	10th Street	Taft	2	0.6
Elm Street	Division Road	Harrison Street	Taft	2	0.5
General Petroleum	2nd Street	Wood Street	Taft	2	0.4
Grevillea Street	Division Road	Harrison Street	Taft	2	0.5
Harding Ave	A Street	E Street	Taft	2	0.2
Olive Ave	Supply Row	Wood Street	Taft	2	0.3
Pico Street	S 6th Street	Asher Way	Taft	2	0.1
Weedpatch Hwy	Di Giorgio Road	E Bear Mountain Blvd	Taft	2	3.0
Gardner Field Road	County	Aqueduct	Taft	Requires Coordination	1.5
Taft Path	Kern River Parkway	Gardner Field Road	Taft	Requires Coordination	10.6
Castac Lake	Loop		Tejon Mountain Valley	Requires Coordination	7.4
Tule Elk Reserve Path	Tupman Path	Tule Elk Reserve State Park	Tupman	Requires Coordination	1.3
Garlock Road	Redrock-Randsburg Road	US 395	Unincorporated	3	18.0
Hwy 46	Gun Club Road	Magnolia Ave	Wasco	Caltrans Shoulder	8.0
				Total	751.0

Recreation Department, and a separate planning process outside of the scope of this plan.

This plan recommends that a feasibility study be prepared for Class I bike paths that are outside the County's jurisdiction before such facilities can be recommended. The tentative locations of these facilities are shown in **Figures 5-4** and **5-7** for reference purposes only.

Figure 5-1: Bikeway Types

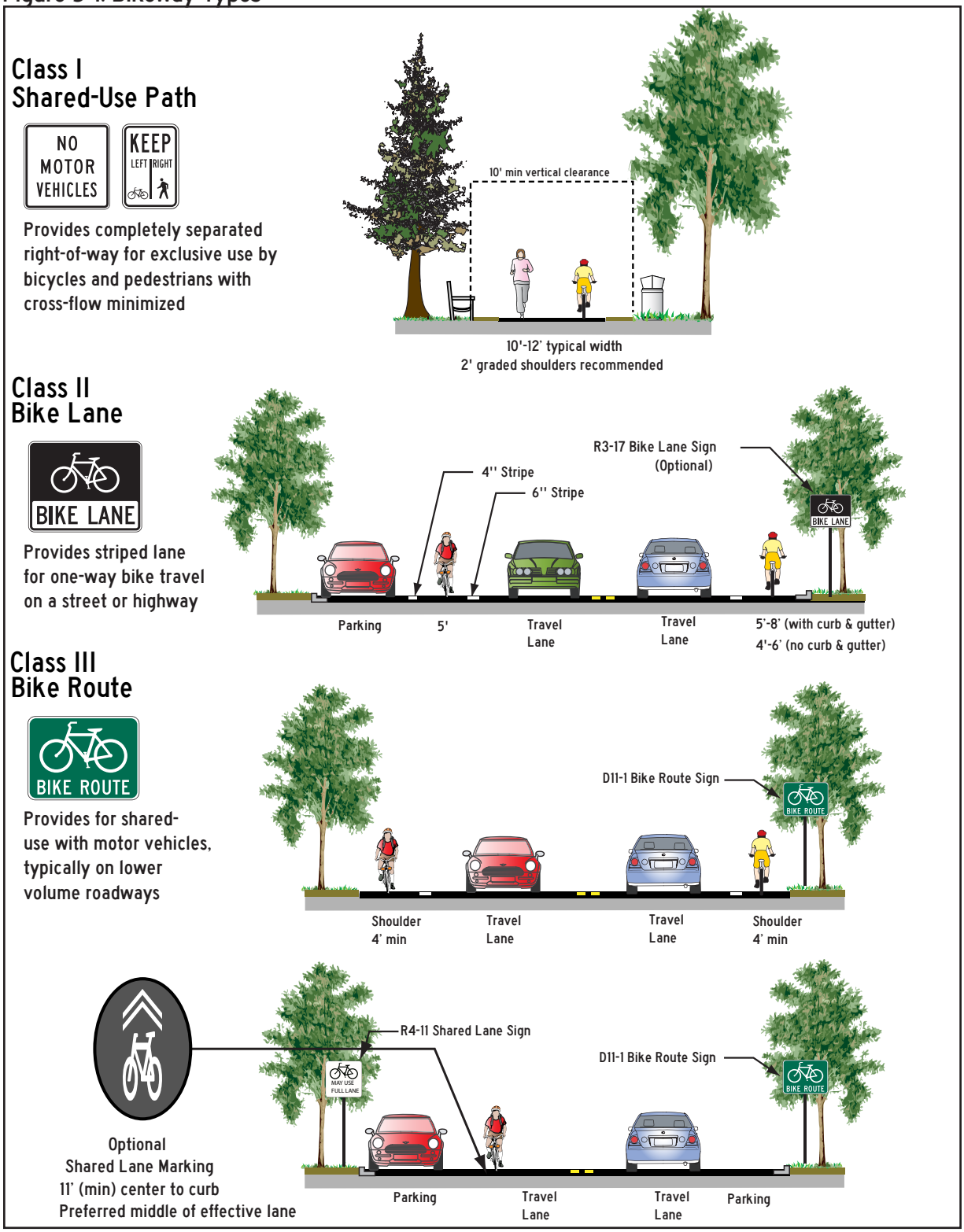


Figure 5-2: Typical Neighborhood Green Street Design Features

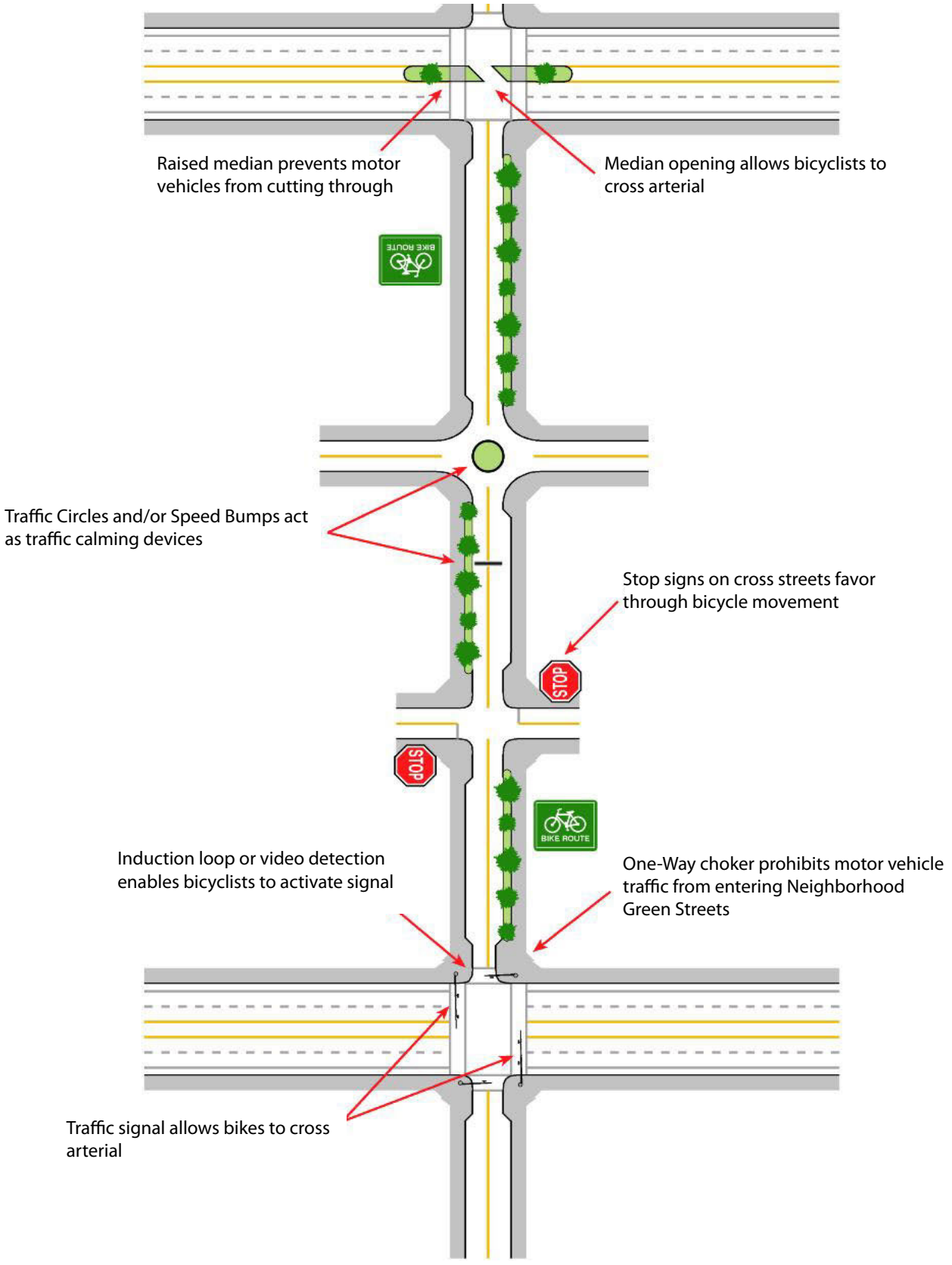


Figure 5-3: Proposed Bicycle Facilities in Kern County

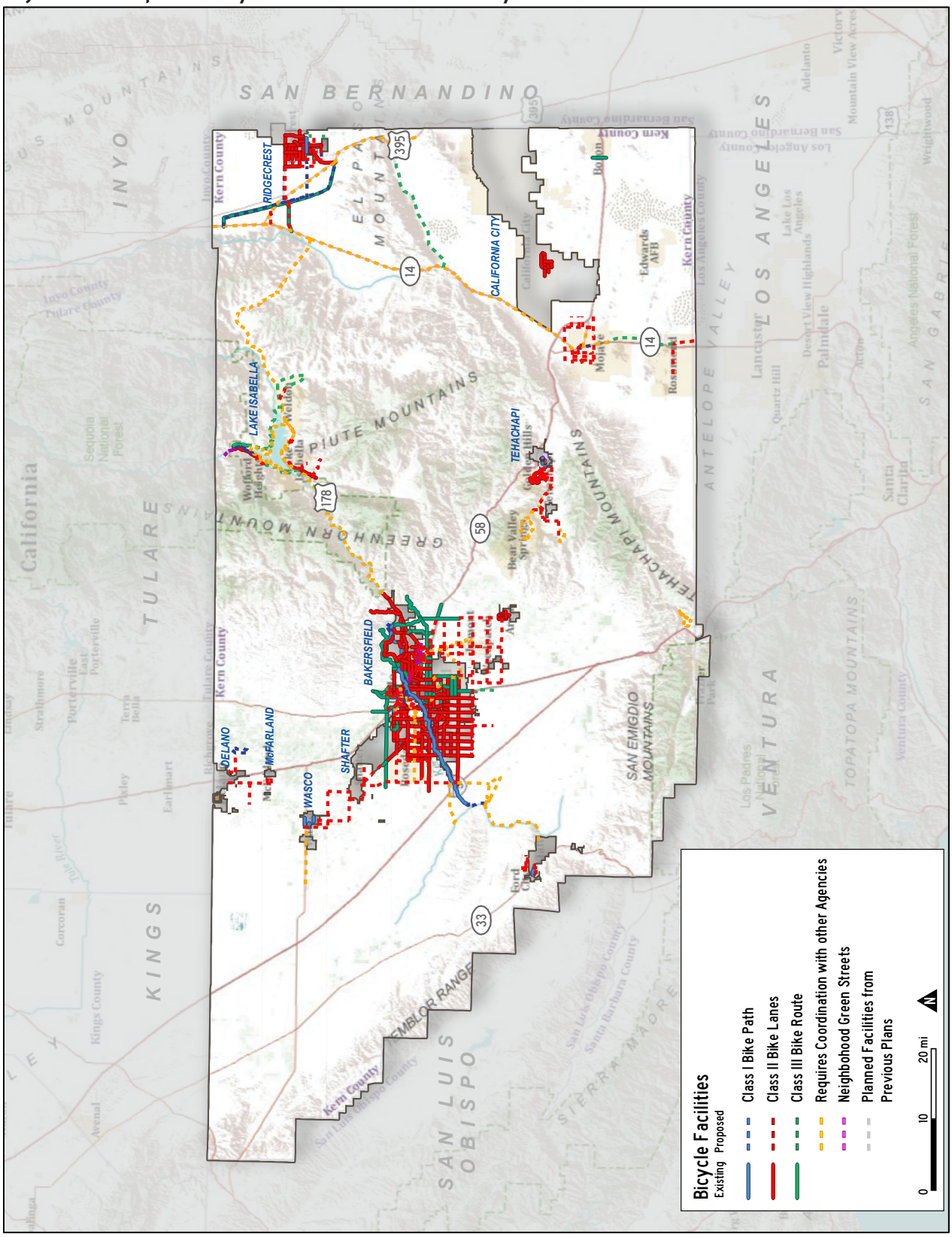


Figure 5-4: Proposed Bicycle Facilities in Bakersfield-Arvin Area

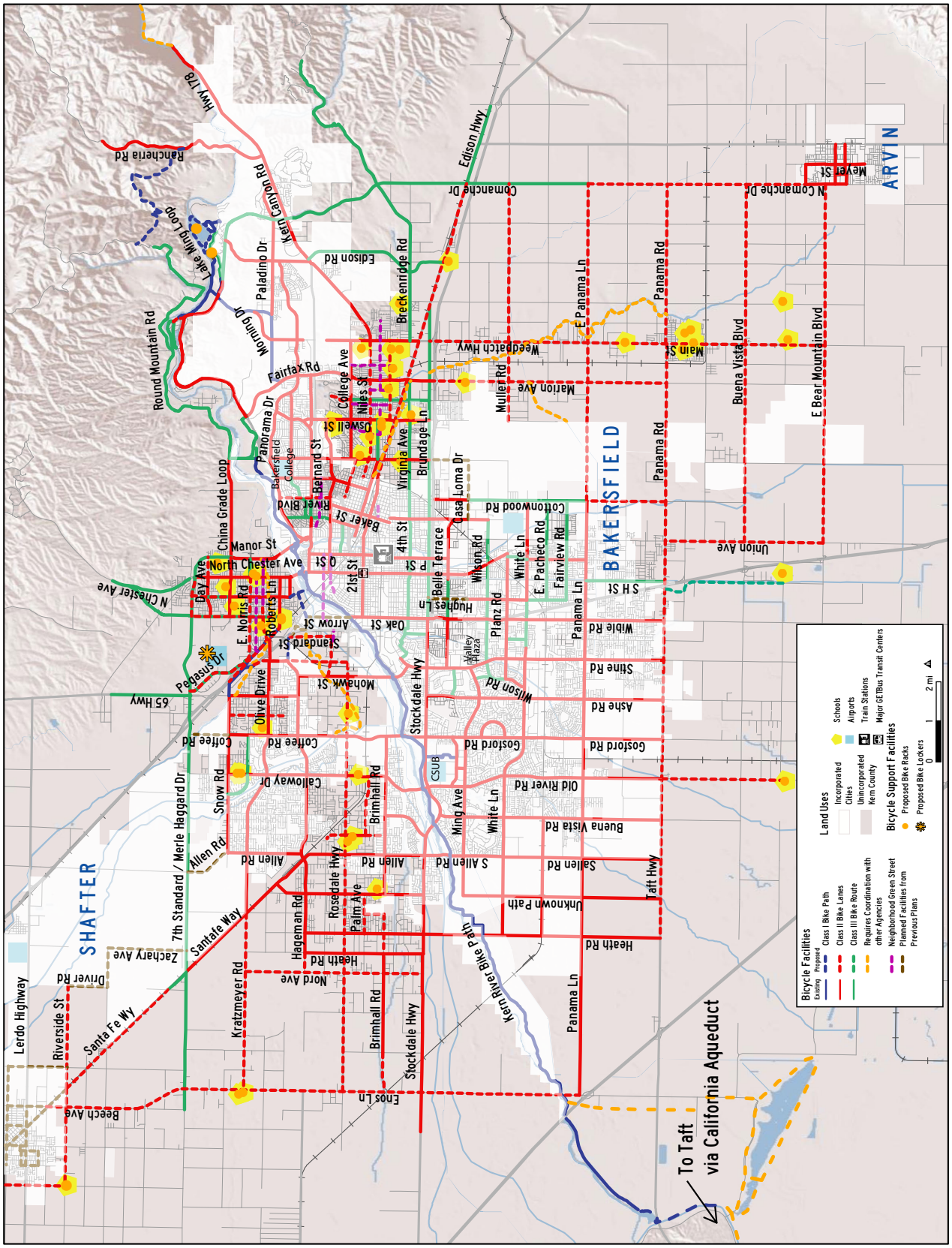


Figure 5-5: Proposed Bicycle Facilities in Delano-McFarland Area

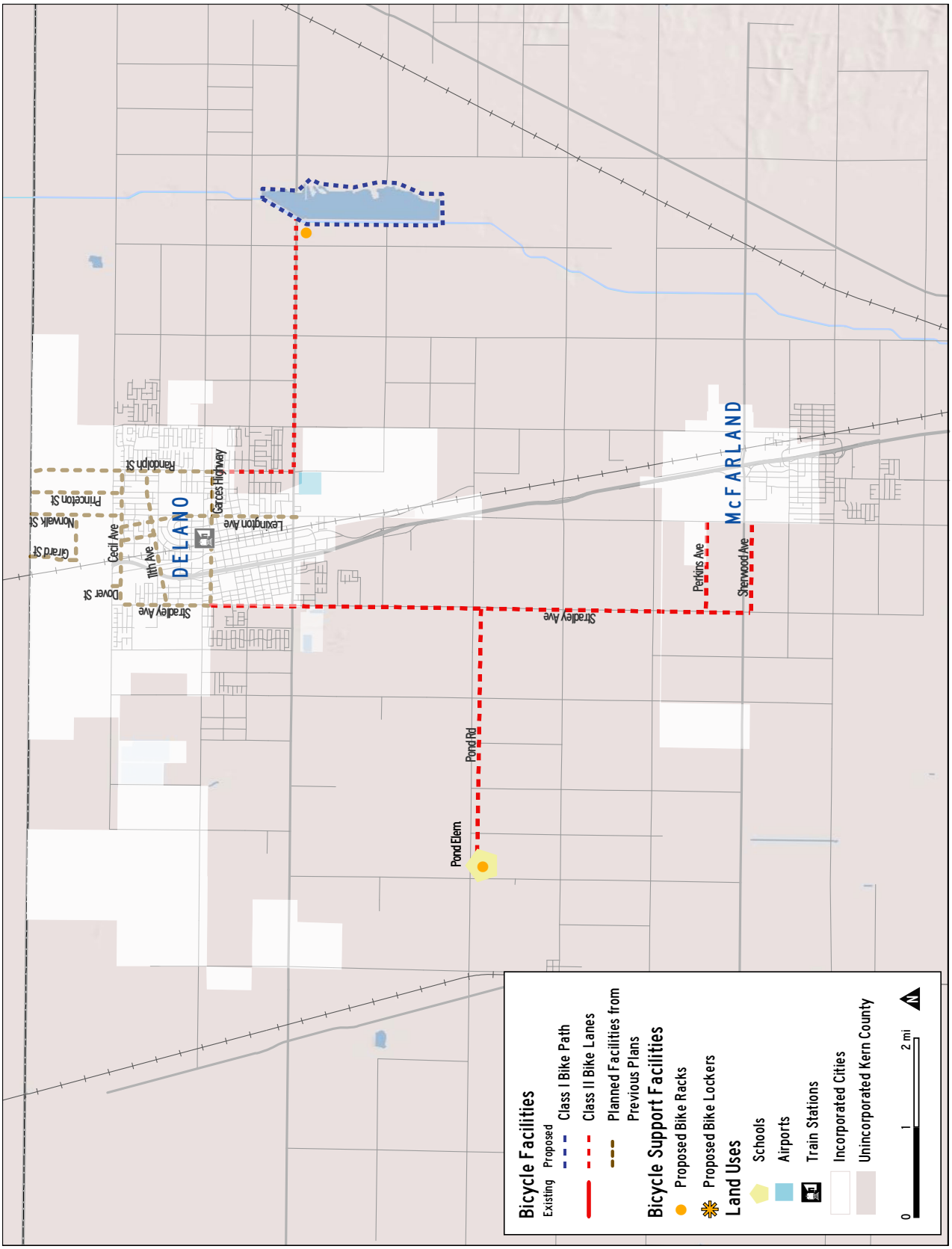


Figure 5-6: Proposed Bicycle Facilities in Kern River Valley Area

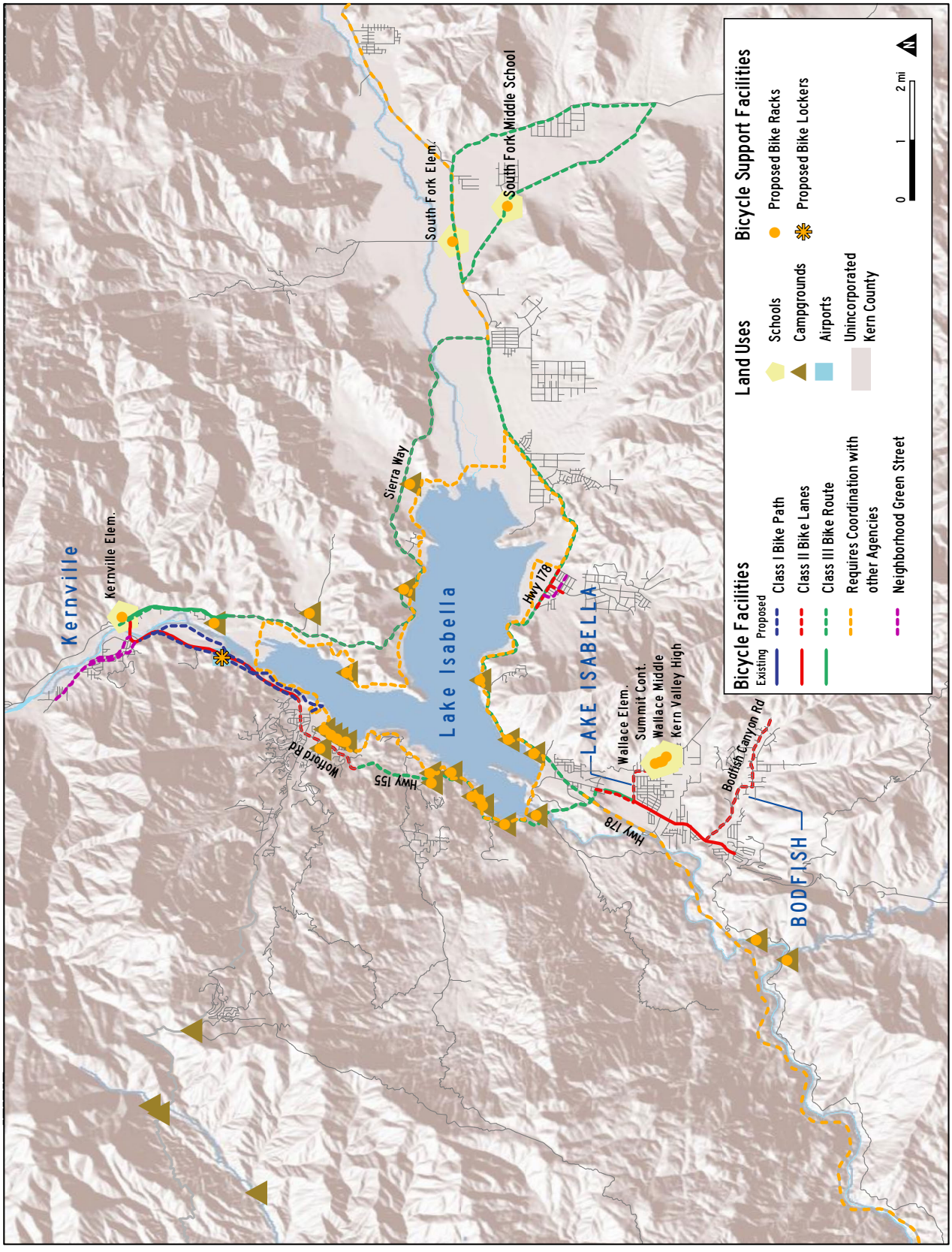


Figure 5-7: Proposed Bicycle Facilities in Mojave Area

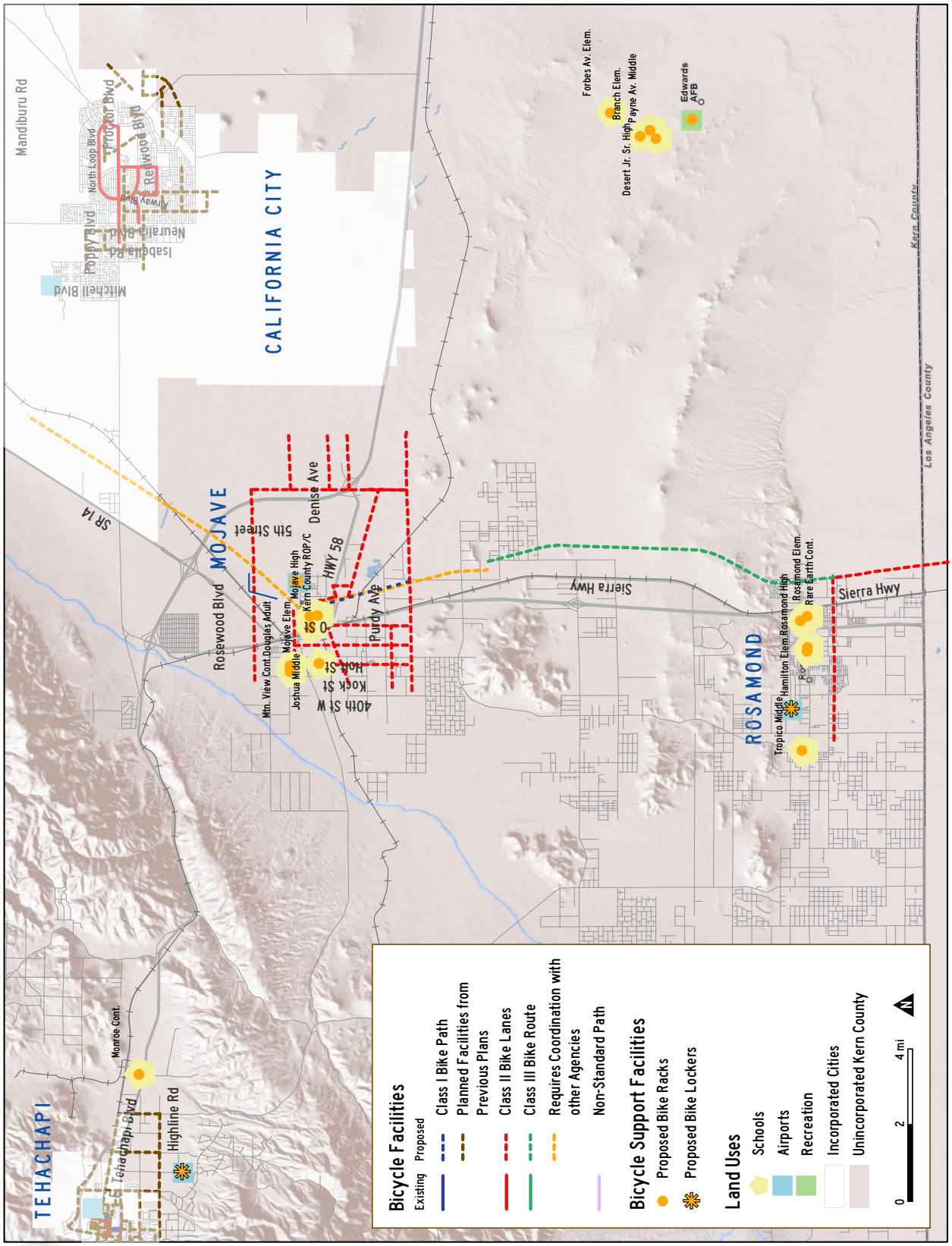


Figure 5-8: Proposed Bicycle Facilities in Indian Wells Valley Area

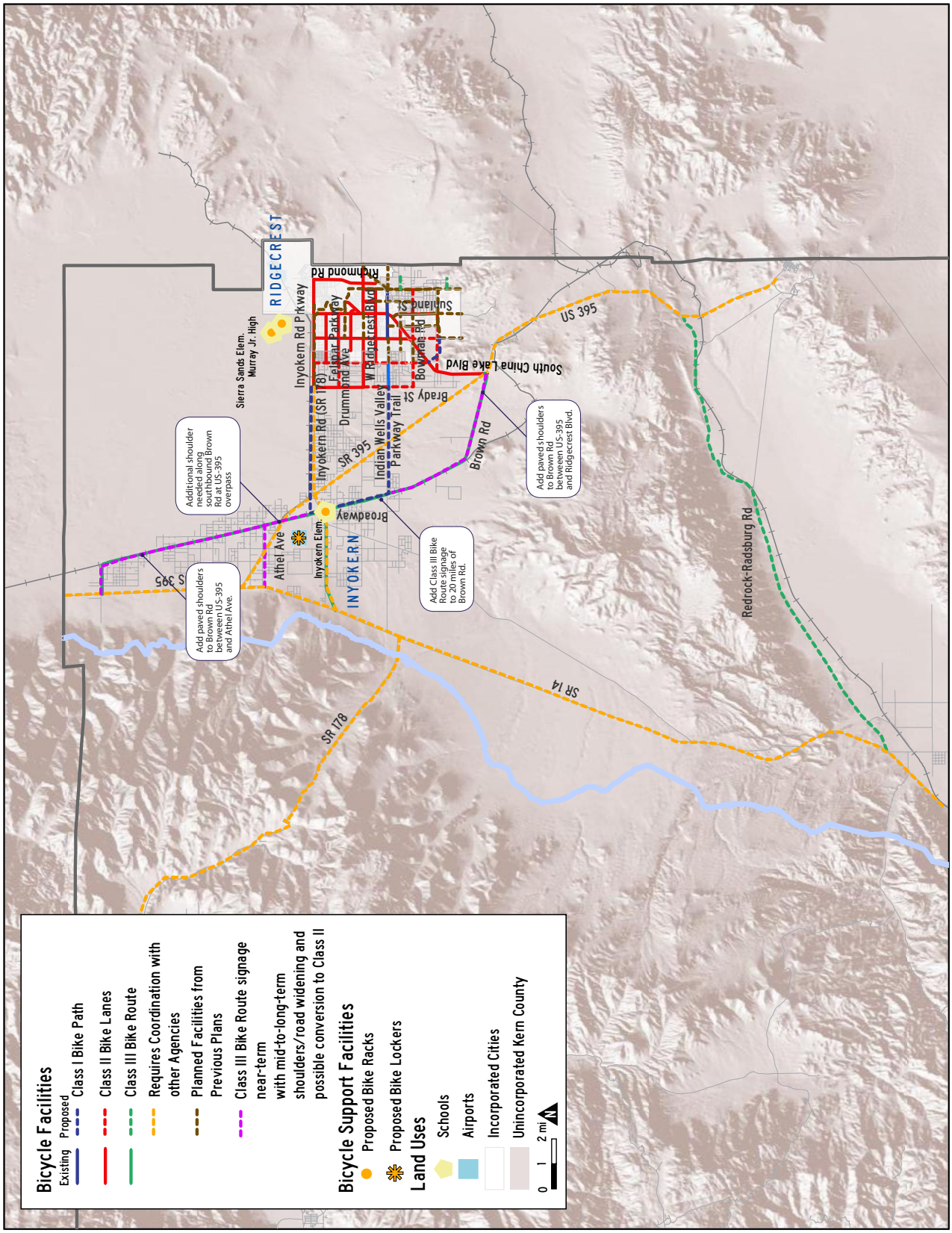


Figure 5-9: Proposed Bicycle Facilities in Shafter-Wasco Area

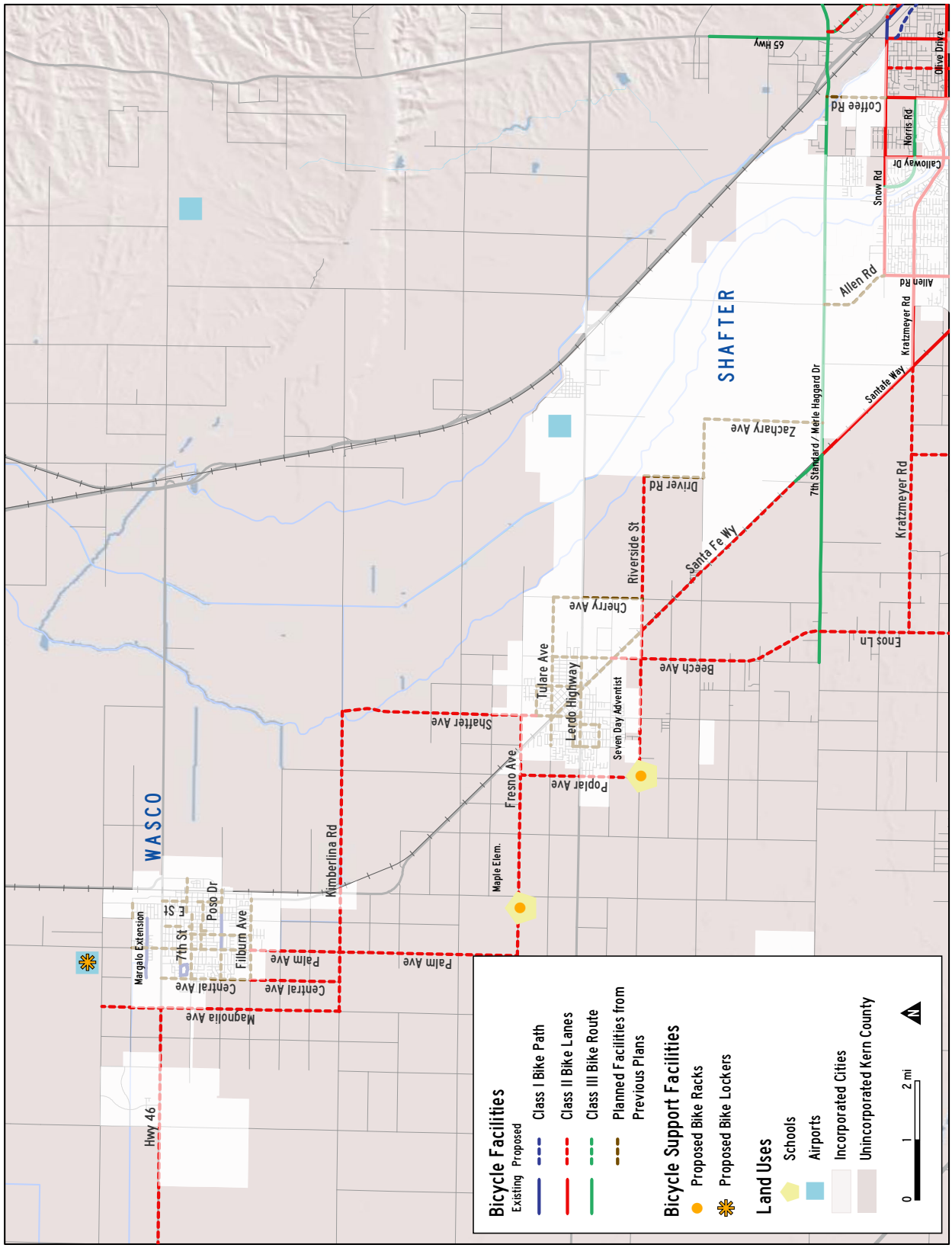


Figure 5-10: Proposed Bicycle Facilities in Taft Area

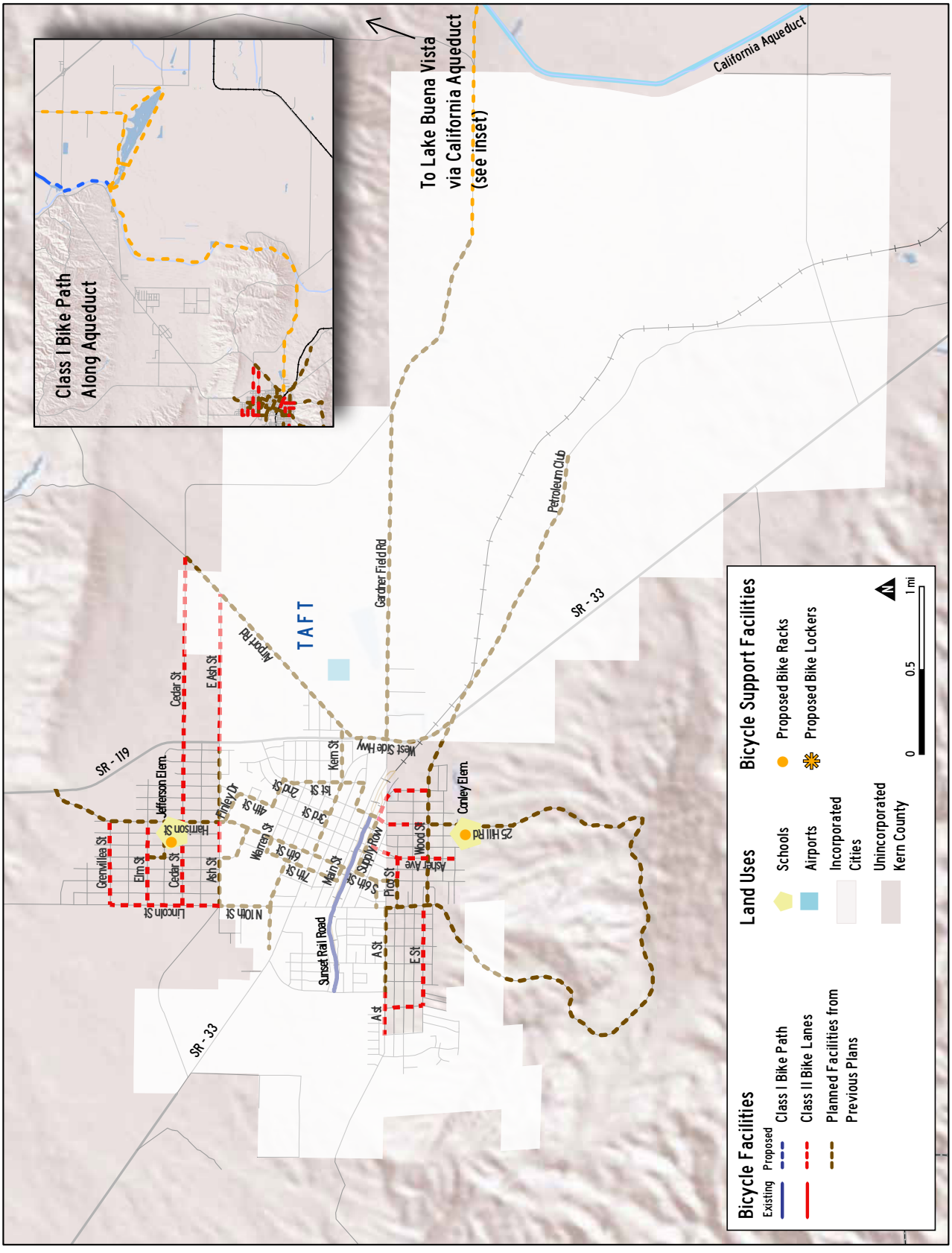
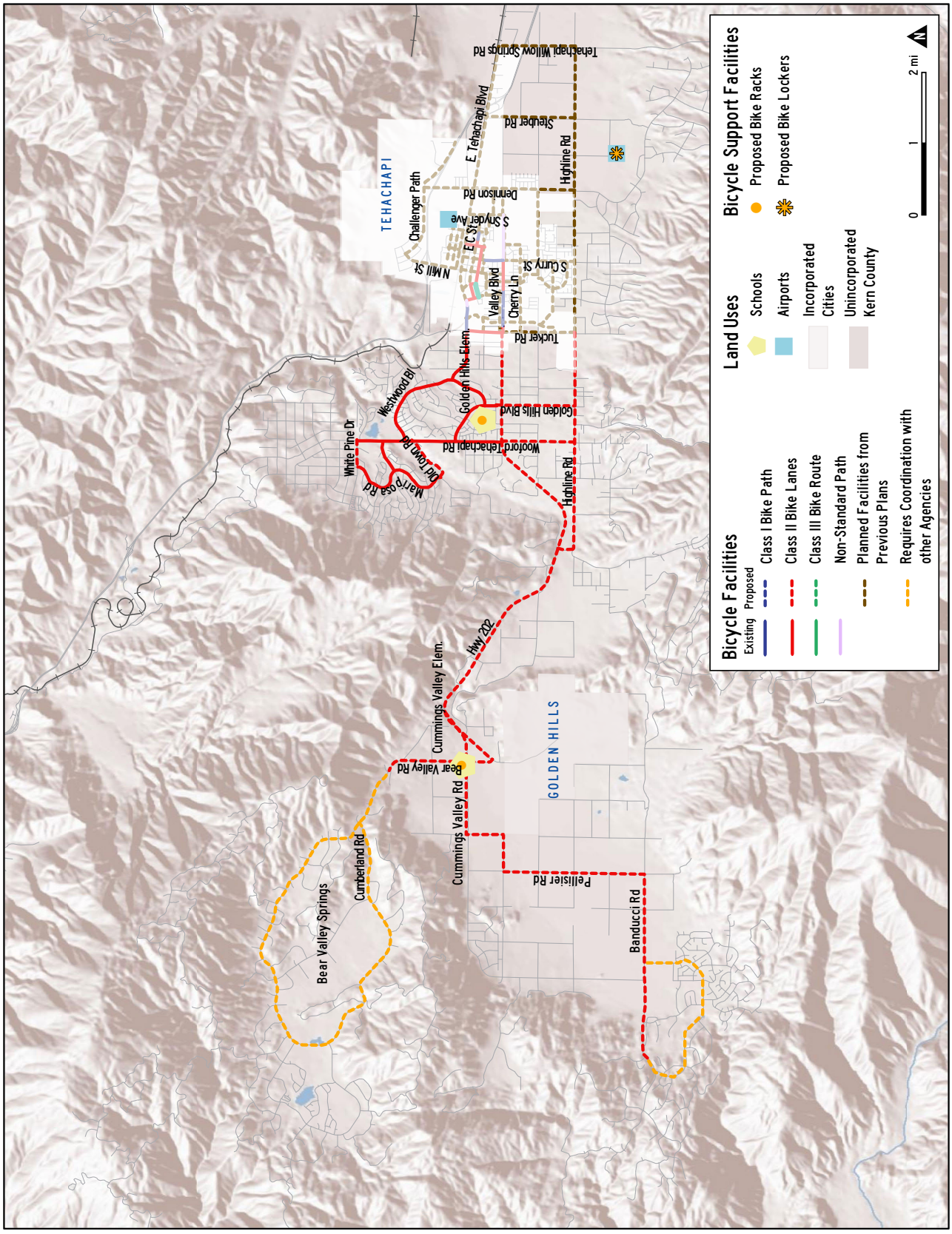


Figure 5-11: Proposed Bicycle Facilities in Tehachapi Area



5.2 Other Recommended Bicycle Improvements and Programs

5.2.1 Bicycle End-of-Trip Facilities

Bicycle parking includes standard bike racks, covered lockers, and corrals. The County lacks proper bicycle parking facilities at its most popular destinations.

End-of-trip facilities such as restrooms, changing rooms, showers and storage for bicycling accessories (helmet and other gear) are especially important for cyclists who commute to work. During the summertime, Kern County's temperatures can exceed 100 degrees, and even cyclists who have a short commute may appreciate the opportunity to change or shower before starting work.

A systematic program to improve the quality and increase the quantity of bicycle parking and end-of-trip facilities should be implemented in Kern County. **Figures 5-3** through **5-10** show the recommendations for bike parking installations throughout the County.

Increase Public Bicycle Parking Facilities

High-quality bike parking should be provided at public destinations, including shopping centers, community centers, parks, recreational facilities and schools. Bicycle racks should be placed in well-lit, accessible and convenient locations where they are visible to the public and convey a sense of safety for cyclists and their bicycles. Bicycle parking on sidewalks in commercial areas and along walkways of shopping centers should be provided according to specific design criteria, reviewed by merchants and the public, and installed as demand warrants.

Generally, inverted-U type racks bolted into the sidewalk are preferred to other designs. Numerous bike rack vendors offer the inverted-U style rack. Inverted-U style racks are relatively inexpensive, simple to install, unobtrusive on sidewalks, and well understood by users. When placed in downtown areas and on sidewalks, the U-rack should be installed parallel to the street, and should be located within the sidewalk furnishing zone (in line with trees, benches, newspaper racks, etc.). Installation of multiple capacity "wave" style racks is not recommended due to common misunderstanding of how to properly lock a bike to these racks (users often lock their bike parallel to the rack, effectively limiting their capacity to 1 or 2 bikes).

The County could look into developing a bicycle rack program where local businesses buy racks in large quantities and coordinate with municipal workers to install the racks in approved places. This will help cut the cost of providing bicycle parking. The Association of Pedestrian and Bicycle Professionals (APBP) Bicycle Parking Guidelines and the Bicyclinginfo.org website are good sources of information on bike rack design and placement.

Inverted-U or similar designs (top) permit locking of the frame as well as the front wheel and are preferred. The lower image shows a rack used in Davis, CA and Madison, WI which fits all types of bikes and has proven to be very durable and scalable to the number of spaces required.

5.2.2 Multimodal Connections

Support facilities and connections to other modes of transportation are essential components of a bicycle system because they enhance safety and convenience for cyclists at the end of every trip. Linking bicycling with public transit overcomes common barriers such as trip distance, personal safety and security concerns, and riding at night, in poor weather, or up hills. This link also enables bicyclists to reach more distant locations for both recreation and utilitarian purposes.

Existing transit stops are generally in the incorporated cities. While there are few transit stops in the County, multimodal connections can be encouraged with the following projects:

- Allowing bicycle access on all busses with bus-mounted racks
- Implementing bikeways that connect residences, employment centers, schools, and shopping centers to bus stops
- Installing bike racks at bus stops and transit centers
- Installing secure bicycle lockers at transit centers (this type of project may be considered when bicycling demand is high)

5.2.3 Maintenance

Routine maintenance of bikeway facilities is a critical and often overlooked element of bikeway planning. Maintenance includes street sweeping of bicycle lanes and shoulders, repainting and replacing bicycle lane striping, and replacing missing or damaged signage. This Plan recommends the following maintenance related actions to improve bicycling conditions:

- Regular street sweeping including bicycle lanes, shoulders, and intersections
- Repair and improve the surface of roadways; potholes and cracks along the shoulder of roadways primarily affect bicyclists and repairs should be a priority for the County
- Establish a County proactive maintenance program through a customer service line and/or website where residents can report maintenance needs for on-street bikeways and paths
- When paving, sealing, or repaving a road, the County should use this as an opportunity to integrate bicycle facilities if they do not already exist

Well-maintained bicycle facilities increase safety and encourage use of the facility. A comprehensive bicycle maintenance program should include periodic review of sign conditions, pavement markings, barriers, and surface conditions. Extra emphasis should be put on keeping the lanes and roadway shoulders clear of debris and glass.

Bicycle network maintenance unit costs are shown in **Table 5-3.** Bicycle facility maintenance costs are based on per-mile estimates, which cover labor, supplies, and amortized equipment costs for weekly trash removal, monthly sweeping, and bi-annual resurfacing and repair patrol. Other maintenance costs include restriping bike lane lines, sweeping debris, and calibrating signals for bicycle sensitivity.

Table 5-3: Annual Operation and Maintenance Cost Estimates

Facility Type	Unit Cost	Notes
Class I Maintenance	$8,500 Per mi/year	Lighting and removal of debris and vegetation overgrowth.
Class II Maintenance	$2,000 Per mi/year	Repainting lane stripes and stencils, sign replacement as needed.
Class III Maintenance	$1,000 Per mi/year	Sign and stencil replacement as needed.
Neighborhood Green Streets Maintenance	$1,500 Per mi/year*	Sign and stencil replacement as needed, pothole filling, vegetation trimming.

Source: Alta Planning + Design, 2012

**Note: Cost will vary depending on level of treatment*

5.2.4 Signage

Bikeway signage includes bike route, lane or path identification, as well as signs providing regulation or warnings and wayfinding information. Signage is important for numerous reasons. It can help bicyclists identify bikeway routes and can also increase bicyclist visibility.

The California MUTCD and the California Highway Design Manual (CA-HDM) outline the requirements for bikeway signage, which are included in Appendix A: *Bicycle Facilities Design Guidelines* under the *Wayfinding Standards and Guidelines* section.

This Plan recommends designating roadways as bicycle routes with signage where (1) bike lanes are not feasible in the near term, (2) on-street parking is not present or the speed limit is not appropriate for Shared Lane Markings, and (3) along highway shoulders approved by Caltrans that have a minimum of six-foot width. In addition to standard CA-MUTCD "Bike Route" (D-11) signage, this Plan recommends using Bicycle Warning signs (W-11) and Share the Road signs (W-11 + W-16-1). See **Figure 5-12** for examples of this signage.

Figure 5-12: Sample Bike Route Signage

5.2.5 Recommended Programs

Creating a region that supports and encourages its residents to bicycle involves more than just infrastructure improvements. Kern County should consider more than bicycle facility improvements and develop or participate in programs that educate bicyclists and motorists, raise awareness about opportunities to bike, and enforce the laws that keep bicyclists safe. The County can encourage increased bike ridership by supporting programs that incentivize bicyclists through encouragement and improved convenience, safety, and education. This section recommends programs for the communities in Kern County that will educate people about bicyclists' rights and responsibilities, safe bicycle operation, as well as encourage residents to bicycle more frequently.

5.2.6 Education Programs

Bicycle Skills Courses

Most bicyclists do not receive comprehensive instruction on safe and effective bicycling techniques, laws, or bicycle maintenance. Bike skills training courses are an excellent way to improve both bicyclist confidence and safety. The League of American Bicyclists (LAB) developed a comprehensive bicycle skills curriculum which is considered the national standard for adults seeking to improve their on-bike skills. The classes available include bicycle safety checks and basic maintenance, basic and advanced on-road skills, commuting, and driver education.

This Plan recommends that Kern County partner with non-profits, advocacy groups, or other organizations to offer bicycle skills courses for all ages, and incorporate them into recreation center programs or other city programs. Bike Bakersfield is an example of a potential partner for these programs. Bicycle skills courses that target children should, to the extent feasible, be fully integrated into school curriculum through PE classes, general assembly, and other means of instruction.

Bicycle Rodeo

Bicycle Rodeos are individual events that help children develop basic bicycling techniques and safety skills through the use of a bicycle safety course. Rodeos use playgrounds or parking lots set-up with stop signs, traffic cones, and other props to simulate the roadway environment. Students receive instruction on how to maneuver, observe stop signs, and look for on-coming traffic before proceeding through intersections. Bicycle Rodeos also provide an opportunity for instructors to ensure children's helmets and bicycles are appropriately sized. Events can include free or low-cost helmet distribution and bike safety checks.

Trained adult volunteers, local police, and the fire department can administer Rodeos. Bicycle Rodeos can be stand-alone events or can be incorporated into health fairs, back-to-school events, and Walk and Bike to School days.

Public Awareness Campaign

Bicyclists often come into conflict with other modes of transportation because the general public is not expecting to see them on the road. A public awareness campaign can increase visibility of bicyclists and highlight their rights and responsibilities to all modes. New York City has a "Look" campaign that uses various media formats to remind residents to look for bicyclists[10]. A similar campaign that educates the public on the presence of bicyclists will reduce potential conflicts in Kern County and create a more bicycle-friendly region. The campaign should be conducted using a wide range of media to reach a diverse population including, but not limited to, radio, TV, print media, and social media.

Street Closure Events

First implemented in Bogota, Colombia, the Ciclovia is a community event based around a street closure. Ciclovias provide local recreational and business opportunities for the community and are increasingly popular citywide events. Ciclovias can combine with other popular community events to promote walking and bicycling as a form of viable transportation. Ideally, Ciclovias should provide access to civic, cultural, or commercial destinations.

The City of Los Angeles has hosted four ciclovias, called "CicLAvia," since October 2010. At all CicLAvia events, routes went through downtown Los Angeles. Kern County could work with the incorporated cities and non-profit organizations, such as Bike Bakersfield, to implement ciclovias in order to highlight some of the county's new bikeways once constructed.

Driver Education Training

Interacting with bicyclists on the road is often not included in training for new drivers. Teaching motorists how to share the road from the start can help reduce potential conflicts between drivers and bicyclists. The LAB offers a three-hour motorist education classroom session that teaches participants topics including roadway positioning of bicyclists, traffic and hand signals, principles of right-of-way, and left and right turn problems[11]. Encouraging instructors of driver education courses to add this class to their curriculum and working with the Department of Motor Vehicles and Superior Court to explore opportunities to offer this class as a diversion course for motorists who receive citations for reckless driving or as a training session for local professional drivers should be explored.

10 *http://www.nyc.gov/html/look/html/about/what_we_do_text.shtml*

11 *http://www.bikeleague.org/programs/education/courses.php#motorist*

5.2.7 Encouragement Programs

Bike Share

Regular bicycle commuting requires some activities that not all bicyclist types are interested in, such as finding secure parking areas and keeping up their bicycle. Bike-sharing programs can encourage people to give bicycling a try by reducing barriers that some face. Bike-sharing programs involve stations of bikes around a city or region for checkout. Several different distribution models have been used, such as Capital Bikeshare in Washington, D.C., which has 140 stations throughout the district and in Arlington, VA. Users can check out bicycles for a specified period of time at one station and turn them back in at another station across town. Bike-sharing programs not only increase the visibility of bicycling and reduce barriers to riding, but can create an identity for the implementing jurisdiction.

By working with the incorporated cities and transportation agencies, Kern County can create a more bicycle-friendly region by implementing a multi-jurisdictional bike-sharing program. Stations are most appropriate at transit hubs, downtowns, and major employment centers.

Bicycle Commuter Campaign

A Bicycle Commuter Campaign encourages people to commute by bicycle and makes the general public aware that bicycling is a practical mode of transportation. San Luis Obispo Regional Rideshare, for example, organizes the "Commute for Cash Challenge" every October as part of "Rideshare Month" in which commuters log the miles that they commute using alternative transportation for a chance to win prizes.[12] Kern County could increase bicycling mode share throughout its communities by implementing a campaign to highlight bicycling as a commute mode.

Valet Bicycle Parking

Providing safe and secure bicycle parking helps encourage individuals to bicycle. San Francisco passed a city ordinance that requires all major city events to provide bike parking and pioneered an innovative tool for stacking hundreds of bicycles without racks.[13] This Plan recommends Kern County provide, or require of event organizers, temporary valet bicycle parking at regularly-occurring events with expected large attendance, such as Farmers Markets. The County could work with local advocacy groups or non-profits, such as Bike Bakersfield, to provide this service at events.

12 *http://www.rideshare.org/CommuteforCashChallenge2010.aspx*

13 *www.sfbike.org/?valet*

Safe Routes to School

Helping children walk and bicycle to school is good for children's health and can reduce congestion, traffic risks, and air pollution caused by parents driving children to school. Safe Routes to School programs use a "5 Es" approach using Engineering, Education, Enforcement, Encouragement, and Evaluation strategies to improve safety and encourage children walking and biking to school. The programs are usually run by a coalition of local government, school, and school district officials, and teachers, parents, students, and neighbors. A Kern County Safe Routes to School program will be a key element in encouraging children to ride more and parents to feel comfortable with their friends riding.

Bicycling Maps

One of the most effective ways of encouraging people to bike and walk is through the use of maps and guides to show that the infrastructure exists, to demonstrate how easy it is to access different parts of the city by bike or on foot, and to highlight unique areas, shopping districts or recreational areas. Biking and walking maps can be used to promote tourism to an area, to encourage residents to walk, or to promote local business districts. Maps can be citywide, district-specific, or neighborhood level, family-friendly maps.

5.2.8 Enforcement Programs

Bicycle Patrol Units

On-bike officers are an excellent tool for community and neighborhood policing because they are more accessible to the public and are able to mobilize in areas where patrol cars cannot (e.g., overcrossings and paths). Bike officers undergo special training in bicycle safety and bicycle-related traffic laws and are therefore especially equipped to enforce laws pertaining to bicycling. Bicycle officers help educate bicyclists and motorists through enforcement and also serve as good outreach personnel to the public at parades, street fairs, and other gatherings.

Targeted Bicycling Enforcement

Traffic enforcement agencies enforce laws pertaining to bicycles as part of the responsible normal operations. Directed enforcement is one way to publicize bicycle laws in a highly visible and public manner. Examples of directed enforcement actions include: intersection patrols, handing out informational sheets to motorists, bicyclists and pedestrians; and enforcing speed limits and right-of-way. This can help with issues prevalent in Kern County, such as bicyclists traveling the wrong direction.

Targeted Driving Enforcement

Much like directed enforcement for bicyclists, police departments can target enforcement of motorists for bicycle-related violations. Common actions of drivers that create potential conflicts with bicyclists include parking in bike lanes and not sharing the road. Directing enforcement or these actions can create a safer bicycling environment in Kern County.

5.2.9 Evaluation Programs

Annual Bicycle Counts and Surveys

Partnering with local advocacy groups and volunteers to conduct annual bicycle counts is

a mechanism for tracking bicycling trends over time and for evaluating the impact of bicycle projects, policies, and programs from the Kern County Bicycle Master Plan and Complete Streets Recommendations. Ongoing count data will enable the County to analyze changes in bicycling activity and to evaluate the impact of new bicycle infrastructure.

Annual surveys measure "attitudes" about bicycling. These surveys could be conducted either as online surveys or intercept surveys. Surveys will determine if bicyclists and other community members are reacting positively or negatively to bicycle facilities and programs implemented. Results of the counts and surveys can inform future bicycling planning efforts and be presented to the Bicycle Advisory Committee at regular meetings.

Bicycle Advisory Committee

After adoption of the Kern County Bicycle Master Plan and Complete Streets Recommendations, it is crucial to implement the proposed projects and programs. A bicycle advisory committee will help to advise Kern County on bicycling issues that are important to plan implementation. The committee is typically charged with technical issues, such as project feasibility. Committee members can include transportation staff, elected officials, bicycling advocates, and other appropriate persons.

Mobility Coordinator Position

A number of jurisdictions around the country staff a part- or full-time Mobility Coordinator position. Agencies with such a position usually experience greater success in bike plan implementation. An ongoing mobility coordinator position in Kern County will assist with the current bicycle planning and safety efforts, implementation of the bicycle plan, and pursuing grant funding opportunities. In addition to supporting existing programs such as bicycling parking provision and educational activities, potential job duties for this staff position are listed below.

- Monitoring facility planning, design, and construction that may impact bicycling.
- Staffing bicycle advisory committee meetings.
- Coordinating the implementation of the recommended projects and programs listed in this Plan.
- Identifying new projects and programs that would improve the county's bicycling environment and improve safety for bicyclists, pedestrians, and motorists.
- Coordinating evaluation of projects and programs, such as bicycle counts.
- Coordination of projects with incorporated cities.
- Pursuing funding sources for project and program implementation.

5.3 Cost Estimate for the Proposed Network

This section describes the cost estimate methodology and presents the cost estimates for the recommended bikeway projects. The proposed Kern County bikeway network is comprised of more than 420 miles of recommended facilities requiring an efficient cost estimating methodology. After developing the proposed bicycle network, costs estimates were developed for the projects based on the assumptions outlined below.

- This Plan assumes Class I multi-use paths will be 10 feet of paved surface bound on either side with two-foot shoulders.
- Signage will comply with the CA MUTCD and AASHTO (American Association of State Highway and Transportation Officials) Guide for the development of Bicycle Facilities and the CA-HDM.
- Class II bike lanes cost estimates reflect the minimum Caltrans Class II standards outlined in **Figure 5-1**.
- Class II bike lanes costs are based on County roadway classifications and roadway characteristics. Cost estimates assume roadway or shoulder widening and minor surface repairs on most rural roadways.
- Cost estimates for Class III bicycle routes are based on the following minimum shoulder widths:
  - Minimum four-foot clear shoulder width for urban and rural local roads.
  - Minimum five-foot shoulder width for urban and rural major collector roads
  - Minimum six-foot shoulder width for principal arterials and highways
- The proposed Class III facilities along State Routes are within Caltrans jurisdiction; therefore they are not included in the cost estimates. The implementation of these facilities should be coordinated with Caltrans.

Table 5-4 provides a detailed summary of the fully burdened costs of the different bikeway facility types. Unit costs presented are planning level costs estimates based on typical or average costs. Planning costs do not reflect project specific factors such as intensive grading, landscaping, intersection modifications, and right-of-way acquisitions that may increase the actual costs of construction. The total implementation cost of Kern County's proposed bicycle network is estimated at approximately $27million, as is shown in **Table 5-4**.

Table 5-4: Proposed Bicycle Network Cost Estimates

Facility Type	Unit Cost Per mile	Proposed Facility Length (mi)	Cost Estimate
Standard Class I	$400,000	37.2	$14,870,506
Class II Bike Lanes: Striping and Signing both roadway sides	$30,000	291.8	$8,752,862
Class III Bike Route: Signing Only	$15,000	76.8	$2,813,601
Class III Bike Route: Signing, markings (Sharrows)	$25,000	22.9	$342,750
Neighborhood Green Streets*	$30,000	15.5	$464,495
	Totals	444.1***	$27,244,214

Source: Alta Planning + Design, 2012

**This unit is a base cost and does not include potential need for intersection treatments*

*** Cost Estimates were not developed for projects along Caltrans State Highways*

Before constructing recommended facilities, additional field work will be required to verify existing conditions. These include but are not limited to: roadway widths, right-of-way, travel lanes, bicycle and motor vehicle patterns and conflicts, signal timing, and pavement conditions. Final bikeway treatments should be selected based on verified conditions.

5.4 2020 and 2035 Mode Share Projections

The Kern COG Demand Model was obtained to forecast future mode share for 2020 and 2035. As a traditional four-step – trip generation, trip distribution, mode split, and trip assignment, the demand model estimates the number of person trips generated based on zonal-level land uses and socio-demographics. Based on travel time and distance, the model creates trip tables between zonal pairs and then determines the mode split. The numbers of non-motorized person trips are projected and a mode share can be computed. Countywide and subarea projections of mode share were prepared. **Table 5-5** shows the results of the mode split for home-based work trips Countywide as well as by subareas defined in the demand model.

As a benchmark for comparison, the existing bike and walk mode shares from the American Community Survey's Means of Transportation to Work, found in **Table 3-4** and **Table 3-5,** were compared to the 2000 base year model mode share for home-based work person trips. The KernCOG Demand Model estimates a countywide bicycle mode share of 1.3% and a walk mode share of 1.8%. This is in contrast to the Aggregate Demand Model of a 0.3% mode share for bicycling and 0.5% mode share for walking. While the number of daily bicycle trips found in the KernCOG Demand Model increases in 2020 and 2035, the bike mode share actually decreases to 1.2% and 1.1%, respectively. This is likely due to the fact that the mode split effects of specific bike and pedestrian improvements as recommended in this plan are not captured in the Kern COG Demand Model.

The Kern COG staff is currently using the demand model to quantify greenhouse gas emissions and VMT as required by SB 375, which reflects the future mode share projections shown in **Table 5-5**.

Other tools are also available to better understand and to predict the bike and pedestrian activities and travel; however, the project contract did not include running these models. Other GIS-based approaches that take into account geographic, economic, and social factors that affect mode choice could be applied to adjust the demand model. In addition, other methods as described briefly below could be used to consider the mode share shifts from specific bike and pedestrian improvements:

- Sketch-planning tools use readily available data such as bicyclist journey to work data to estimate the number of bicyclists in a given area.
- Aggregate facility-level attraction models consider the quality of the facilities as well as the destinations when predicting bicycling and walking. These other methods would provide alternative approaches beyond what is available in the current Kern COG Demand Model.

These other methods would provide alternative

Table 5-5: Kern COG Demand Model

	2010		2020		2035	
Mode	Trips	%	Trips	%	Trips	%
Countywide						
Auto	4,061,176	96.8%	4,763,856	96.8%	6,288,581	97.2%
Transit	48,234	1.1%	66,751	1.4%	71,735	1.1%
Walk	31,695	0.8%	32,895	0.7%	39,225	0.6%
Bike	55,481	1.3%	59,411	1.2%	73,121	1.1%
Total	4,196,586	100%	4,922,913	100%	6,472,662	100%
Area 1 (Bakersfield)						
Auto	2,652,064	96.1%	3,124,410	96.1%	4,174,491	96.7%
Transit	48,234	1.7%	66,751	2.1%	71,735	1.7%
Walk	18,488	0.7%	17,696	0.5%	19,481	0.5%
Bike	39,897	1.4%	40,931	1.3%	49,379	1.1%
Total	2,758,683	100%	3,249,789	100%	4,315,087	100%
Area 2 North-West (Shafter, Wasco, McFarland, Delano)						
Auto	497,494	98.0%	562,660	97.9%	689,522	98.0%
Transit	-	0.0%	-	0.0%	-	0.0%
Walk	5,008	1.0%	5,707	1.0%	6,915	1.0%
Bike	5,400	1.1%	6,118	1.1%	7,430	1.1%
Total	507,902	100%	574,485	100%	703,867	100%
Area 3 Noth-East County (Lake Isabella, Indian Wells Valley, Ridgecrest)						
Auto	372,624	97.3%	439,217	97.4%	563,290	97.5%
Transit	-	0.0%	-	0.0%	-	0.0%
Walk	4,878	1.3%	5,390	1.2%	6,996	1.2%
Bike	5,427	1.4%	6,367	1.4%	7,722	1.3%
Total	382,929	100%	450,974	100%	578,008	100%
Area 4 South-East County (Tehachapi, California City, Mojave, Rosamond)						
Auto	438,883	98.4%	529,725	98.3%	729,909	98.2%
Transit	-	0.0%	-	0.0%	-	0.0%
Walk	2,827	0.6%	3,544	0.7%	5,181	0.7%
Bike	4,390	1.0%	5,589	1.0%	8,099	1.1%
Total	446,099	100%	538,858	100%	743,189	100%
Area 5 South-West County (Taft)						
Auto	100,111	99.1%	107,845	99.1%	131,368	99.1%
Transit	-	0.0%	-	0.0%	-	0.0%
Walk	494	0.5%	557	0.5%	652	0.5%
Bike	367	0.4%	405	0.4%	491	0.4%
Total	100,972	100%	108,807	100%	132,511	100%

approaches beyond what is available in the current Kern COG Demand Model. The Aggregate Demand model presented below does however take into account increases in bicycle mode share in relation to the recommended facilities included in this plan. The section below includes a discussion of the model and the estimated increase in bicycle commuters in 2030.

5.5 Aggregate Demand Model

Journey-to-work information collected by the US Census Bureau's *American Communities Survey* (ACS) is the foundation of this analysis. The ACS "Commuting to Work" data provide an indication of current bicycle system usage. A major objective of any bicycle facility enhancement or encouragement program is to increase the "bicycle mode split" or percentage of people who choose to bike rather than drive alone. The most recent ACS datasets available for Kern County are the 2005-2009 five-year estimates. Model variables from the ACS for the unincorporated areas of the County include: total population (196,100 people), employed population (73,982 people), and combined school enrollment (48,710).

The 2009 National Household Travel Survey (NHTS) provides a substantial national dataset of travel characteristics, particularly for trip characteristics of bicycling and walking trips. Data used from this survey include:

- Student mode split, grades K-12
- Trip distance by mode by trip purpose
- Ratio of walking/bicycling work trips to utilitarian trips
- Ratio of work trips to social/recreational trips
- Average trip length by trip purpose and mode

Several of these variables are trip type multipliers that provide an indirect method of estimating the number of walking and bicycling trips made for other reasons, such as shopping and running errands. NHTS 2009 data indicates that for every bicycle work trip, there are slightly more than two utilitarian bicycle trips made. Although not all of the utilitarian bicycling trips are made by people who bicycle to work, these multipliers allow a high percentage of the community's walking and bicycling activity to be captured in an annual estimate.

The S*afe Routes to School Baseline Data Report* (2010) was used to determine the percent of students who walk or bicycle by the parents' estimate of distance as well as the frequency of carpooling for trip replacement.

As with any modeling projection, the accuracy of the result is dependent on the accuracy of the input data and other assumptions. Effort was made to collect the best data possible for input to the model, but in many cases national data was used where local data points were unavailable. Examples of information that could improve the accuracy of this exercise include the detailed results of local Safe Routes to Schools parent and student surveys, a regional household travel survey, and a student travel survey of college students.

5.5.1 Existing Walking and Bicycling Trips

Table 5-6 shows the results of the model, which estimates that approximately 1,831 bicycle trips and 12,062 walking trips occur in unincorporated Kern County each day. Based on the model assumptions, the majority of trips are non-work utilitarian trips, which include medical/dental services, shopping/errands, family personal business, obligations, post office, meals, and other trips. Also, the model estimates that the predicted 3 million bicycling and walking trips each year replace over 1 million vehicle trips, replacing almost 1.2 million vehicle miles of travel.

Table 5-6: Current Walking and Bicycling Demand and Air Quality Benefits

Variable	Bike	Walk	Source
Current Commuting Statistics			
Existing Study Area Population	196,100		2006-2010 American Community Survey, 5-Year Estimates
Employed Population	73,982		2006-2010 American Community Survey, 5-Year Estimates
School Population, K-12	39,215		2006-2010 American Community Survey, 5-Year Estimates
College student population	9,495		2006-2010 American Community Survey, 5-Year Estimates
Current Mode Share			
Existing commuting mode share	0.3%	0.5%	2006-2010 American Community Survey, 5-Year Estimates
Existing school children mode share	0.3%	0.5%	2006-2010 American Community Survey, 5-Year Estimates
Existing estimated college mode share	0.3%	0.5%	2006-2010 American Community Survey, 5-Year Estimates
Current Daily Walking and Bicycling Trips			
Bicycle/walking commuters	222	369	Employed population multiplied by mode split
Weekday bicycle/walking trips	444	738	Number of bicycle/walking commuters multiplied by two for return trips
K-12 bicycle/walking commuters	118	196	School children population multiplied by mode split
Weekday K-12 bicycle/walking trips	236	392	Student trips multiplied by two for return trips
College bicycle/walking commuters	28	47	Employed population multiplied by mode split
Weekday bicycle/walking college trips	56	94	Number of college student trips multiplied by two for return trips
Daily adult bicycle/walking utilitarian trips	500	832	Number of commuting bicycle/walking trips plus number of bicycle/walking college trips
Daily bicycle/walking utilitarian trips	1,095	4,093	Sum of bicycle/walking commute trips and bicycle/walking college trips multiplied by ratio of utilitarian to work trips (NHTS). Distributes weekly trips over entire week (vs. commute trips over 5 days)
Current Daily Walking and Bicycling Trips	1,831	12,062	Sum of weekday bicycle/walking commuter trips, student/ college trips.
Current Daily Walking and Bicycling Trip Replacement			
Replaced Vehicle Trips per Weekday	392	644	Total trips multiplied by drive alone trips to determine automobile trips replaced by bicycle/walking trips
Reduced Vehicle Miles per Weekday	741	429	Number of vehicle trips reduced multiplied by average bicycle/ walking trip length (NHTS 2009)
Yearly Results			Total
Yearly bicycle/walking trips	404,959	2,713,173	3,118,132
Yearly vehicle trips reduced	181,598	868,115	1,049,713
Yearly miles bicycled/walked	627,084	625,299	1,252,382

5.5.2 Current Benefits

To the extent that bicycling and walking trips replace single-occupancy vehicle trips, they reduce emissions and have tangible economic impacts by reducing traffic congestion, crashes, and maintenance costs. In addition, the reduced need to own and operate a vehicle saves families money.

These benefits are shown in **Table 5-7.**

Table 5-7: Benefits of Current Bicycling and Walking Trips in Unincorporated Kern County

Variable	Bicycling	Walking	Source
Yearly miles bicycled/walked	627,084	625,299	Current Aggregate Demand Model results (See Table 5-7)
Air Quality Benefits			
Reduced Hydrocarbons (pounds/year)	1,880	1,875	EPA, 2005[15]
Reduced Particulate Matter (pounds/year)	14	14	EPA, 2005
Reduced Nitrous Oxides (pounds/year)	1,313	1,310	EPA, 2005
Reduced Carbon Monoxide (pounds/year)	17,143	17,094	EPA, 2005
Reduced Carbon Dioxide (pounds/year)	510,136	508,864	EPA, 2005
Economic Benefits of Air Quality			
Particulate Matter	$1,173	$1,170	NHTSA[16]
Nitrous Oxides	$2,627	$2,619	NHTSA
Carbon Dioxide	$8,746	$8,722	NHTSA
Reduced External Costs of Vehicle Travel			
Crashes/Traffic Congestion	$653,986	$351,753	"Crashes vs. Congestion - What's the Cost to Society?"[17]
Roadway Maintenance Costs	$286,118	$153,892	Development of a Pavement Maintenance cost Allocation Model. Institute of Transportation Studies[18]
Household Transportation Savings			
Reduction in HH transportation spending	$313,542	$312,649	IRS operational standard mileage rates for 2010[19]
Total	$1,266,192	$830,805	

5.5.3 Potential Future Walking and Bicycling Trips

Estimating future benefits requires additional assumptions regarding Kern County's future population and anticipated commuting patterns in 2030. Future population predictions determined in the *2011 Regional Transportation Plan RTP* were used in this model. **Table 5-8** shows the projected 2035 future demographics used in the analysis.

The bicycling and walking mode shares were taken from the KernCOG demand model for year 2035, and, unfortunately, was not calibrated to address the higher use potentially generated by the addition of new facilities and enhancements to the existing system. Additional population modeling and model calibration is likely required at some point to better reflect potential future conditions.

The "network completion factor" used in this analysis is the ratio of roadways with bikeway facilities as compared to the entire roadways network in the county. While many factors affect people's choice to bicycle and walk in a community, development of a network of bicycle lanes and other facilities is a key component of encouraging bicycling. The results of the model are shown in **Table 5-9**.

5.5.4 Future Benefits

The trip replacement factors remain the same as in the model of current trips. This analysis projects that the number of annual walking and bicycling trips in 2030 will be approximately 44.4 million, which will reduce 31 million annual vehicle trips. Additionally, the annual number of miles bicycled and walked is forecast to be 28.6 million in 2030. **Table 5-10** shows the annual air quality benefits of the future projected walking and bicycling trips in Kern County.

15 *From EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fule Consumption For Gasoline-Fueled Passenger Cars and Light Trucks." 2005*

16 *NHTSA Corporate Average Fuel Economy for MY 2011 Passanger Cars and Light Trucks, TableVIII-5 (http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.d0b5a45b55bfbe582f57529 cdba046a0/).*

Table 5-8: Projected Future (2030) Demographics

	2030 Projected Population	Source
Population	362,860	2004 KernCOG RTP, DOF estimates
Employed population	201,990	2004 KernCOG RTP, DOF estimates
School population, K-12	72,572	Assumes same percent as from ACS
College student population	17,569	Assumes same percent as from ACS

Table 5-9: Future (2030) Walking and Bicycling Trips

Variable	Bike	Walk	Source
Future Mode share			
Projected commuting mode share	1.1%	0.6%	KernCOG Demand Model, 2035 estimates
Projected school children mode share	3.6%	20.0%	Based on network completion factor
Projected estimated college mode share	3.6%	3.7%	Based on network completion factor
Future Walking and Bicycling Trips			
Bicycle/walking commuters	7,194	7,421	Employed population multiplied by mode split
Weekday bicycle/walking commuter trips	14,389	14,843	Number of bicycle/walking commuters multiplied by two for return trips
K-12 bicycle/walking commuters	2,584	14,511	School children population multiplied by mode split
Weekday K-12 bicycle/walking trips	5,169	29,021	Student trips multiplied by two for return trips
College bicycle/walking commuters	626	646	College population multiplied by mode split
Weekday bicycle/walking college trips	1,252	1,291	Number of college student bicyclists multiplied by two for return trips
Daily adult bicycle/walking utilitarian trips	15,640	16,134	Number of commuting bicycle/walking trips plus number of bicycle/walking college trips
Daily bicycle/walking utilitarian trips	26,893	33,978	Number of utilitarian bicycle/walking trips multiplied by bicycle/walking utilitarian trip multiplier, spread over entire week (vs. commute trips over 5 days)
Future Daily Walking and Bicycling Trips	24,496	56,715	Sum of weekday bicycle/walking commuter trips, student/college trips, and utilitarian trips
Future Walking and Bicycling Trip Replacement			
Replaced Vehicle Trips per Weekday	32,446	64,577	Total trips multiplied by drive alone trips to determine automobile trips replaced by bicycle/walking trips
Reduced Vehicle Miles Traveled per Weekday	77,619	43,834	Number of vehicle trips reduced multiplied by average bicycle/walking work trip length (NHTS 2009)
Yearly Results			Total
Yearly bicycle/walking trips	13,957,431	30,518,556	44,475,987
Yearly vehicle trips reduced	10,275,753	20,798,608	31,074,361
Yearly miles bicycled/walked	21,634,018	7,019,268	28,653,285

Table 5-10: Benefits of Future Bicycling and Walking Trips

	Bicycling	Walking	Source
Yearly vehicle miles bicycled/walked	21,634,018	7,019,268	Aggregate Demand Model results
Air Quality Benefits			
Reduced Hydrocarbons (pounds/year)	64,766	20,625	EPA, 2005[15]
Reduced Particulate Matter (pounds/year)	482	154	EPA, 2005
Reduced Nitrous Oxides (pounds/year)	45,232	14,410	EPA, 2005
Reduced Carbon Monoxide (pounds/year)	582,862	188,034	EPA, 2005
Reduced Carbon Dioxide (pounds/year)	17,574,185	5,595,524	EPA, 2005
Economic Benefits of Air Quality			
Particulate Matter	$40,410	$12,870	NHTSA[16]
Nitrous Oxides	$90,500	$28,809	NHTSA
Carbon Dioxide	$301,300	$95,942	NHTSA
Reduced External Costs of Vehicle Travel			
Crashes/Traffic Congestion	$22,529,817	$3,869,283	"Crashes vs. Congestion - What's the Cost to Society?"[17]
Roadway Maintenance Costs	$9,856,765	$1,692,812	Development of a Pavement Maintenance cost Allocation Model. Institute of Transportation Studies[18]
Household Transportation Savings			
Reduction in HH transportation spending	$36,959,962	$312,649	IRS operational standard mileage rates for 2010[19]
Total	$43,620,313	$6,012,365	

17 *"Crashes vs. Congestion - What's the Cost to Society?"http://www.aaanewsroom.net/Assets/*

*Development of a Pavement Maintenance cost Allocation of California, Davis (http://pubs.its.ucdavis.edu/publication_*

18 *Kitamura, R., Zhao, H., and Gubby, A. R (1989). Model. Institute of Transportation Studies - University detail.php?id=19).$0.08/mile (1989), adjusted to 2010 dollars using the Bureau of Labor Statistics Inflation Calculator (http://www.bls.gov/data/inflation_ calculator.htm).*

19 *AAA 2008 Files/20083591910.CrashesVsCongestionFullRe*

1.1.1 Bicycle Mode Share Increases in Representative Cities

Cities from coast to coast are realizing that with rising numbers of bicyclists, annual crash statistics go down. The safest infrastructure for bicyclists is more bicyclists, but to get started, cities need to invest in facilities that make motorists, bicyclists, and pedestrians aware that they have a safe and dedicated space to ride on the road.

There are numerous studies from cities throughout the United States that show measurable increases in bicycle mode share as a result of investment in bicycle infrastructure.

The City of Davis, CA has experienced an increase in bicycle ridership with the expansion of its bicycle network. Davis has historically had some of the highest bicycle mode shares seen throughout the United States, which is directly related to the City's commitment to providing bicycle facilities. The City began implementing bicycle facilities in the 1960's and today has 50 miles of bike lanes (95% of arterial streets) and 50 miles of Class I bike paths, all in a city of ten square miles. By 1980, the city

had a bicycle mode share of 23 percent. However, in recent years Davis has seen a shift in funding toward motorized transportation, such as in the form of parking garages and transit incentives. As such, bicycle mode share dropped to 14 percent in 2000. [20]

When Portland, OR significantly increased its mileage of bicycle facilities, its bicycle mode share also drastically increased. According to the 2008 American Community Survey, 6.4 percent of commuters travel by bicycle. **Figure 5-13** displays the increase in daily bicycle trips in Portland as related to the expansion of the city's bikeway network. As shown, in 1992 Portland had 83 miles of bikeways and 2,850 associated daily bicycle trips as compared to 2008 with 274 miles of bikeways and 16,711 daily bicycle trips.[21]

Tucson, AZ has not only seen an increase in overall ridership, but has also experienced an increase in female bicyclists, a common measure of a city's bicycle friendliness. Previously, Tucson mirrored national trends with only 1 in 4 bicyclists being female (26.5% of bicyclists). 2010 American Community Survey data indicates a big shift with more than 1 in 3 bicyclists being female (35% of bicyclists).[22]

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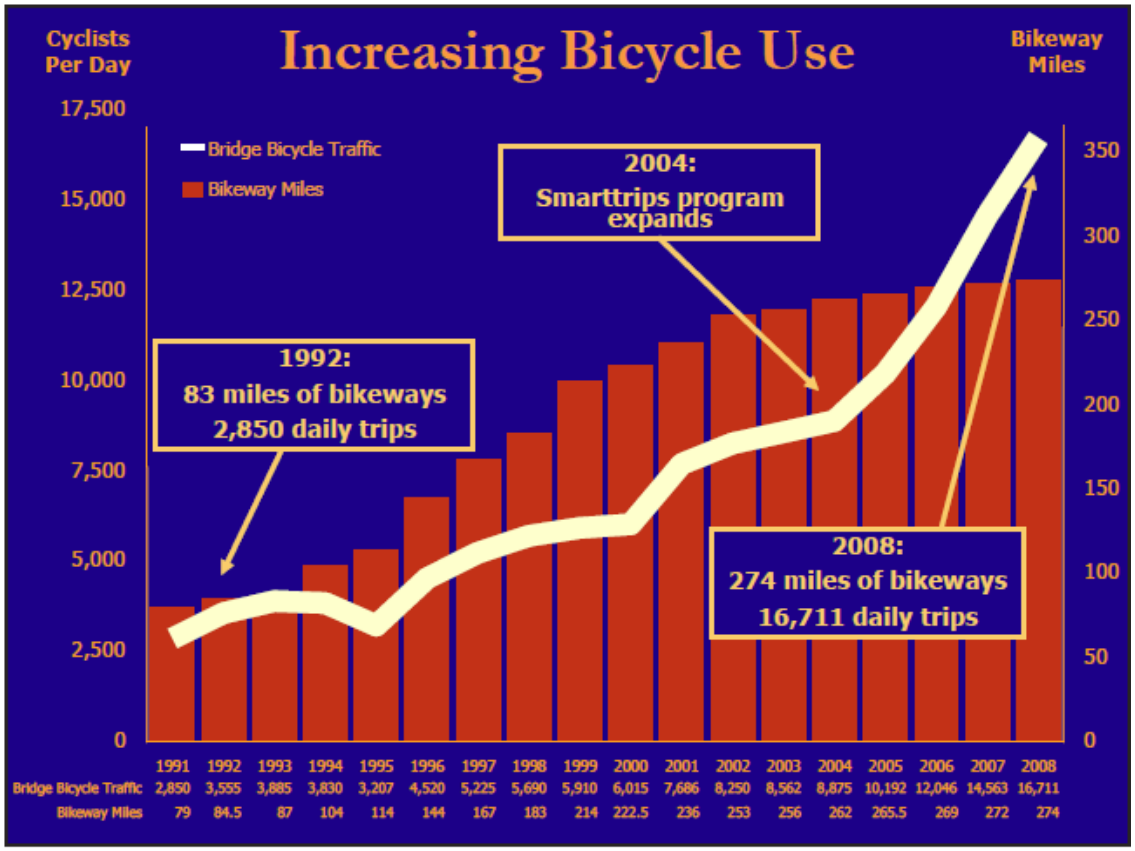
20 *Buehler and Handy, "Fifty years of bicycle policy in Davis, CA*

21 *http://www.ibpi.usp.pdx.edu/media/portlandbikestory.pdf*

22 *http://cms3.tucsonaz.gov/media/6142*

Figure 5-13: Increasing Bicycle Use in Portland, OR, 1991-2008



Source: Initiative for Bicycle and Pedestrian Innovation

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6. Funding and Implementation

This chapter is intended to support the implementation of this Plan's recommendations by providing the following information:

- An overview of past bicycle-related expenditures.
- Description and results of the prioritization process for the proposed bicycle network.
- An overview of the implementation strategies for the proposed bicycle network.
- An overview of funding sources that the County should pursue.

6.1 Past Expenditures

Table 6-1 presents bicycle-related expenditures in Kern County from 2006 through planned expenditures in 2015, totaling to $5,267,287. Of the total County expenditures, $1,481,000 will have been spent for projects in unincorporated Kern County.

6.2 Project Prioritization

This section outlines the prioritization methodology for the bikeway network recommendations. The purpose of the ranking process is to create a prioritized list of projects for implementation. The project list and ranking are flexible concepts that serve as guidelines to the implementation process. The list may change over time due to changing bicycle patterns, implementation opportunities and constraints, and the development of other transportation system facilities.

The following criteria are used to evaluate each proposed bicycle facility, its ability to address demand and deficiencies in the existing bicycle network and its ease of implementation. The criteria are organized into "utility" and "implementation" prioritization factors.

6.2.1 Utility Prioritization Factors

Utility criteria include conditions of bicycle facilities that enhance the bicycle network. Each criterion is discussed below.

Gap Closure

Gaps in the bicycle network come in a variety of forms, ranging from a "missing link" on a roadway to larger geographic areas without bicycle facilities. Gaps in the bikeway network discourage bicycle use because they limit access to key destinations and land uses. Facilities that fill a gap in the existing and proposed bicycle network are of high priority.

Connectivity to Existing Facilities

Proposed bikeways that connect to existing bicycle facilities in Kern County increase the convenience of bicycle commuting. Proposed facilities that fit this criterion are of high importance to the County.

Connectivity to Planned Facilities in the Incorporated Cities

Connecting the regional bicycle network to the existing and planned facilities within the incorporated cities of Kern County is very important to enhance bicycle travel in the County. The incorporated cities' planned bikeways will eventually become existing bicycle facilities and thus facilities that link to them will enhance future connectivity.

Connectivity to Activity Centers

Activity centers include major commuter destinations, like commercial and employment centers, as well as recreational facilities. These locations generate many trips which could be made by bicycle if the proper facilities were available. Bicycle facilities on roadways that connect to activity centers are of priority to the Kern County.

Table 6-1: Past Bicycle Expenditures

Year	Jurisdiction	Project	TDA-3 Funds	TEA Funds
2006	Arvin	Bike Safety Program	$1,000	
2006	Arvin	Bike Rack	$1,000	
2007	Arvin	Scamore Bike Lanes	$170,384	
2006	Bakersfield	Bike Locker	$2,400	
2007	Bakersfield	Millcreek Bike Path	$263,000	
2009	Bakersfield	Bernard Street Bike Lanes	$18,800	
2009	Bakersfield	Auburn Street Bike Lanes	$23,400	
2009	Bakersfield	Olive Drive Bike Lanes	$50,100	
2011	Bakersfield	Bike Lane on White Lane from Union to South H Street	$34,300	
2011	Bakersfield	Bike Lane on Hughes Lane from White Lane to Wilson Road	$360,000	
2011	Bakersfield	Bike Lane on Monitor from Hoskings to East Pacheco Road	$671,100	
2007	California City	Bike Safety Program	$1,000	
2010	Indian Wells Valley	Brown Rd 36' Minimum Width	N/A	N/A
2005	Kern County (Unincorporated)	Lake Isabella Bike Lane		$245,000
2009	Kern County (Unincorporated)	Browning Road Bike Lanes (Delano Area)	$170,000	
2009	Kern County (Unincorporated)	Oildale Bike Loop	$260,000	
2010	Kern County (Unincorporated)	Woodford-Tehachapi Road Bikepath and Striping	$140,000	
2011	Kern County (Unincorporated)	Oak Creek Path (Mojave)	$270,000	
2011	Kern County (Unincorporated)	Frazier Park Bicycle Path and other gap closing projects	N/A	N/A
2013-2015	Kern County (Unincorporated)	Antelope Run Bike Path		$396,000
2011	Maricopa	Bike Safety Program	$1,000	
2006	McFarland	Mast Ave Bikeway Facility	$109,400	
2009	Ridgecrest	Bowman Road Bike Path Rest Station	$140,481	
2009	Taft	Sunset Railway Rails to Trails Phase 2	$364,622	
2010	Taft	Hillard Street Bike Path		$317,000
2011	Taft	Bike Rack	$1,000	
2013-2015	Taft	Sunset Railway Rails-to-Trails Phase IV		$681,000
2006	Tehachapi	South Side Valley Boulevard Bike Path	$566,000	
2007	Tehachapi	Bike Safety Program	$1,000	
2007	Tehachapi	Bike Rack	$1,000	
2009	Tehachapi	Bike Rack	$1,000	
2009	Tehachapi	Bike Safety Program	$1,000	
2010	Tehachapi	Bike Rack	$1,000	
2006	Wasco	Bike Safety Program	$1,000	
2006	Wasco	Bike Locker	$2,400	
2011	Wasco	Bike Safety Program	$1,000	
Total Expenditures by Funding Source			$3,628,287	$1,639,000

Source: Kern Council of Governments, 2012

Connectivity to Schools

Since most school aged children are not old enough to obtain a drivers license, many students commute by bicycling. Providing proper bicycle facilities and access to schools can give children a safer commute and therefor is of high importance.

Safety

Bicycle facilities have the potential to increase safety by reducing the potential conflicts between bicyclists and motorists, which often result in collisions. Proposed facilities that are located on roadways with past bicycle-automobile collisions are important to the County.

Public Input

Kern County solicited public input through community workshops and an online survey. Facilities that community members identified as desirable for future bicycle facilities are of priority to the network because they address the needs of the public.

Steering Committee Staff Input

Bicycle facilities identified by the Kern County Bicycle Master steering committee members are identify as a priority. The steering committee members bring not only insight and knowledge from the Kern County communities they represent, but also expertise in engineering and planning fields within the County.

6.2.2 Implementation Prioritization Factors

Implementation criteria address the ease of implementing each proposed project. The specific criterion is discussed below.

Project Cost

Projects that are less expensive do not require as much funding as other projects and are therefore easier to implement. Projects that cost less are of higher priority to Kern County.

6.2.3 Project Ranking

Table 6-2 shows how the criteria described in the previous section translate into scores for project prioritization and ranking. Each project was scored according to its ability to meet the criteria listed under "description" in **Table 6-2.**

6.3 Phasing and Implementation Plan

The recommended bicycle network projects were prioritized based on the criteria defined in the previous section. **Table 6-3** presents the lists of projects ranked according to the weighted criteria. The County should implement these projects in the rough order of their prioritization, provided there is available funding. These rankings are not the final implementation order, but a guide to direct the County as funding and opportunities arise. For Class I bike paths that are located outside of the County's jurisdiction, this plan recommends that the responsible agency evaluate the proposed facility and prepare a feasibility study before such facilities can be recommended. The cost of the proposed network totals $27 million, with the on-street facilities comprising $12.3 million of the total cost.

6.3.1 Bikeway Network Implementation Plan

Table 6-4 presents the implementation and phasing plan for recommended bikeways in this Plan. Projects are organized into short-, mid-, and long-term, which is based on funding availability, programmed transportation improvements, elimination of immediate safety hazards or bottlenecks, and which facilities should be funded to grow the system in an orderly manner. The project phasing plan is defined as follows:

- Short-Term (1-5 years): considers projects with the highest priority scores and lowest costs, includes the majority of Class III projects that will not require alterations to the existing paved roadway.

Table 6-2: Project Prioritization Factors

Criteria	Score	Multi-plier	Total Possible Score	Description
Utility Prioritization Factors				
Gap Closure	2	3	6	Fills a network gap between two existing facilities
	1	3	3	Fills a network gap between an existing facility and a proposed facility
	0	3	0	Does not directly or indirectly fill a network gap
Connectivity, Existing	2	2	4	Direct access to an existing bicycle facility.
	1	2	2	Secondary access to an existing bicycle facility (1/4 mile)
	0	2	0	No direct access to an existing bicycle facility.
Connectivity, Planned	2	1	2	Direct access to a planned bicycle facility in an incorporated city.
	0	1	0	No direct access to a incorporated city planned bicycle facility.
Connectivity to activity Centers	2	3	6	Direct connection to a major trip-generating destination in Kern County (within 1/4 mile)
	1	3	3	Secondary connection to a major trip-generating destination in Kern County. (Within 1/2 of a mile)
	0	3	0	No connection to a major trip-generating destination in Kern County
Connectivity to Schools	2	3	6	Direct access to an educational facility (within a 1/4 mile).
	1	3	3	Secondary access to an educational facility (within 1/2 mile)
	0	3	0	No direct access to an educational facility
Public Input	2	3	4	Identified by the public as desirable for a future facility multiple times.
	1	3	2	Identified by the public as desirable for a future facility once.
	0	3	0	Not identified by the public as desirable for a future facility
Safety	2	2	4	Roadway that experienced three or more collisions in the last three years.
	1	2	2	Roadway that experienced one to two collisions in the last three years.
	0	2	0	Roadway that did not experience a collision in the last three years.
Steering Committee	2	3	6	Identified by Steering Committee as a priority Facility
	0	3	0	Not identified by Steering Committee as a priority
Implementation Prioritization Factors				
Project Cost	4	3	12	Project cost $0 - 30,000
	3	3	9	Project cost $30,000- $100,000
	2	3	6	Project cost $100,000 - $300,000
	1	3	3	Project cost $300,000 - $1,000,000
	0	3	0	Project cost $1,000,000+
			52	Maximum Potential Score

- Mid-Term (6-10 years): considers the majority of Class II projects that extend for 2.0 miles or more, projects that might require widening of existing roadway, and projects that costs between $100,000 and $400,000.
- Long-Term (11-20 years): considers all Class I projects and other Class II projects with the lowest priority scores and higher costs (above $400,000), as well as projects that might require acquisition of additional right-of-way for construction.

Certain recommended segment improvements were identified as necessary to meet an urgent short-term need within existing pavement widths, with an understanding that the eventual construction of additional roadway width in the form of paved shoulders or bike lanes should not preclude near-term implementation of Class III Bike Route signage where necessary. Examples include segments of Brown Road and Athel Avenue in the vicinity of Inyokern.

As envisioned Class III improvements are completed, those segments should be studied for conversion to Class II Bike Lanes where demand exceeds the near-term recommendation of Class III signage.

The phasing plan will guide project selection and implementation over the next 20 years. In addition, the input from the Steering Committee about the feasibility of implementing the high priority projects should be considered when determining the final implementation plan.

6.4 Funding Sources

Table 6-5 presents available funding sources that Kern County can pursue to implement the bikeway network presented in this plan. Funding programs are broken down by federal, state, and regional/ local sources.

The majority of these funding sources are only available for planning or capital costs. However, Kern County will also face maintenance costs with the implementation of its bikeways, specifically for off-street paths that require separate maintenance efforts. On-street facilities should not require any additional maintenance costs as they are part of the street network. Because most of the funding sources in **Table 6-5** do not cover maintenance costs, Kern County will need to find other sources of funding for ongoing operating and maintenance costs associated with the bicycle facilities. Alternative and innovative revenue sources for operating and maintenance expenses include the following:

- County Service Areas (CSAs): A CSA can be set up for small communities in unincorporated areas to provide a wide variety of services, including but not limited to park and recreation facilities. When a CSA exists, the property owner will pay taxes and fees to the CSA instead of the County for the services provided. [23]
- General Funds: Counties can use general funds to pay for bikeway projects and maintenance as they see fit.
- Community Service Districts: A CSD provides resources to and promotes the community, its people, and business concerns. It is also responsible for bringing basic services to unincorporated areas such as water, sewer, security, fire protection etc. There are several CSD's in Kern County and funds could potentially be used for the construction and maintenance of bicycle facilities.
- Property Taxes: Similar to the general fund, Counties can also use property taxes to fund the maintenance of bikeways.
- Trust Funds or Endowments: These can be managed by non-profit organizations or local commissions.
- Bond Measures: Communities can adopt

23 http://www.californiataxdata.com/pdf/CountyServiceArea.pdf

bond measures for funding of services in addition to capital-only costs. For example, the City of Eugene, OR has a street repair bond measure.

- Sales Tax Add-On Measures: Communities can approve sales tax increases to pay for desired projects, which can include maintenance costs. The County of Los Angeles, for example, created Measure R, a ½ cent sales tax increase, to pay for transportation improvements.
- Flexible State/Federal Funds: Many State/Federal revenue sources can be used for a wide variety of improvements. The County can direct applicable funds toward maintenance costs.
- Tax Increment Financing (TIF): TIF creates project funding by borrowing against the future increase in property-tax revenues associated with the community-improvement projects. Bike paths have been found to increase property values and thus their maintenance may be appropriately financed through TIFs.
- Local Improvement Districts (LIDs): The County could create LIDs (self-taxing districts) that could include funding for maintenance of off-street facilities.
- Reserve Account: The County can create a reserve account for maintenance of pathways either with a one-time deposit in the first year of each project or with smaller annual contributions over the course of the project lifespan.
- Adopt-a-Trail Program: Kern County can partner with community groups and agencies to participate in the Adopt-a-Trail program, in which the adopting group provides volunteers to maintain trails and pathways.
- Fundraising: In collaboration with non-profit organizations, the County can fundraise through campaigns to bring in bikeway maintenance funds. Events, such as music festivals, dinners, parties, festivals, benefit days, bike rides, raffles, and fairs can also generate revenues.
- Volunteer Opportunities: National days of service, such as Make a Difference Day and Earth Day, can provide volunteer laborers for path and trail maintenance. Organizations like Girl Scout and Boy Scout troops can also generate volunteers for maintenance.
- Payroll Deductions: Some organizations offer employees the opportunity to donate a portion of their paychecks to charitable organizations, such as trails associations.
- Donations: Private companies will often donate money for paths and trails in exchange for recognition on the facility. For example, some jurisdictions sell path amenities, such as benches and trees, with the donor's name featured on the amenity. Jurisdictions can also sell portions of the path and provide each buyer with a deed for their portion.

Table 6-3: Project Prioritization

Project ID	Location	Limit 1	Limit 2	Community	Class	Miles	Project Cost Estimate	Final Score
1	Wilson Avenue - Castaic Ave	Roberts Lane	North Chester Avenue	Bakersfield	NGS	1.9	$57,704	39
2	Sirretta Street	Burlando Road	Existing Class II	Kernville	NGS	1.0	$30,000	39
3	Flower Street	Owens Street	Mt Vernon Ave	Bakersfield	2	1.0	$30,496	38
4	Jeffrey Street	Loma Linda Drive	River Blvd	Bakersfield	NGS	0.7	$22,453	37
5	Landco Drive	Calloway Canal	Rosedale Highway	Bakersfiled	2	0.7	$21,472	36
6	Sierra Way	Valley View Drive	Cyrus Canyon Road	Kernville	3	2.2	$55,250	36
7	Country Club Drive - Horace Mann Ave- Pentz Street	College Ave	Center Street	Bakersfield	NGS	0.8	$24,235	36
8	Burlando Road	Rio Del Loma/Whiskey Flat Trailhead	Kernville Road	Kernville	NGS	2.1	$63,000	36
9	Brown Road	US 395	Ridgecrest Blvd	Indian Wells Valley	Paved Shoulders	8.2	$656,000	35
10	Brown Road	Athel Ave	US 395	Indian Wells Valley	Paved Shoulders	7.8	$624,000	35
11	Airport Drive	China Grade Loop	Roberts Lane	Bakersfield	2	1.3	$38,463	35
12	River Blvd	Panorama Drive	Bernard Street	Bakersfield	2	1.3	$38,644	35
13	Lake Isabella Blvd	Nugget Ave	Erskine Creek Road	Kern River Valley	2	2.2	$66,000	35
14	E Norris Road	Roberst Lane	N Chester Ave	Metropolitan Bakersfield	2	2.1	$63,668	35
15	Decatur Street	Sequoia Drive	Chester Ave	Bakersfield	NGS	0.8	$22,500	35
16	Brown Road	SR 14	US 395	Indian Wells Valley	3 Signage Only	20.0	$300,000	35
17	Brown Road	US 395 Northern overpass	US 395 Southern overpass	Indian Wells Valley	3 Signage Only	0.3	$3,750	35
18	Brown Road	US 395 Northern overpass	US 395 Southern overpass	Indian Wells Valley	Paved Shoulders	0.3	$20,000	35
19	Center Street/Rosewood Avenue	Shalimar Drive	Monica Street	Bakersfield	NGS	1.8	$52,696	34
20	Valencia Drive	College Ave	Pioneer Drive	Bakersfield	NGS	1.0	$30,207	34
21	McCray Street	Merle Haggard Drive	China Grade Loop	Bakersfield	2	1.0	$29,028	33
22	Knudsen Drive	Norris Road	Hageman Road	Bakersfiled	2	0.9	$26,225	33
23	Center Street	Oswell Street	Pesante Road	Bakersfield	NGS	0.8	$22,533	33
24	Niles Street	Virginia Street	Morning Drive	Bakersfield	2	3.5	$105,608	32

**Note: 1 = Bike Path, 2 = Bike Lane, 3 = Bike Route, NGS = Neighborhood Green Street*

Project ID	Location	Limit 1	Limit 2	Community	Class	Miles	Project Cost Estimate	Final Score
25	Edison Hwy	Washington Street	S Comanche Drive	Metropolitan Bakersfield	2	7.8	$235,092	32
26	Olive Drive	Victor Street	SR 99	Bakersfield	3	0.3	$7,000	32
27	Woodrow Ave	Roberts Lane	N Chester Ave	Bakersfield	NGS	1.8	$54,900	32
28	Day Ave	N Chester Ave	Manor Street	Bakersfield	2	0.5	$15,115	31
29	Old Farm Road	Palm Ave	Brimhall Road	Bakersfield	2	0.5	$15,010	31
30	Roberts Lane	Washington Ave	Standford Drive	Bakersfield	2	0.7	$21,808	31
31	Height Street	River Blvd	Haley Street	Bakersfield	NGS	0.5	$14,935	31
32	Springer Ave	S Downs Street	Norma St Parkway	Ridgecrest	2	0.5	$15,108	30
33	Pioneer Drive	Oswell Steet	Morning Drive	Bakersfield	2	2.0	$60,215	29
34	Shalimar Drive	Niles Street	Pioneer Drive	Bakersfield	NGS	0.5	$15,050	29
35	Old Farm Road	Good Place	Rosedale Hwy	Bakersfield	2	0.5	$15,280	28
36	Patton Way	Snow Road	Hageman Road	Bakersfield	2	1.8	$52,545	28
37	Roberts Lane	Norris Road	Washington Ave	Bakersfield	2	0.5	$15,303	28
38	Palm Ave (Country Breeze & Slikker Drive)	Old Farm Road	Country Breeze Place	Bakersfiled	2	1.7	$50,043	28
39	Pegasus Road	Merle Haggard Drive	Norris Road	Bakersfiled	2	1.8	$52,602	28
40	Kiddyland Drive	River Crosing	Alfred Harrel Hwy	County	2	0.3	$9,496	28
41	Jeffrey Street	Union Ave	River Blvd	Bakersfield	NGS	0.2	$6,000	28
42	Burlando Road	Kernville	Wofford Heights	Kernville & Wofford Heights	1	3.0	$1,212,000	27
43	Panama Road	Buena Vista Road	Weedpatch Hwy	Metropolitan Bakersfield	2	12.1	$362,866	27
44	Weedpatch Hwy	58 East Hwy	Panama Road	Metropolitan Bakersfield	2	6.0	$180,762	27
45	Brady Street	Inyokern Road (SR 178)	South China Lake Blvd	Ridgecrest	2	4.7	$139,785	27
46	S Downs Street	S China Lake Blvd	E Javis Ave	Ridgecrest	2	1.1	$33,296	27
47	202 Hwy	Bear Valley Road	Woodford Tehachapi Road	Golden Hills/ Tehachapi	2	5.7	$171,600	26
48	Giraudo Road	Pellisier Road	Bailey Road	Golden Hills/ Tehachapi	2	0.5	$15,300	26
49	Valley Blvd	Tucker Rd	Woodford Tehachapi Road	Golden Hills/ Tehachapi	2	1.5	$45,973	26
50	McCray Road	SR 178	Dogwood Road	Lake Isabella	2	0.4	$10,800	26
51	Cedar Street	Division Road	Tyler Street	Taft	2	0.4	$12,810	26

Project ID	Location	Limit 1	Limit 2	Community	Class	Miles	Project Cost Estimate	Final Score
52	Elm Street	Division Road	Harrison Street	Taft	2	0.5	$15,049	26
53	Lynch Canyon Drive	SR 178	Poplar Street	Lake Isabella	NGS	0.7	$19,500	26
54	Main Street	Panama Road	Di Giorgio Road	Arvin	2	1.0	$30,133	25
55	Airport Drive	Manor Street	W China Grade Loop	Bakersfield	2	1.0	$28,933	25
56	Enos Lane	Beech Ave	Panama Lane	Bakersfield	2	11.3	$340,061	25
57	Norris Road	Snow Road	Roberts Lane	Bakersfield	2	0.7	$21,252	25
58	Palm Ave	Heath Road	Renfro Road	Bakersfield	2	1.0	$30,064	25
59	Broadway	Orchard Avenue	Plains Avenue	Inyokern	2	0.5	$16,073	25
60	Drummond Ave	Jacks Ranch Road	Downs Street	Ridgecrest	2	1.0	$29,508	25
61	Olive Ave	Supply Row	Wood Street	Taft	2	0.3	$9,416	25
62	Sierra Way	Kernville Airport	SR 178	Lake Isabella	3	11.2	$279,274	25
63	Athel Ave	US 395	Brown Road	Indian Wells Valley	3 Signage Only	2.6	$39,000	25
64	Pesante Road	Cul-de-sac	Pioneer Drive	Bakersfield	NGS	1.0	$28,782	25
65	Kern River/Lake	Riverside Park	Wofford Heights Park	Kernville	1	4.3	$1,716,000	24
66	Golden Hills Blvd	Santa Barbara Drive	Highline Road	Golden Hills/ Tehachapi	2	1.1	$33,407	24
67	Wofford Road	Burlando Road	Hwy 155	Lake Isabella	2	2.0	$61,118	24
68	O Street	Inyo Street	Park Street	Mojave	2	0.4	$11,286	24
69	Springer Ave	College Heights Blvd	Gateway Blvd	Ridgecrest	2	1.0	$29,908	24
70	Asher Ave	Supply Row	South Street	Taft	2	0.5	$16,208	24
71	General Petroleum	2nd Street	Wood Street	Taft	2	0.4	$12,086	24
72	Bailey Road	Giraudo Road	Cummings Valley Road	Golden Hills/ Tehachapi	2	1.5	$45,000	23
73	Banducci Road	Comanche Point Rd	Pellisier Road	Golden Hills/ Tehachapi	2	2.5	$76,200	23
74	Bear Valley Road	202 Hwy	Proposed	Golden Hills/ Tehachapi	2	1.5	$44,400	23
75	Cummings Valley Road	Bailey Road	Bear Valley Road	Golden Hills/ Tehachapi	2	1.0	$30,600	23
76	Cummings Valley Road	Bailey Road	202 Hwy	Golden Hills/ Tehachapi	2	0.4	$12,000	23
77	Pellisier Road	Banducci Road	Giraudo Road	Golden Hills/ Tehachapi	2	2.0	$59,700	23
78	Ash Street	Emmons Park	Harrison Street	Taft	2	0.2	$6,423	23

Project ID	Location	Limit 1	Limit 2	Community	Class	Miles	Project Cost Estimate	Final Score
79	Hwy 155	Wofford Road	Lake Isabella Blvd	Lake Isabella	3	5.5	$137,741	23
80	Unknown Bike Path	Beardsley Ave	Kern River Parkway	Metropolitan Bakersfield	1	0.5	$211,080	22
81	Decatur Street	Airport Drive	Sequoia Drive	Bakersfield	2	0.3	$8,400	22
82	Mere Haggard Drive	South Granite Road	N Chester Ave	Bakersfield	2	1.0	$29,994	22
83	Rosamond Blvd	60th Street	Sierra Hwy	County	2	4.2	$127,398	22
84	Gilmore Ave	Mohawk Street	Standard Street	Metropolitan Bakersfield	2	1.0	$30,625	22
85	Weedpatch Hwy	Di Giorgio Road	E Bear Mountain Blvd	Taft	2	3.0	$90,395	22
86	N Chester Ave	Existing Bike Route	Mere Haggard Drive	Bakersfield	3	0.3	$6,531	22
87	Garlock Road	Redrock-Randsburg Road	US 395	Unincorporated	3	18.0	$450,000	22
88	Unknown Bike Path	Knudsen Drive	Hwy 99	Metropolitan Bakersfield	1	0.7	$270,321	21
89	Kelso Valley Road	SR 178	Adams Drive	Kern River Valley	2	1.8	$54,429	21
90	Inyo Street	K Street	O Street	Mojave	2	0.3	$8,917	21
91	K Street	Oak Creek Road	Inyo Street	Mojave	2	0.5	$13,542	21
92	Javis Ave	South China Lake Blvd	Norma St Parkway	Ridgecrest	2	1.8	$54,945	21
93	Division Road	Grevillea Street	Ash Street	Taft	2	0.7	$19,602	21
94	E Street	Harding Ave	10th Street	Taft	2	0.6	$18,043	20
95	Kelso Valley Rd/Kelso Valley Creek Road	SR 178	Loops back to SR 178	Kern River Valley	3	9.7	$242,500	20
96	Brimhall Road	Wegis Ave	Rudd Ave	Bakersfield	2	1.0	$30,102	19
97	Old River Road	Taff Hwy	Shafter Road	Bakersfield	2	3.0	$90,472	19
98	Old Town Road	Mariposa Road	Tehachapi Road	Golden Hills/ Tehachapi	2	0.7	$21,115	19
99	White Pine Drive	Tehachapi Road	Mariposa Road	Golden Hills/ Tehachapi	2	0.4	$10,995	19
100	Wooford Tehachapi Road	Valley Blvd	Highline Road	Golden Hills/ Tehachapi	2	1.0	$30,807	19
101	Jacks Ranch Road	Ridgecrest Blvd	Springer Ave	Ridgecrest	2	2.0	$60,789	19
102	Pico Street	S 6th Street	Asher Way	Taft	2	0.1	$4,072	19
103	Javis Ave Parkway	China Lake Blvd	S Downs St Parkway	Ridgecrest	1	1.2	$484,228	18
104	Sierra Hwy	Rosamond Blvd	LA County Line	County	2	3.0	$91,098	18
105	Airport Avenue	Mast Avenue	Proposed Woollomes Loop	Delano	2	2.7	$81,364	18

Project ID	Location	Limit 1	Limit 2	Community	Class	Miles	Project Cost Estimate	Final Score
106	Fairfax Road	E Brundage Lane	Panama Road	Metropolitan Bakersfield	2	6.0	$180,603	18
107	A Street	Arroyo Drive	Hilard Street	Taft	2	0.3	$7,627	18
108	Harding Ave	A Street	E Street	Taft	2	0.2	$6,885	18
109	Sierra Hwy	Rosamond Blvd	Silver Queen Road	Mojave	3	9.3	$232,461	18
110	Indian Wells Valley Parkway Trail	N Jacks Rancho Road	N Jacks Rancho Road	Ridgecrest	1	12.6	$5,050,600	17
111	Mast Avenue	Grace Hwy	Airport Ave	Delano	2	1.0	$30,028	17
112	Springer Ave	Jacks Ranch Road	Brady Street	Ridgecrest	2	1.0	$28,761	17
113	E Belle Vista Parkway	Gateway Blvd	Summit Street	Ridgecrest	3	0.4	$10,354	17
114	E Dolphin Ave	Gateway Blvd	Lumill Street	Ridgecrest	3	0.5	$12,775	17
115	Lake Ming Loop	Kern River Parkway	Campground Road	Bakersfield	1	2.6	$1,059,734	16
116	Kern River Parkway	Western end of Path	Lake Buena Vista	County	1	2.9	$1,149,318	16
117	Brae Burn Drive	Country Club Drive	College Ave	Bakersfield	2	0.6	$18,311	16
118	Brimhall Road	Enos Lane	Superior Road	Bakersfield	2	1.0	$30,046	16
119	Hageman Road	Wegis Ave	Nord Road	Bakersfield	2	0.5	$15,044	16
120	Kratzmeyer Road	Santa Fe Way	Enos Lane	Bakersfield	2	4.5	$134,538	16
121	Erskine Creek Road	Lake Isabella Blvd	Pasadena Lane	Lake Isabella	2	1.4	$43,111	16
122	Taft Hwy	Heath Road Extension	Buena Vista Road	Metropolitan Bakersfield	2	3.0	$90,144	16
123	S H Street	Taff Hwy	Shafter Road	Shafter	3	3.2	$79,714	16
124	Santa Fe Way	Driver Road	Riverside Street	Bakersfield	2	3.6	$107,637	15
125	Perkins Ave	Stradley Ave	S Garzoli Ave	McFarland	2	1.0	$29,964	15
126	Cedar Street	Harrison Street	Airport Road	Taft	2	1.6	$47,614	15
127	Grevillea Street	Division Road	Harrison Street	Taft	2	0.5	$14,902	15
128	Union Ave	Panama Road	Bear Mountain Blvd	Bakersfield	2	4.0	$120,472	14
129	Stradley Ave	Hwy 155	Sherwood Ave	Delano	2	6.0	$179,462	14
130	Standard Street	Rio Mirador Drive	Gilmore Ave	Metropolitan Bakersfield	2	1.1	$31,644	14
131	Shafter Ave	Sierra Ave (Shafter)	Kimberlina Road	Shafter	2	3.3	$98,304	14
132	E Ash Street	Adams Street	Airport Road	Taft	2	0.9	$28,055	14
133	Comanche Drive	E Panama Lane	Varsity Ave	Bakersfield	2	5.5	$165,861	13

Project ID	Location	Limit 1	Limit 2	Community	Class	Miles	Project Cost Estimate	Final Score
134	Nord Ave	Kratzmeyer Road	Stockdale Hwy	Bakersfield	2	4.5	$134,729	13
135	Cottonwood Road	E Panama Lane	Panama Road	Metropolitan Bakersfield	2	2.0	$60,071	13
136	E Panama Lane	Cottonwood Road	S Comanche Drive	Metropolitan Bakersfield	2	8.1	$241,634	13
137	Lake Woollomes Loop	Lake Woollomes	Lake Woollomes	Delano	1	5.3	$2,103,730	12
138	Sierra Hwy	Oak Creek Road	Purdy Ave	Mojave	1	2.4	$964,657	12
139	E Bear Mountain Blvd	S Comanche Drive	Weedpatch Hwy	Arvin	2	4.1	$122,921	12
140	Pond Road	Benner Ave	Stradley Ave	Delano	2	3.0	$90,926	12
141	Banducci Road	202 Hwy	Highline Road	Golden Hills/ Tehachapi	2	0.2	$6,326	12
142	Holt Street	Arroyo Avenue	Purdy Avenue	Mojave	2	3.0	$91,209	12
143	Kock Street	Arroyo Avenue	Purdy Avenue	Mojave	2	3.1	$91,652	12
144	Poplar Ave	Fresno Ave	Riverside Street	Shafter	2	2.0	$60,416	12
145	Riverside Street	Poplar Ave	Charry Ave	Shafter	2	2.5	$74,620	12
146	Bowman Road	Jacks Ranch Road	Brady Street	Ridgecrest	1	1.0	$390,821	11
147	Oak Creek Road	45th Street	K Street	Mojave	2	2.3	$69,453	11
148	Unknown Bike Path	Arrow Street	May Street	Metropolitan Bakersfield	1	0.6	$258,017	10
149	Bodfish Canyon Road	Lake Isabella Blvd	End of Road	Lake Isabella community	2	2.9	$87,895	10
150	Muller Road	Weedpatch Hwy	S Comanche Drive	Metropolitan Bakersfield	2	4.0	$120,704	10
151	Panama Road	Weedpatch Hwy	S Comanche Drive	Bakersfield	2	4.0	$121,471	9
152	Rudd Ave	Palm Ave	Brimhall Road	Bakersfield	2	0.5	$15,017	9
153	Sherwood Ave	Stradley Ave	S Garzoli Ave	Mcfarland	2	1.0	$29,962	9
154	Fresno Ave	Palm Ave	Shafter Ave	Shafter	2	4.1	$121,653	9
155	Magnolia Ave	McCombs Road	Kimbelina Road	Shafter	2	4.0	$120,847	9
156	Beech Ave	E Los Angeles	Enos Lane	Bakersfield	2	2.3	$69,707	8
157	Highline Road	Tucker Road	Banducci Road	Golden Hills/ Tehachapi	2	3.1	$91,833	8
158	Central Ave	Filburn Ave	Kimberlina Road	Shafter	2	1.5	$44,961	8
159	Palm Ave	Lupine Court	Kimberlina Road	Shafter	2	1.5	$45,200	8

Project ID	Location	Limit 1	Limit 2	Community	Class	Miles	Project Cost Estimate	Final Score
160	Riverside Street	Central Valley Hwy	Driver Road	Shafter	2	2.6	$78,394	8
161	Muller Road	S Owell Street	Weedpatch Hwy	Bakersfield	2	2.0	$60,100	6
162	40th St	Arroyo Avenue	Purdy Ave	Mojave	2	3.1	$91,749	6
163	Arroyo Ave	5th Street	Town Limits	Mojave	2	1.5	$45,250	6
164	Arroyo Ave	45th Street	58 Hwy	Mojave	2	1.9	$56,874	6
165	Butte Ave	5th Street	Town Limits	Mojave	2	1.5	$45,556	6
166	Camelot Blvd	45th Street	Holt Street	Mojave	2	1.6	$48,455	6
167	Denise Ave	5th Street	Town Limits	Mojave	2	1.5	$45,261	6
168	E Bear Mountain Blvd	S Union	Weedpatch Hwy	S Union Ave	2	5.0	$150,533	6
169	Palm Ave	Kimberlina Road	Fresno Ave	Shafter	2	3.0	$90,112	6
170	Buena Vista Blvd	S Union Ave	S Comanche Drive	Bakersfield	2	9.1	$272,446	3
171	5th Street	Rosewood Blvd	Purdy Ave	Mojave	2	5.1	$151,686	3
172	Purdy Ave	45th Street	Town Limits	Mojave	2	6.8	$205,323	3
173	Rosewood Blvd	Kyle Street	5th Street	Mojave	2	5.0	$150,730	3
174	Kimberlina Road	Magnolia Ave	Shafter Ave	Shafter	2	5.1	$151,833	3

Table 6-4: Bikeway Implementation Plan

Project ID	Location	Limit 1	Limit 2	Community	Class*	Miles	Project Cost Estimate	Final Score
Short-Term								
2	Sirretta Street	Burlando Road	Existing Class II	Kernville	NGS	1.0	$30,000	39
1	Wilson Avenue - Castaic Ave	Roberts Lane	North Chester Avenue	Bakersfield	NGS	1.9	$57,704	39
3	Flower Street	Owens Street	Mt Vernon Ave	Bakersfield	2	1.0	$30,496	38
4	Jeffrey Street	Loma Linda Drive	River Blvd	Bakersfield	NGS	0.7	$22,453	37
5	Landco Drive	Calloway Canal	Rosedale Highway	Bakersfiled	2	0.7	$21,472	36
7	Country Club Drive - Horace Mann Ave- Pentz Street	College Ave	Center Street	Bakersfield	NGS	0.8	$24,235	36
6	Sierra Way	Valley View Drive	Cyrus Canyon Road	Kernville	3	2.2	$55,250	36
8	Burlando Road	Rio Del Loma/Whiskey Flat Trailhead	Kernville Road	Kernville	NGS	2.1	$63,000	36
17	Brown Road	US 395 Northern overpass	US 395 Southern overpass	Indian Wells Valley	3 Signage Only	0.3	$3,750	35
18	Brown Road	US 395 Northern overpass	US 395 Southern overpass	Indian Wells Valley	Paved Shoulders	0.3	$20,000	35
15	Decatur Street	Sequoia Drive	Chester Ave	Bakersfield	NGS	0.8	$22,500	35
11	Airport Drive	China Grade Loop	Roberts Lane	Bakersfield	2	1.3	$38,463	35
12	River Blvd	Panorama Drive	Bernard Street	Bakersfield	2	1.3	$38,644	35
14	E Norris Road	Roberst Lane	N Chester Ave	Metropolitan Bakersfield	2	2.1	$63,668	35
13	Lake Isabella Blvd	Nugget Ave	Erskine Creek Road	Kern River Valley	2	2.2	$66,000	35
16	Brown Road	SR 14	US 395	Indian Wells Valley	3 Signage Only	20.0	$300,000	35
10	Brown Road	Athel Ave	US 395	Indian Wells Valley	Paved Shoulders	7.8	$624,000	35
9	Brown Road	US 395	Ridgecrest Blvd	Indian Wells Valley	Paved Shoulders	8.2	$656,000	35
20	Valencia Drive	College Ave	Pioneer Drive	Bakersfield	NGS	1.0	$30,207	34
19	Center Street/Rosewood Avenue	Shalimar Drive	Monica Street	Bakersfield	NGS	1.8	$52,696	34
23	Center Street	Oswell Street	Pesante Road	Bakersfield	NGS	0.8	$22,533	33
22	Knudsen Drive	Norris Road	Hageman Road	Bakersfiled	2	0.9	$26,225	33
21	McCray Street	Merle Haggard Drive	China Grade Loop	Bakersfield	2	1.0	$29,028	33
26	Olive Drive	Victor Street	SR 99	Bakersfield	3	0.3	$7,000	32

Note: 1 = Bike Path, 2 = Bike Lane, 3 = Bike Route, NGS = Neighborhood Green Street

Project ID	Location	Limit 1	Limit 2	Community	Class*	Miles	Project Cost Estimate	Final Score
27	Woodrow Ave	Roberts Lane	N Chester Ave	Bakersfield	NGS	1.8	$54,900	32
24	Niles Street	Virginia Street	Morning Drive	Bakersfield	2	3.5	$105,608	32
25	Edison Hwy	Washington Street	S Comanche Drive	Metropolitan Bakersfield	2	7.8	$235,092	32
31	Height Street	River Blvd	Haley Street	Bakersfield	NGS	0.5	$14,935	31
29	Old Farm Road	Palm Ave	Brimhall Road	Bakersfield	2	0.5	$15,010	31
28	Day Ave	N Chester Ave	Manor Street	Bakersfield	2	0.5	$15,115	31
30	Roberts Lane	Washington Ave	Standford Drive	Bakersfield	2	0.7	$21,808	31
32	Springer Ave	S Downs Street	Norma St Parkway	Ridgecrest	2	0.5	$15,108	30
34	Shalimar Drive	Niles Street	Pioneer Drive	Bakersfield	NGS	0.5	$15,050	29
33	Pioneer Drive	Oswell Steet	Morning Drive	Bakersfield	2	2.0	$60,215	29
41	Jeffrey Street	Union Ave	River Blvd	Bakersfield	NGS	0.2	$6,000	28
40	Kiddyland Drive	River Crosing	Alfred Harrel Hwy	County	2	0.3	$9,496	28
35	Old Farm Road	Good Place	Rosedale Hwy	Bakersfield	2	0.5	$15,280	28
37	Roberts Lane	Norris Road	Washington Ave	Bakersfield	2	0.5	$15,303	28
38	Palm Ave (Country Breeze & Slikker Drive)	Old Farm Road	Country Breeze Place	Bakersfiled	2	1.7	$50,043	28
36	Patton Way	Snow Road	Hageman Road	Bakersfield	2	1.8	$52,545	28
39	Pegasus Road	Merle Haggard Drive	Norris Road	Bakersfiled	2	1.8	$52,602	28
46	S Downs Street	S China Lake Blvd	E Javis Ave	Ridgecrest	2	1.1	$33,296	27
45	Brady Street	Inyokern Road (SR 178)	South China Lake Blvd	Ridgecrest	2	4.7	$139,785	27
44	Weedpatch Hwy	58 East Hwy	Panama Road	Metropolitan Bakersfield	2	6.0	$180,762	27
43	Panama Road	Buena Vista Road	Weedpatch Hwy	Metropolitan Bakersfield	2	12.1	$362,866	27
42	Burlando Road	Kernville	Wofford Heights	Kernville & Wofford Heights	1	3.0	$1,212,000	27
50	McCray Road	SR 178	Dogwood Road	Lake Isabella	2	0.4	$10,800	26
51	Cedar Street	Division Road	Tyler Street	Taft	2	0.4	$12,810	26
52	Elm Street	Division Road	Harrison Street	Taft	2	0.5	$15,049	26
48	Giraudo Road	Pellisier Road	Bailey Road	Golden Hills/ Tehachapi	2	0.5	$15,300	26

Project ID	Location	Limit 1	Limit 2	Community	Class*	Miles	Project Cost Estimate	Final Score
53	Lynch Canyon Drive	SR 178	Poplar Street	Lake Isabella	NGS	0.7	$19,500	26
49	Valley Blvd	Tucker Rd	Woodford Tehachapi Road	Golden Hills/ Tehachapi	2	1.5	$45,973	26
47	202 Hwy	Bear Valley Road	Woodford Tehachapi Road	Golden Hills/ Tehachapi	2	5.7	$171,600	26
61	Olive Ave	Supply Row	Wood Street	Taft	2	0.3	$9,416	25
59	Broadway	Orchard Avenue	Plains Avenue	Inyokern	2	0.5	$16,073	25
57	Norris Road	Snow Road	Roberts Lane	Bakersfield	2	0.7	$21,252	25
64	Pesante Road	Cul-de-sac	Pioneer Drive	Bakersfield	NGS	1.0	$28,782	25
55	Airport Drive	Manor Street	W China Grade Loop	Bakersfield	2	1.0	$28,933	25
60	Drummond Ave	Jacks Ranch Road	Downs Street	Ridgecrest	2	1.0	$29,508	25
58	Palm Ave	Heath Road	Renfro Road	Bakersfield	2	1.0	$30,064	25
54	Main Street	Panama Road	Di Giorgio Road	Arvin	2	1.0	$30,133	25
63	Athel Ave	US 395	Brown Road	Indian Wells Valley	3 Signage Only	2.6	$39,000	25
Mid-Term								
62	Sierra Way	Kernville Airport	SR 178	Lake Isabella	3	11.2	$279,274	25
56	Enos Lane	Beech Ave	Panama Lane	Bakersfield	2	11.3	$340,061	25
68	O Street	Inyo Street	Park Street	Mojave	2	0.4	$11,286	24
71	General Petroleum	2nd Street	Wood Street	Taft	2	0.4	$12,086	24
70	Asher Ave	Supply Row	South Street	Taft	2	0.5	$16,208	24
69	Springer Ave	College Heights Blvd	Gateway Blvd	Ridgecrest	2	1.0	$29,908	24
66	Golden Hills Blvd	Santa Barbara Drive	Highline Road	Golden Hills/ Tehachapi	2	1.1	$33,407	24
67	Wofford Road	Burlando Road	Hwy 155	Lake Isabella	2	2.0	$61,118	24
65	Kern River/Lake	Riverside Park	Wofford Heights Park	Kernville	1	4.3	$1,716,000	24
78	Ash Street	Emmons Park	Harrison Street	Taft	2	0.2	$6,423	23
76	Cummings Valley Road	Bailey Road	202 Hwy	Golden Hills/ Tehachapi	2	0.4	$12,000	23
75	Cummings Valley Road	Bailey Road	Bear Valley Road	Golden Hills/ Tehachapi	2	1.0	$30,600	23
74	Bear Valley Road	202 Hwy	Proposed	Golden Hills/ Tehachapi	2	1.5	$44,400	23
72	Bailey Road	Giraudo Road	Cummings Valley Road	Golden Hills/ Tehachapi	2	1.5	$45,000	23

Project ID	Location	Limit 1	Limit 2	Community	Class*	Miles	Project Cost Estimate	Final Score
77	Pellisier Road	Banducci Road	Giraudo Road	Golden Hills/ Tehachapi	2	2.0	$59,700	23
73	Banducci Road	Comanche Point Rd	Pellisier Road	Golden Hills/ Tehachapi	2	2.5	$76,200	23
79	Hwy 155	Wofford Road	Lake Isabella Blvd	Lake Isabella	3	5.5	$137,741	23
86	N Chester Ave	Existing Bike Route	Mere Haggard Drive	Bakersfield	3	0.3	$6,531	22
81	Decatur Street	Airport Drive	Sequoia Drive	Bakersfield	2	0.3	$8,400	22
82	Mere Haggard Drive	South Granite Road	N Chester Ave	Bakersfield	2	1.0	$29,994	22
84	Gilmore Ave	Mohawk Street	Standard Street	Metropolitan Bakersfield	2	1.0	$30,625	22
85	Weedpatch Hwy	Di Giorgio Road	E Bear Mountain Blvd	Taft	2	3.0	$90,395	22
83	Rosamond Blvd	60th Street	Sierra Hwy	County	2	4.2	$127,398	22
80	Unknown Bike Path	Beardsley Ave	Kern River Parkway	Metropolitan Bakersfield	1	0.5	$211,080	22
87	Garlock Road	Redrock-Randsburg Road	US 395	Unincorporated	3	18.0	$450,000	22
90	Inyo Street	K Street	O Street	Mojave	2	0.3	$8,917	21
91	K Street	Oak Creek Road	Inyo Street	Mojave	2	0.5	$13,542	21
93	Division Road	Grevillea Street	Ash Street	Taft	2	0.7	$19,602	21
89	Kelso Valley Road	SR 178	Adams Drive	Kern River Valley	2	1.8	$54,429	21
92	Javis Ave	South China Lake Blvd	Norma St Parkway	Ridgecrest	2	1.8	$54,945	21
88	Unknown Bike Path	Knudsen Drive	Hwy 99	Metropolitan Bakersfield	1	0.7	$270,321	21
94	E Street	Harding Ave	10th Street	Taft	2	0.6	$18,043	20
95	Kelso Valley Rd/Kelso Valley Creek Road	SR 178	Loops back to SR 178	Kern River Valley	3	9.7	$242,500	20
102	Pico Street	S 6th Street	Asher Way	Taft	2	0.1	$4,072	19
99	White Pine Drive	Tehachapi Road	Mariposa Road	Golden Hills/ Tehachapi	2	0.4	$10,995	19
98	Old Town Road	Mariposa Road	Tehachapi Road	Golden Hills/ Tehachapi	2	0.7	$21,115	19
96	Brimhall Road	Wegis Ave	Rudd Ave	Bakersfield	2	1.0	$30,102	19
100	Wooford Tehachapi Road	Valley Blvd	Highline Road	Golden Hills/ Tehachapi	2	1.0	$30,807	19
101	Jacks Ranch Road	Ridgecrest Blvd	Springer Ave	Ridgecrest	2	2.0	$60,789	19
97	Old River Road	Taff Hwy	Shafter Road	Bakersfield	2	3.0	$90,472	19

Project ID	Location	Limit 1	Limit 2	Community	Class*	Miles	Project Cost Estimate	Final Score
108	Harding Ave	A Street	E Street	Taft	2	0.2	$6,885	18
107	A Street	Arroyo Drive	Hilard Street	Taft	2	0.3	$7,627	18
105	Airport Avenue	Mast Avenue	Proposed Woollomes Loop	Delano	2	2.7	$81,364	18
104	Sierra Hwy	Rosamond Blvd	LA County Line	County	2	3.0	$91,098	18
106	Fairfax Road	E Brundage Lane	Panama Road	Metropolitan Bakersfield	2	6.0	$180,603	18
109	Sierra Hwy	Rosamond Blvd	Silver Queen Road	Mojave	3	9.3	$232,461	18
Long-Term								
103	Javis Ave Parkway	China Lake Blvd	S Downs St Parkway	Ridgecrest	1	1.2	$484,228	18
113	E Belle Vista Parkway	Gateway Blvd	Summit Street	Ridgecrest	3	0.4	$10,354	17
114	E Dolphin Ave	Gateway Blvd	Lumill Street	Ridgecrest	3	0.5	$12,775	17
112	Springer Ave	Jacks Ranch Road	Brady Street	Ridgecrest	2	1.0	$28,761	17
111	Mast Avenue	Grace Hwy	Airport Ave	Delano	2	1.0	$30,028	17
110	Indian Wells Valley Parkway Trail	N Jacks Rancho Road	N Jacks Rancho Road	Ridgecrest	1	12.6	$5,050,600	17
119	Hageman Road	Wegis Ave	Nord Road	Bakersfield	2	0.5	$15,044	16
117	Brae Burn Drive	Country Club Drive	College Ave	Bakersfield	2	0.6	$18,311	16
118	Brimhall Road	Enos Lane	Superior Road	Bakersfield	2	1.0	$30,046	16
121	Erskine Creek Road	Lake Isabella Blvd	Pasadena Lane	Lake Isabella	2	1.4	$43,111	16
123	S H Street	Taff Hwy	Shafter Road	Shafter	3	3.2	$79,714	16
122	Taft Hwy	Heath Road Extension	Buena Vista Road	Metropolitan Bakersfield	2	3.0	$90,144	16
120	Kratzmeyer Road	Santa Fe Way	Enos Lane	Bakersfield	2	4.5	$134,538	16
115	Lake Ming Loop	Kern River Parkway	Campground Road	Bakersfield	1	2.6	$1,059,734	16
116	Kern River Parkway	Western end of Path	Lake Buena Vista	County	1	2.9	$1,149,318	16
127	Grevillea Street	Division Road	Harrison Street	Taft	2	0.5	$14,902	15
125	Perkins Ave	Stradley Ave	S Garzoli Ave	McFarland	2	1.0	$29,964	15
126	Cedar Street	Harrison Street	Airport Road	Taft	2	1.6	$47,614	15
124	Santa Fe Way	Driver Road	Riverside Street	Bakersfield	2	3.6	$107,637	15
132	E Ash Street	Adams Street	Airport Road	Taft	2	0.9	$28,055	14
130	Standard Street	Rio Mirador Drive	Gilmore Ave	Metropolitan Bakersfield	2	1.1	$31,644	14

Project ID	Location	Limit 1	Limit 2	Community	Class*	Miles	Project Cost Estimate	Final Score
131	Shafter Ave	Sierra Ave (Shafter)	Kimberlina Road	Shafter	2	3.3	$98,304	14
128	Union Ave	Panama Road	Bear Mountain Blvd	Bakersfield	2	4.0	$120,472	14
129	Stradley Ave	Hwy 155	Sherwood Ave	Delano	2	6.0	$179,462	14
135	Cottonwood Road	E Panama Lane	Panama Road	Metropolitan Bakersfield	2	2.0	$60,071	13
134	Nord Ave	Kratzmeyer Road	Stockdale Hwy	Bakersfield	2	4.5	$134,729	13
133	Comanche Drive	E Panama Lane	Varsity Ave	Bakersfield	2	5.5	$165,861	13
136	E Panama Lane	Cottonwood Road	S Comanche Drive	Metropolitan Bakersfield	2	8.1	$241,634	13
141	Banducci Road	202 Hwy	Highline Road	Golden Hills/ Tehachapi	2	0.2	$6,326	12
144	Poplar Ave	Fresno Ave	Riverside Street	Shafter	2	2.0	$60,416	12
145	Riverside Street	Poplar Ave	Charry Ave	Shafter	2	2.5	$74,620	12
140	Pond Road	Benner Ave	Stradley Ave	Delano	2	3.0	$90,926	12
142	Holt Street	Arroyo Avenue	Purdy Avenue	Mojave	2	3.0	$91,209	12
143	Kock Street	Arroyo Avenue	Purdy Avenue	Mojave	2	3.1	$91,652	12
139	E Bear Mountain Blvd	S Comanche Drive	Weedpatch Hwy	Arvin	2	4.1	$122,921	12
138	Sierra Hwy	Oak Creek Road	Purdy Ave	Mojave	1	2.4	$964,657	12
137	Lake Woollomes Loop	Lake Woollomes	Lake Woollomes	Delano	1	5.3	$2,103,730	12
147	Oak Creek Road	45th Street	K Street	Mojave	2	2.3	$69,453	11
146	Bowman Road	Jacks Ranch Road	Brady Street	Ridgecrest	1	1.0	$390,821	11
149	Bodfish Canyon Road	Lake Isabella Blvd	End of Road	Lake Isabella community	2	2.9	$87,895	10
150	Muller Road	Weedpatch Hwy	S Comanche Drive	Metropolitan Bakersfield	2	4.0	$120,704	10
148	Unknown Bike Path	Arrow Street	May Street	Metropolitan Bakersfield	1	0.6	$258,017	10
152	Rudd Ave	Palm Ave	Brimhall Road	Bakersfield	2	0.5	$15,017	9
153	Sherwood Ave	Stradley Ave	S Garzoli Ave	Mcfarland	2	1.0	$29,962	9
155	Magnolia Ave	McCombs Road	Kimbelina Road	Shafter	2	4.0	$120,847	9
151	Panama Road	Weedpatch Hwy	S Comanche Drive	Bakersfield	2	4.0	$121,471	9
154	Fresno Ave	Palm Ave	Shafter Ave	Shafter	2	4.1	$121,653	9
158	Central Ave	Filburn Ave	Kimberlina Road	Shafter	2	1.5	$44,961	8

Project ID	Location	Limit 1	Limit 2	Community	Class*	Miles	Project Cost Estimate	Final Score
159	Palm Ave	Lupine Court	Kimberlina Road	Shafter	2	1.5	$45,200	8
156	Beech Ave	E Los Angeles	Enos Lane	Bakersfield	2	2.3	$69,707	8
160	Riverside Street	Central Valley Hwy	Driver Road	Shafter	2	2.6	$78,394	8
157	Highline Road	Tucker Road	Banducci Road	Golden Hills/ Tehachapi	2	3.1	$91,833	8
163	Arroyo Ave	5th Street	Town Limits	Mojave	2	1.5	$45,250	6
167	Denise Ave	5th Street	Town Limits	Mojave	2	1.5	$45,261	6
165	Butte Ave	5th Street	Town Limits	Mojave	2	1.5	$45,556	6
166	Camelot Blvd	45th Street	Holt Street	Mojave	2	1.6	$48,455	6
164	Arroyo Ave	45th Street	58 Hwy	Mojave	2	1.9	$56,874	6
161	Muller Road	S Owell Street	Weedpatch Hwy	Bakersfield	2	2.0	$60,100	6
169	Palm Ave	Kimberlina Road	Fresno Ave	Shafter	2	3.0	$90,112	6
162	40th St	Arroyo Avenue	Purdy Ave	Mojave	2	3.1	$91,749	6
168	E Bear Mountain Blvd	S Union	Weedpatch Hwy	S Union Ave	2	5.0	$150,533	6
173	Rosewood Blvd	Kyle Street	5th Street	Mojave	2	5.0	$150,730	3
171	5th Street	Rosewood Blvd	Purdy Ave	Mojave	2	5.1	$151,686	3
174	Kimberlina Road	Magnolia Ave	Shafter Ave	Shafter	2	5.1	$151,833	3
172	Purdy Ave	45th Street	Town Limits	Mojave	2	6.8	$205,323	3
170	Buena Vista Blvd	S Union Ave	S Comanche Drive	Bakersfield	2	9.1	$272,446	3

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Table 6-5: Funding Sources

Funding Source	Due Date	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants
Federally-Administered Funding					
National Scenic Byways Program	Varies by agency	Federal Highway Administration	$3 mil annually nationwide	20%	State agencies
Paul S. Sarbanes Transit in Parks and Public Lands Program	Varies, generally October	Federal Transit Administration	$27 mil in 2010	None	Federal, State, local and tribal agencies that manage federal lands
Rivers, Trails and Conservation Assistance Program	Aug 1 for the following fiscal year	National Parks Service	Staff time is awarded for technical assistance	Not applicable	Public agencies
Transportation, Community and System Preservation Program	Varies, generally January or February	Federal Transit Administration	$29 mil in 2012	20%	States, MPOs, local governments and tribal agencies
State-Administered Funding					
Bicycle Transportation Account	March	Caltrans	$7.2 mil ($1.8 per applicant)	Minimum 10% local match on construction	Public agencies
California Conservation Corps	On-going	California Conservation Corps	CCC donates labor hours	None	Federal and state agencies, city, county, school district, NPO, private industry
Community Based Transportation Planning Grants	March/April	Caltrans	$3 mil, each project not to exceed $300,000	10%	MPO, RPTA, city, county
Community Development Block Grants	Varies between grants	CA Department of Housing and Urban Development	Up to $500,000 per applicant	Varies between grants	"Non-entitlement" cities (under 50,000) and counties (under 200,000)
Environmental Enhancement and Mitigation Program	September/ October (sign up on website for notification)	California Natural Resources Agency	$10 mil	None	Federal, State, local agencies and MPO
Environmental Justice: Context-Sensitive Planning	March/April	Caltrans	$3 mil, each grant not to exceed $250,000	10%	MPO, RPTA, city, county

Planning	Construction	Other	Notes
X	X	X	NSB funds may be used to fund on-street or off-street facilities, intersection improvements, user maps and other publications. Projects must be located along a National Scenic Byway.
X	X		Funds transportation modes that reduce congestion in parks and public lands.
		X	RTCA staff provides technical assistance to communities so they can conserve rivers, preserve open space, and develop trails and greenways.
X	X	X	The program provides funding for a comprehensive initiative including planning grants, implementation grants, and research to investigate and address the relationships among transportation, community, and system preservation plans and practices.
X	X	X	Eligible projects must improve safety and convenience of bicycle commuters. In addition to construction and planning, funds may be used for right of way acquisition.
	X	X	CCC provides labor assistance on construction projects and annual maintenance.
	X		Eligible projects that exemplify livable community concepts including enhancing bicycle and pedestrian access.
X	X	X	Funds local community development activities such as affordable housing, anti-poverty programs, and infrastructure development. Can be used to build sidewalks, recreational facilities.
	X	X	EEMP funds projects in California, at an annual project average of $250,000. Funds may be used for land acquisition.
X		X	Funds projects that foster sustainable economies, encourage transit oriented and mixed use development, and expand transportation choices, including walking and biking. Projects can be design and education, as well as planning.

Funding Source	Due Date	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants
Habitat Conservation Fund	October	CA Department of Parks and Recreation	$2 mil (grants for trails usually under $200,000)	100%	City, county, district
Highway Safety Improvement Program	October	Caltrans	$75 mil in CA in 2011	Varies between 0% and 10%	City, county or federal land manager
Land and Water Conservation Fund	March	NPS, CA Dept. of Parks and Recreation	$1.7 mil	50% + 2-6% administration surcharge	Cities, counties and districts authorized to operate, acquire, develop and maintain park and recreation facilities
Office of Traffic Safety (OTS) Grants	January	Caltrans	Varies annually	None	Government agencies, state colleges, state universities, city, county, school district, fire department, public emergency service provider
Petroleum Violation Escrow Account	Not Applicable	Caltrans	Varies annually	None	Local and regional agencies
Public Access Program	On-going	Wildlife Conservation Board (WCB)	$1 mil, $200,000 per project	50% preferred	Federal, state, counties, cities, non-profit organizations or public districts and corporations
Recreational Trails Program	October	CA Department of Parks and Recreation	$2.1 mil in 2011	12%	Agencies and organizations that manage public lands
Safe Routes to School (California)	Varies	Caltrans	$24.25 mil	10%	City, county
Safe Routes to School (Federal)	Mid-July	Caltrans	$23 mil	None	State, city, county, MPOs, RTPAs and other organizations that partner with one of the above
State Coastal Conservancy	Rolling	State Coastal Conservancy	Varies	None	Public agencies, non-profit organizations
State Highway Operations and Protection Program (SHOPP)	Not Available	Caltrans	$1.69 mil statewide annually through FY 2013/14	Not Available	Local and regional agencies

Planning	Construction	Other	Notes
X	X	X	Provides funds to local entities to protect threatened species, to address wildlife corridors, to create trails, and to provide for nature interpretation programs which bring urban residents into park and wildlife areas.
X	X	X	Projects must address a safety issue and may include education and enforcement programs. This program includes the Railroad-Highway Crossings and High Risk Rural Roads programs.
X		X	Fund provides matching grants to state and local governments for the acquisition and development of land for outdoor recreation areas. Lands acquired through program must be retained in perpetuity for public recreational use. Individual project awards are not available. The Department of Parks and Recreation levies a surcharge for administering the funds.
		X	Funds safety improvements to existing facilities, safety promotions including bicycle helmet giveaways and studies to improve traffic safety.
	X	X	Funds programs based on public transportation, computerized bus routing and ride sharing, home weatherization, energy assistance and building energy audits, highway and bridge maintenance, and reducing airport user fees.
	X		Funds the protection and development of public access areas in support of wildlife oriented uses, including helping to fund construction of ADA trails.
X	X	X	Funds can be used for acquisition of easements for trails from willing sellers, maintenance, and education.
	X	X	SR2S is primarily a construction program to enhance safety of pedestrian and bicycle facilities near schools. A small percentage of funds can be used for programmatic improvements.
	X	X	Construction, education, encouragement and enforcement program to encourage walking and bicycling to school.
X	X	X	Projects must be in accordance with Division 21 and meet the goals and objectives of the Conservancy's strategic plan. More information can be found at http://scc.ca.gov/applying-for-grants-and-assistance/forms.
	X	X	Capital improvements and maintenance projects that relate to maintenance, safety and rehabilitation of state highways and bridges.

Funding Source	Due Date	Administering Agency	Annual Total	Matching Requirement	Eligible Applicants
Regionally-Administered Funding					
Congestion Mitigation Air Quality (CMAQ)	Not available	Kern Council of Governments	$1.8 mil nationally in 2009	None	Cities and counties
Resurfacing and Repaving (through existing funds)	Not applicable	County	Not applicable	Not applicable	Not applicable
TDA Article 3 funds	Not applicable	Kern Council of Governments	$75-85 mil	None	Cities and counties
Transportation Enhancements	Not available	Kern Council of Governments	$75 mil	Not available	Cities and counties
Other Funding Sources					
Bikes Belong Grant	Multiple dates throughout year	Bikes Belong	Not Available	50% minimum	Organizations and agencies
Community Action for a Renewed Environment	March	US EPA	Varies	Not Available	Applicant must fall within the statutory terms of EPA's research and demonstration grant authorities
Volunteer and Public-Private Partnerships	Not Applicable	City, county, joint powers authority	Varies	Not Applicable	Public agency, private industry, schools, community groups

Planning	Construction	Other	Notes
	X	X	Funds are allocated for transportation projects that aim to reduce transportation-related emissions. Funds can be used for construction of bicycle facilities and pedestrian walkways or for non-construction projects related to safe bicycling and walking (i.e. maps and brochures).
	X		Kern COG should take advantage of street resurfacing and repaving projects to stripe bicycle lanes or markings. These types of upgrades are low cost, but require coordination between Planning and Public Works departments,
X	X	X	Funds can be used for engineering expenses leading to construction, right-of-way acquisition, retrofitting existing bicycle facilities, route improvements, and purchase and installation of bicycle facilities.
X	X	X	Funds are a set-aside of Surface Transportation Program (STP) monies designated for Transportation Enhancement (TE) activities, which include the pedestrians and bicycles facilities, safety and educational activities for pedestrians and bicyclists, and the preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian and bicycle trails).
	X	X	Bikes Belong provides grants for up to $10,000 with a 50% match that recipients may use towards paths, bridges and parks.
X		X	Grant program to help community organize and take action to reduce toxic pollution in its local environment
	X	X	Requires community-based initiative to implement improvements.

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