Sacramento County

BICYCLE MASTER PLAN

April 2011

Prepared for:

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PLANNING + DESIGN

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EXECUTIVE SUMMARY

The Bicycle Master Plan is intended to guide and influence bikeway policies, programs and development standards to make bicycling in Sacramento County more safe, comfortable, convenient, and enjoyable for all bicyclists. The ultimate goal of this effort is to increase the number of persons who bicycle in Sacramento County for transportation to work, school, and errands, and for recreation.

The existing County of Sacramento County Bicycle Master Plan (SCBMP) was adopted in 1993 and is a joint document with the City of Sacramento. The Bicycle Transportation Act requires that local agencies complete a Bicycle Master Plan and update it every four years to qualify for grant funds issued by the California Department of Transportation through the Bicycle Transportation Account.

Updating the SCBMP required extensive public participation, through committees, workshops, and surveys. In addition to collecting video and GIS data, the public provided much of the user-level details and recommendations required to create a Plan update that would meet the needs of all County residents.

Sacramento County currently has 203.9 miles of existing bikeways. The network includes 72.3 miles of Class I bike paths, 122.2 miles of Class II bike lanes, and 9.4 miles of Class III bike routes.

The recommended bicycle network improvements include developing a continuous bicycle network that includes Class I, II, and III bikeways. The Plan includes a prioritized list of projects to implement these improvements. The Plan also includes provisions for monitoring and maintaining bikeways.

The total estimated cost to construct the recommended 1,326.3 miles of Class I, II, and III bikeways is $458.3 million. Estimated maintenance costs are $2.5 million.

1. INTRODUCTION

PURPOSE

The Bicycle Master Plan is intended to guide and influence bikeway policies, programs and development standards to make bicycling in Sacramento County more safe, comfortable, convenient, and enjoyable for all bicyclists. The ultimate goal of this effort is to increase the number of persons who bicycle in Sacramento County for transportation to work, school, and errands, and for recreation. The Bicycle Master Plan is developed to complement the Circulation Element of the Sacramento County General Plan (GP), which includes goals and policies to develop a balanced transportation system for automobiles, transit, bicycles, and pedestrians.

Bicycling is a low-cost, quiet, non-polluting, sustainable, and healthy form of transportation ideal for many trips. The individual benefits of bicycling include improved health through increased physical activity, stress reduction, and lower transportation costs. The social benefits of bicycling include improved air quality through reduced vehicular emissions, improved traffic, reduced use of non-renewable fuel resources, and reduced health care costs via a healthier population. Bicycling contributes to the Board of Supervisors' (BOS) goal of Sacramento County being a community that offers its citizens a variety of transportation choices, all with the goal of creating an amazing quality of life for our citizens.

BACKGROUND

The existing County of Sacramento Bicycle Master Plan was adopted in 1993 and is a joint document with the City of Sacramento. The Bicycle Transportation Act requires that local agencies complete a Bicycle Master Plan in order to qualify for grant funds issued by the California Department of Transportation through the Bicycle Transportation Account. The Bicycle Transportation Act requires that Bicycle Master Plans contain at a minimum 11 key elements as shown in Table 1. The Bicycle Transportation Act further requires that Bicycle Master Plans be updated every four years.

TABLE 1: CALIFORNIA BICYCLE TRANSPORTATION ACT (BTA) REQUIRED ELEMENTS

Required Bicycle Master Plan Elements per the California Bicycle Transportation Act (1994)	Location Addressed within the Bicycle Master Plan
A. Estimated number of existing and future bicycle commuters	Chapter 4
B. Map and description of land use and settlement patterns	Chapter 2, Figure 3
C. Map and description of existing and proposed bikeways	Chapter 4 Chapter 5 Maps at the end of Chapter 5 Appendix D
D. Map and description of bicycle parking facilities	Chapter 1 Chapter 4 Chapter 5 Figure 13
E. Map and description of multi-modal connections	Chapter 4 Figure 12
F. Map and description of facilities for changing and storing clothes and equipment	Chapter 1 Chapter 4 Figure 13
G. Description of bicycle safety and education programs	Chapter 4 Chapter 7
H. Description of citizen and community participation	Chapter 1 Appendix A
I. Description of consistency with transportation, air quality, and energy conservation plans	Chapter 2
J. Description of proposed bicycle projects and implementation priority	Chapters 5-6 Appendix G
K. Description of past expenditures and future financial needs for bicycle facilities	Chapter 4 Chapter 6

PUBLIC PARTICIPATION

Public participation was an important component of the Sacramento County Bicycle Master Plan (SCBMP) Update. The County solicited public input on existing bicycling conditions, potential roadways for improvements, crossing locations, and the types of support facilities or programs needed to improve bicycling in Sacramento County. The process relied on the "Advocacy Planning" approach. The goal of this approach is to develop a community supported vision for a comprehensive bikeway network and program that will facilitate biking for transportation and recreation purposes by enhancing bicyclist safety, comfort, and convenience. The planning process included the following committees and public outreach activities:

- **Bicycle Master Plan Bicycle Advisory Team (BAT)** – This committee was established to oversee the progress of the plan and to ensure community participation in the project. The BAT included representatives from:

  - Caltrans
  - City of Sacramento – DOT
  - Sacramento Area Bicycle Advocates
  - Sacramento Bicycle Kitchen
  - Sacramento City/County Bikeway Advisory Committee (SacBAC)
  - Sacramento Metropolitan Air Quality Management District

- **Bicycle Master Plan Technical Advisory Committee (TAC)** – This committee was comprised of relevant regional stakeholders that included public agencies such as neighboring jurisdictions and County agencies. The TAC reviewed the project scope and deliverables. Representation included members of the following agencies.
  - Caltrans
  - City of Folsom; Parks & Recreation Department
  - City of Sacramento – Bike Unit, Police Department
  - City of Sacramento – Department of Neighborhood Services
  - City of Sacramento – Department of Transportation
  - Los Rios Community College District
  - Sacramento Area Bicycle Advocates
  - Sacramento Area Council of Governments
  - Sacramento County – Department of Neighborhood Services
  - Sacramento County – Department of Parks and Recreation
  - Sacramento County – Department of Water Resources
  - Sacramento County – Municipal Services Agency
  - Sacramento County – Planning & Community Development Department
  - Sacramento County – SacDOT
  - Sacramento County – Waste Management & Recycling
  - Sacramento County Public Health Officer
  - Sacramento County Sheriff's Department
  - Sacramento Metropolitan Air Quality Management District

- Sacramento Metropolitan Fire District
- Sacramento Regional Transit District
- Sacramento State University

- **Public Workshop #1** – The initial set of public workshops for the SCBMP Update were held on February 14 in North Highlands, on February 20 in Arden Arcade/Carmichael, on February 21 in Rosemont/South Sacramento, and on March 19 in Fair Oaks. The purpose of these workshops was to gather feedback from County residents on desired routes and barriers to bicycle travel. Maps of the County's existing bikeway system were used for reference as attendees worked in small groups to identify their top bikeway recommendations. Appendix A includes a summary of comments received during the first round of workshops.

Members of the public mark-up maps at a first round public workshop

- **Public Opinion Survey** – A public opinion survey was developed that was distributed to the public via bike shops, local bike races, the project Web site, public workshops, and local bicycle clubs. The more than 500 survey respondents were primarily Sacramento County residents, but also included some bicyclists who live outside Sacramento County and ride in the County for either recreation or transportation purposes. Appendix A provides a summary of the survey findings.

- **Public Workshop #2** – A second set of public workshops was held at the Bradshaw Complex in Sacramento County on January 22, 2009 and in North Highlands on January 26, 2009. This meeting gave the public an opportunity to comment on a draft version of the Bicycle Master Plan Map and proposed bikeways. To the extent feasible, these comments have been incorporated into the SCBMP Update.

- **Web Page** – During the planning process, a project Web site (saccountybikeplan.webexone.com) provided document libraries, announcements, opportunities to provide public input, and draft materials.

SETTING

The County of Sacramento is one of the fastest growing regions in the state, having experienced significant economic and population growth over the past 10 years. The County has a current population of approximately 581,000, and many residents commute daily to downtown Sacramento.

Sacramento County is bisected by parts of five freeways: I-5, I-80, Capital City Freeway (Business 80), SR 99, and US 50. These facilities provide County residents with convenient access for longer automobile trips, but result in barriers to bicycle and pedestrian travel. The County is also bisected by the American River and four major railroad lines (UPRR East-West and North-South, Regional Transit Light

Rail (Folsom Corridor), and BNSF North-South) that have limited crossings. The American River corridor does provide a major Class I bicycle path.

The topography and climate of the County are ideal for bicycling. Most of the county is on level terrain. Weather is generally mild in winter and hot in summer. October through April is the rainy season and accounts for approximately 90 percent of the area's annual precipitation.

Incorporated cities in the County include the City of Sacramento, City of Elk Grove, City of Rancho Cordova, City of Folsom, City of Galt, City of Isleton, and City of Citrus Heights. Each jurisdiction has an adopted bikeway master plan or is in the process of completing one. These plans have been reviewed to ensure continuity between jurisdictions.

The Sacramento Area Council of Governments (SACOG) adopted the *Preferred Blueprint Scenario* in December 2004. The Blueprint is a vision for growth in the Sacramento region that promotes compact, mixed-use development and transportation choices, including bicycling. The vision is the product of a 3-year public involvement effort and is intended to guide land use and transportation choices over the next 50 years as the region's population grows. The County is in the process of updating the County General Plan, which includes most of the Blueprint ideals.

OPERATION OF BICYCLES/RULES OF THE ROAD

The California Vehicle Code (CVC) Division 11 contains the rules and regulations for operating a bicycle, commencing with Section 21200 through 21210. The CVC does not define bicycles as vehicles, but states that persons riding bicycles have all the rights and responsibilities of the drivers of vehicles. This means that bicycle riders must follow the basic traffic laws that all drivers follow, including but not limited to the following:

- Drive on the right side of the roadway
- Obey traffic control devices (signs, signals)
- Yield to cross traffic
- Yield when changing lanes
- Maintain speed positioning – The general principle is the slowest traffic stays right. Bicycles are typically slower than auto traffic and are therefore usually found on the right side of the road (or within a bike lane if provided). Bicycles may leave the right side of the road or a bike lane when they:
  - Overtake and pass another bicycle or vehicle proceeding in the same direction.
  - Find it reasonably necessary to avoid conditions (including but not limited to fixed or moving objects, vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes) that make it unsafe to continue along the right curb or edge.
- Maintain intersection positioning – At intersections, bicycles should travel in the right-most lane that leads to their destination. This means that if a bicycle is preparing to make a left turn, they may leave the right side of the road even if a bike lane is provided.

BIKEWAY TYPES

The California Vehicle Code permits bicycling on all streets. Some freeways and expressways do prohibit bicycle use. The *Streets and Highway Code Section 6 (890.4)* allows local agencies to designate "Bikeways," which are defined as facilities provided primarily for bicycle travel. Chapter 1000 of the Caltrans *Highway Design Manual* recognizes this when it states that the needs of non-motorized transportation are an essential part of all roadway projects. Although not all streets are designated as bikeways, they are all important facilities that ensure access and connectivity for cyclists.

The *Highway Design Manual* considers bikeways one element of an effort to improve bicycling safety and convenience – either to help safely accommodate motor vehicle and bicycle traffic on shared roadways, or to complement the road system to meet needs not adequately met by roads.

Following are the three distinct types of bikeways: off-street bike paths (Class I), on-street bike lanes (Class II) and on-street bike routes (Class III). These facilities are described below and shown in Figure 1.

Off-Street Bike Paths (Class I Bikeways)

Off-street bike paths are facilities located in a separate right of way, for the exclusive use of bicycles and pedestrians, with minimal cross flow by motor vehicles. Off-street bike paths are typically located within open space corridors along creeks, high voltage power line corridors and community/city-wide parks. They may also be located within paseos or greenways, which are landscape areas created for the purpose of providing important bicycle and pedestrian linkages between uses. Off-street bike paths offer important bicycle commuting opportunities, but on their own are not sufficient to fully support bicycle commuting because of limited connections to destinations. Off-street bike paths provide an important recreational amenity for bicyclists, pedestrians, dog walkers, runners, skaters, and other non-motorized forms of travel. Equestrians are, however, prohibited from using bike paths.

On-Street Bike Lanes (Class II Bikeways)

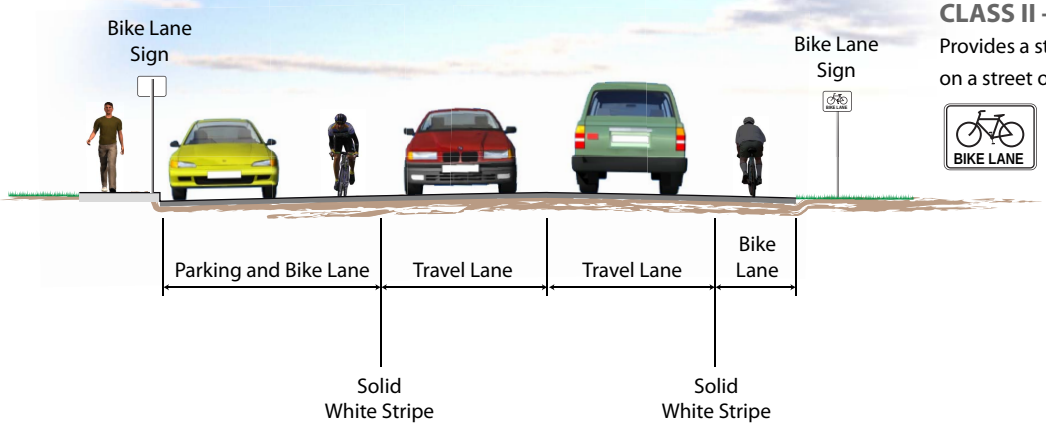
Bike lanes are areas within paved streets that are identified by striping and signs for preferential (semi-exclusive) bicycle use. Vehicle cross flow is generally permitted at intersections and driveways. Bike lanes provide a significant benefit to safe and efficient bicycle circulation. Conflicts between bikes and autos are reduced when on-street bike lanes are installed. Having separate identifiable areas on the street for bikes and autos places the travelers in more predicable locations. In Sacramento County, bike lanes are generally provided on collector and arterial roadways.

On-Street Bike Routes (Class III Bikeways)

Class III Bikeways are on-street routes intended to provide continuity to the bikeway system. Bike routes are usually established along through routes not served by Class I or II bike routes, or as an alternative to bicycling on busy streets. Bike routes are designated by signs or permanent markings and are shared by motorists. In Sacramento County, a limited number of mostly residential streets have been signed as bike routes.

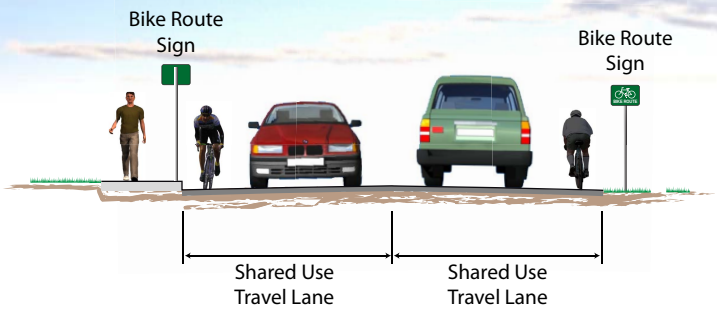
CLASS I - Multi-Use Path

Provides a completely separated right-of-way for exclusive use of bicycles and pedestrians with crossflow minimized.



CLASS II - Bike Lane

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



CLASS III - Bike Route

Provides a shared use with pedestrians or motor vehicle traffic, typically on lower volume roadways.

Bikeway Design Standards

Federal, State and local regulations that guide the development and design of bikeways in Sacramento County are listed below:

- The American Association of State Highway and Transportation Officials "Guide for the Development of Bicycle Facilities"
- The State of California Department of Transportation (Caltrans) *Highway Design Manual* Chapter 1000, "Bikeway Planning and Design"
- The California Manual on Uniform Traffic Control Devices (Cal-MUTCD)
- The County of Sacramento Design/Construction Standards
- Applicable Specific Plan guidelines that pertain to various areas of the County

BICYCLE SUPPORT FACILITIES

Every bicycle trip has two basic components: the route selected by the cyclist and the support facilities available at the destination. The support facilities include bicycle parking, shower and changing space, secure storage of bicycle gear, adequate lighting and appropriate signs.

Bike Parking

Secure and convenient bike parking is critical in the effort to encourage bicycling. All bike parking needs to be installed with consideration of protection from weather, theft and vandalism protection, gear storage, and, where appropriate, 24-hour access. Bike parking typically comes in two basic forms:

- **Bike Racks for Short Term Bicycle Parking.** Short term bike parking is typically provided via bike racks and is usually used when cyclists park their bicycles for a couple of hours or less. An example is a trip to the library or store. Bike racks should be placed close to the bicyclists' destinations in highly visible, illuminated locations. Bike racks should be installed with minimum clearances from walls, landscaping and driveways per manufacturer's specifications. Quality bike racks provide at least two points of contact with the bicycle and allow both frame and wheels to be locked. For special events, short term bicycle parking may be provided by valet bicycle parking.
- **Long Term Bicycle Parking.** Long term bike parking is typically provided at major employment sites, schools, and transportation terminals in the form of bike lockers, bike cages, or bike rooms. These facilities provide a higher level of security so bicyclists feel comfortable leaving their bicycles for long periods of time. Long-term parking should be fully protected from the weather. Bike lockers may be placed outdoors and some may be stacked to save space. Bike cages are fully enclosed and roofed areas with bicycle racks inside the enclosure with secure (limited) access, and are commonly located in parking garages or in outdoor areas. Bike rooms are secure, limited access rooms within a building dedicated for bicycle parking.

Refer to the Association of Pedestrian and Bicycle Professionals' *Bicycle Parking Guidelines* for additional information.

Showers and Locker Facilities

People are more likely to commute to work on bicycles if they have convenient access to showers and lockers. These types of bicycle support facilities are important factors in encouraging regular commuting via bicycle.

BICYCLIST TYPES

Bicycle riders vary in experience, skill, ability and confidence. The bikeway system and the type, location, and characteristics of bicycle facilities must consider the needs of a broad range of cyclists in order to adequately serve both transportation and recreational user groups. Specific categories of bicycle users are identified below. Regardless of the type of user, all bicycle facilities should be safe for all users.

Avid Bicycle Riders

Avid cyclists include both commuter and recreational bicyclists that are confident, skilled, and experienced. The availability of direct and continuous routes is important to avid bicycle riders. This group of cyclists prefers bike lanes, but will often choose to ride in the motor vehicle travel lane along routes without bicycle facilities, or when turning at intersections. Some cyclists in this group feel uncomfortable riding along high speed arterial streets even when bike lanes are provided. This group of cyclists will utilize off-street bike paths most often when the path provides a critical link through or around a more complex area such as a highway interchange.

Regular Bicycle Riders

Regular cyclists utilize bicycles on a regular basis provided that the destination is reasonably close and a convenient and comfortable bicycle route exists. The individuals in this group are usually working adults, college students, or mature high school students. These cyclists desire safe, comfortable, and efficient bikeways. Most cyclists in this group feel uncomfortable riding along high-speed arterial streets, even when bike lanes are provided. This type of cyclist comprises a large segment of the potential riders in Sacramento County.

Youth Bicycle Riders

Youth bicycle riders are usually in junior or senior high school and routinely ride to and from school, to visit friends, to the park, to shopping, and to other activities. This group has less experience negotiating traffic and is not always aware of potential hazards. This group prefers bike paths and bike lanes on low volume streets, but may ride on routes unsuitable to their ability.

Beginning Bicycle Riders

Beginning cyclists are typically elementary school-age children, but may include others who are learning to bicycle. They typically ride to and from school or other destinations only if the routes contain bike paths, sidewalks, or very low volume traffic streets. Beginning bike riders will typically not ride further than their immediate neighborhood, and are usually not allowed by their parents (or, if adults, do not have the skills) to cross major streets. Beginning bicycle rider skills and spatial awareness are not fully developed and most have limited bicycle experience, especially on roads.

2. RELATIONSHIP TO OTHER PLANS

INTRODUCTION

This chapter summarizes planning documents that describe existing conditions for bicyclists throughout Sacramento County and/or dictate how future infrastructure improvements will improve the County's bicycling conditions. These plans have been grouped into two categories: countywide plans, and regional plans. Sacramento County also benefited from bicycle user surveys in 2006, performed by the Sacramento Area Bicycle Advocates; these are also described at the conclusion of this chapter.

COUNTYWIDE PLANS

Sacramento County General Plan (1993)

The Sacramento County Board of Supervisors adopted the General Plan in 1993. The Plan establishes future planning in the County for a 20 year period. Included in the Plan are planning elements with policies and implementation measures. The most relevant elements to the Sacramento County Bicycle Master Plan are the Circulation, Land Use, and Open Space Elements. The subsequent sections provide more detail.

Sacramento County General Plan, Circulation Element (1993)

The 1993 Circulation Element stresses the importance of a balanced transportation system, including roadways, transit, and bicycle and pedestrian travel. Figure 2 shows the Circulation Element diagram. The adopted 1993 Bikeway Master Plan is called out in the Circulation Element as having bicycle policies and a detailed description of the detailed network and integrated into the General Plan's Goals and Implementation measures. The 2010 Bikeway Master Plan map is in the Circulation Element Chapter.

The General Plan describes Class I, II, and III bikeways consistently with the California Department of Transportation (Caltrans) standards and states that as of 1990, Sacramento County had 230 miles of on-street and 68 miles of off-street bikeways. Funding more bikeways is recognized as a way to decrease automobile use and energy consumption. Safety is also regarded as an issue; between 1971 and 1986 the number of bicycling collisions increased from 234 to 451, or 92.7 percent. Design and location of facilities, maintaining bike lanes, and educating bicyclists and drivers are stated as ways to improve safety.

The Goal of the General Plan's Transportation Policy is for:

- A balanced transportation system that moves people and goods in a safe and efficient way that minimizes environmental impacts, is supported by urban land uses, and serves rural needs.

To achieve this overarching goal, the Circulation Element includes policies and implementation measures. Some of these relate to bicycling and the Bicycle Master Plan. Policies relevant to the Bikeway Master Plan are stated below; the last goal incorporates the 1993 Bikeway Master Plan into the General Plan.

- Sacramento County shall conduct land use and transportation planning with a regional perspective.

- Sacramento County shall continue to seek secure financing for all components of the transportation system through the use of special taxes, assessment districts, developer dedications, or other appropriate mechanisms with an emphasis on expanding and operating the transit system, improving pedestrian and bicycle alternatives, increasing the use of clean alternative fuel and low emission vehicles, and maintaining the road system.

- Funding for development, operations, and maintenance of facilities for mass transit, bicycle, and pedestrian modes of transportation shall be given appropriate priority for transportation programs.

- Encourage transit, bicycle, and pedestrian projects when making decisions for the expenditure of discretionary local, state, or federal funds and in the Sacramento County Capital Improvement Program and the Congestion Management Plan.

- Sacramento County shall utilize design and development standards that support travel by transit, walking, bicycling, and clean alternative fuel and low emission vehicles.

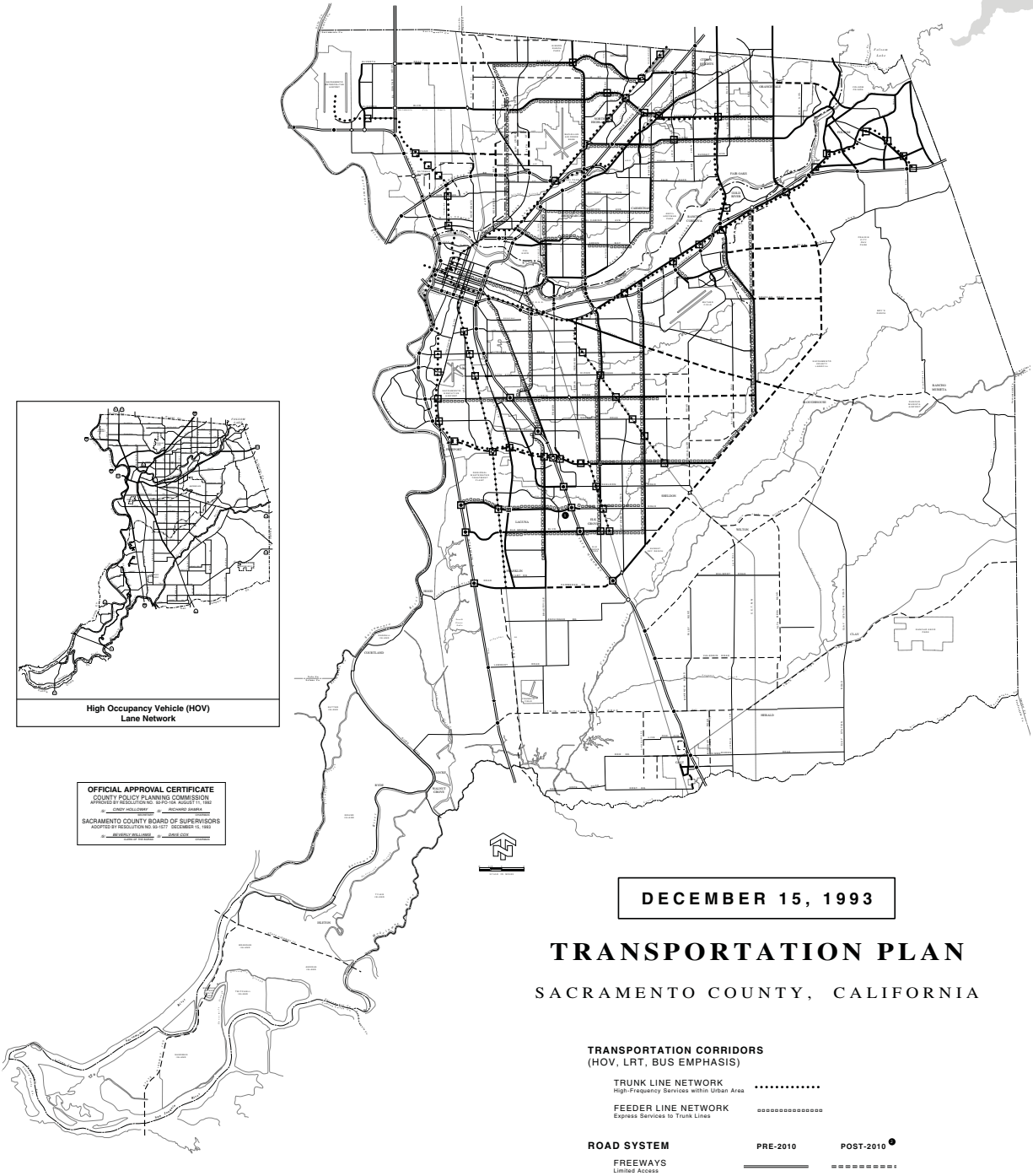
- Sacramento County shall expand the funding base for constructing and maintaining bicycle ways and facilities, including the Bikeways Master Plan, which is hereby incorporated into this General Plan.

Sacramento County General Plan, Land Use Element (1993)

The Land Use Element of the General Plan describes goals and implementation measures for development in the County. Figure 3 shows the General Plan Land Use Diagram. The overarching Land Use Element Goal is:

- “An orderly pattern of land use that concentrates urban development, enhances community character and identity through the creation and maintenance of neighborhoods, is functionally linked with transit, and protects the County's natural, environmental and agricultural resources.”

- Like the Circulation Element, a range of Objectives, Policies, and Implementation Measures are described in the Land Use Element to help meet the County’s goal. Within these statements, along with walking, bicycles are viewed as a preferred transportation mode in densely developed areas, where there is a balance of employment, services, housing types, and transit options.



High Occupancy Vehicle (HOV) Lane Network

OFFICIAL APPROVAL CERTIFICATE
COUNTY POLICY PLANNING COMMISSION
APPROVED BY RESOLUTION NO. 93-PC-104 AUGUST 11, 1993
CINDY HOLLOWAY — RICHARD DIAMIA
SACRAMENTO COUNTY BOARD OF SUPERVISORS
ADOPTED BY RESOLUTION NO. 93-1577 DECEMBER 15, 1993
BEVERLY WILLARD — DAVID DOW

DECEMBER 15, 1993

TRANSPORTATION PLAN

SACRAMENTO COUNTY, CALIFORNIA

TRANSPORTATION CORRIDORS
(HOV, LRT, BUS EMPHASIS)

TRUNK LINE NETWORK
High-Frequency Services within Urban Area

FEEDER LINE NETWORK
Express Services to Trunk Lines

ROAD SYSTEM	PRE-2010	POST-2010 ❶
FREEWAYS Limited Access		
THOROUGHFARES Normal Width 108', Normally 6 Lanes		
ARTERIALS Normal Width 84', Normally 4 Lanes		
URBAN AND RURAL COLLECTORS 2 Lanes		

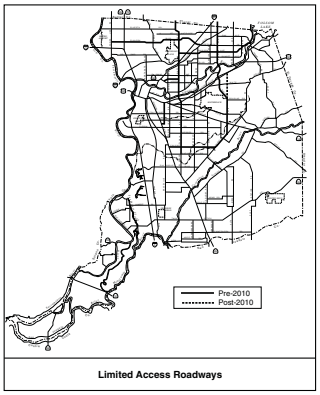
- EXISTING INTERCHANGE
- FUTURE INTERCHANGE
- FREEWAY TO FREEWAY INTERCHANGE
- EXISTING GRADE SEPARATION
- FUTURE GRADE SEPARATION
- EXISTING GRADE SEPARATION AND FUTURE INTERCHANGE
- FUTURE URBAN INTERCHANGE
- FUTURE 8 LANES X 8 LANES INTERSECTION
- PARK & RIDE
  (Exact location may vary within TOD areas. See Land Use Element for details)
- OFF-STREET BIKEWAY LANE

This map primarily shows roads with community-wide significance. Roads with more than two lanes that function as collectors by giving large development projects traffic access to the community-wide network may not be shown on the Transportation Plan.

Transportation network facilities outside Sacramento County or within the cities of Folsom, Isleton, Galt, and Sacramento are shown for informational purposes only and their designation on this Transportation Plan does not replace the adopted policies or decision making authority of the governing jurisdictions.

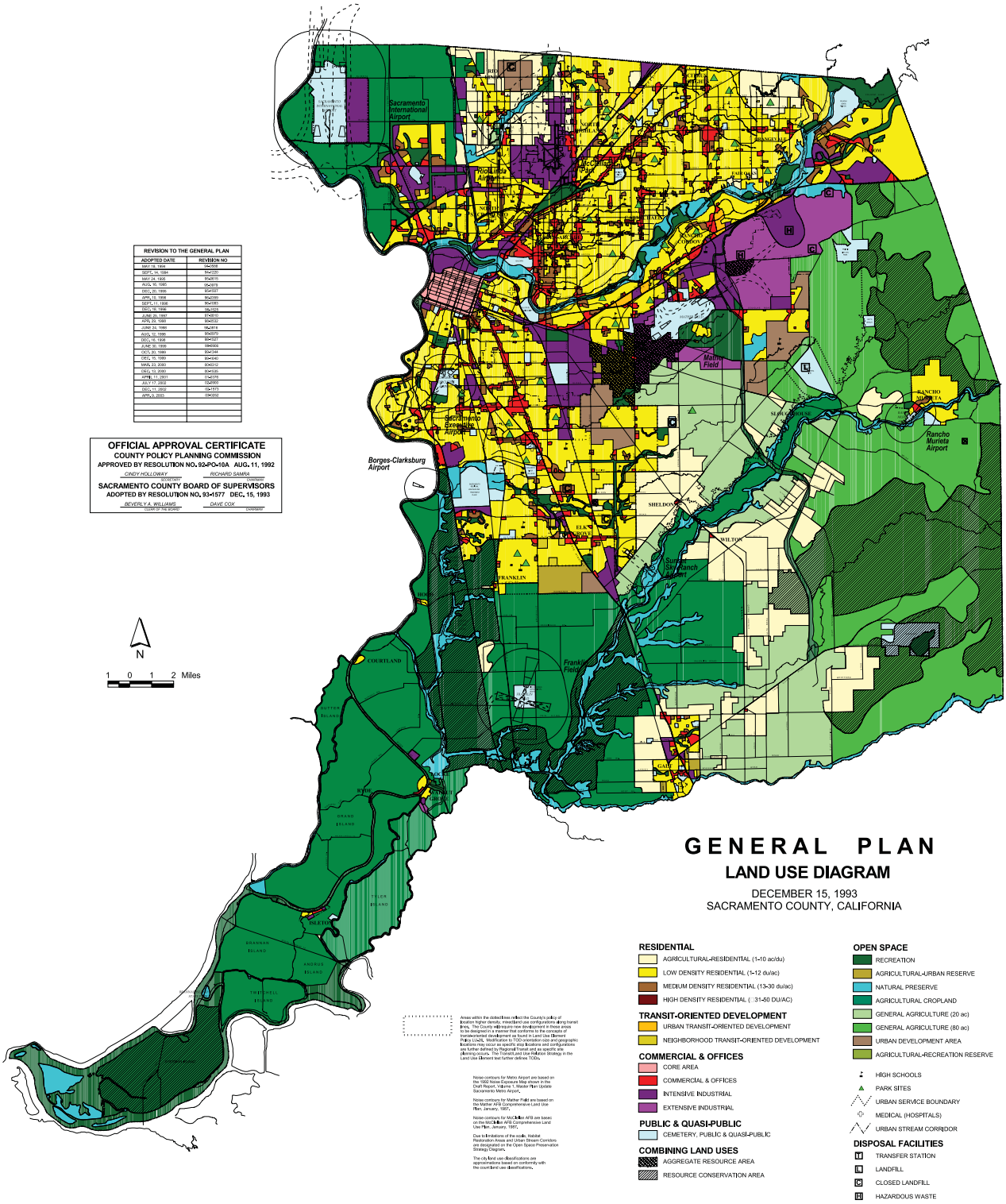
❶ Indicates special circumstance eight-lane thoroughfares. The specific segments of eight-lane roadway on the Map are:
a. Laguna Boulevard from Bruceville Road to Highway 99.

❷ The south area truck lines are alternatives. North of their crossing only one of the segments will be constructed. South of their crossing one or both segments may be constructed.



Limited Access Roadways

Prepared by the Sacramento County Planning Department - November 20, 2000



SACRAMENTO GENERAL PLAN (1993)
LAND USE DIAGRAM
FIGURE 3

Sacramento County General Plan, Open Space Element (1993)

The Open Space Element calls out the American River Parkway as an open space corridor example that connects open spaces. This element indicates a lack of opportunity for this type of facility in northeast and south Sacramento due to development patterns. However, the Land Use Element states the opportunity for these types of connections in the County's developing neighborhoods and is promoting a network of bicycle paths.

Sacramento County General Plan, Transit-Oriented Development Design Guidelines (1990)

Sacramento County offers a range of transit options that serve as, or potentially serve as nodes for, Transit-Oriented Design (TOD). The Sacramento Regional Transit District (RT) operates both bus and light rail systems, connecting most of the City of Sacramento with its outer suburbs. Amtrak operates one station in Sacramento County, on I Street in Downtown Sacramento.

The Sacramento TOD Guidelines define the surrounding areas around TODs by distance and land uses. "Primary Areas" are located in dense urban areas focused around commercial uses and surround or are adjacent to TODs. "Secondary Areas" are less densely developed and are more residential in nature. The Secondary Areas are just outside normal walking distances of transit stops. Because of the longer distance to transit stops from Secondary Areas, bicycling is an attractive transit stop access mode. The Design Guidelines state that Secondary Areas must provide multiple connections to transit stations for bicyclists without using arterial streets. By avoiding the increased chance of conflicts with motorists on arterials, bicycling to transit stops becomes more attractive.

TOD Provision of Bikeways

TOD bikeway guidelines are outlined to ease travel for bicyclists. The guidelines state that the secondary area roadways must provide bikeways that connect bicyclists to the commercial core, transit stops, and other desirable destinations. Bikeways should run along residential fronts, public parks, and commercial land uses. The preferred routes for bicyclists are residential roadways with low vehicle traffic volume. Marked bikeways are not required.

TOD Bicycle Parking

The TOD Design Guidelines state that transit stops, commercial areas and other destinations of interest must provide adequate bicycle parking to encourage bicycle use. Figure 4 shows a diagram from the TOD Design Guidelines of bike parking at a transit stop. Secure and safe bicycle storage areas, such as bike lockers, bike racks, or attended bike valet services are recommended.

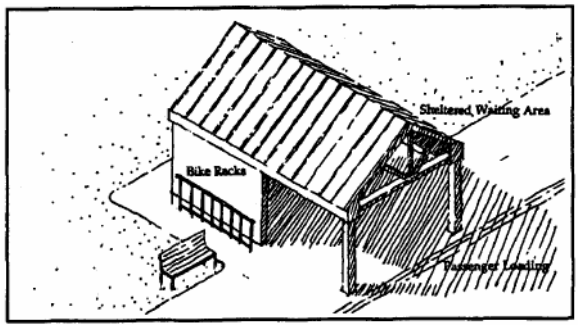


Figure 4 – Bike Parking at a Transit Stop

Draft Sacramento County General Plan Update (2009)

Sacramento County's General Plan is undergoing an update. The Draft Plan process began in 2005 and is currently in the environmental review process in cooperation with the Department of Environmental Review and Assessment. The General Plan update will cover the 2005-2030 planning cycle. The schedule calls for the Plan's adoption in winter 2009.

Draft Sacramento County General Plan, Circulation Element (2009)

The Circulation Element provides the framework for Sacramento County decisions concerning the countywide transportation system. Figure 5 shows the General Plan's Circulation Map. The main theme is "to provide mobility through choices…so that residents of Sacramento County have access to multiple viable and efficient transportation alternatives." Within the element, the Transportation Policy Plan discusses goals, policies, and implementation programs to meet this ideal.

Mobility

The mobility portion of the plan highlights the benefits of a transportation system beyond efficient movement of people and goods. Opportunities for bicycling can increase physical activity (encouraging recreational exercise) and help to convert vehicle trips to bicycling trips (reducing vehicle emissions). These outcomes help combat health problems related to obesity and air pollution.

The mobility portion also discusses the need for land use and transportation decisions to be made in concert to develop systems that provide current and future residents with choices regarding moving safely and freely within their communities. With respect to bicycling, the plan creates the following implementation measures to provide a balanced and interconnected transportation system.

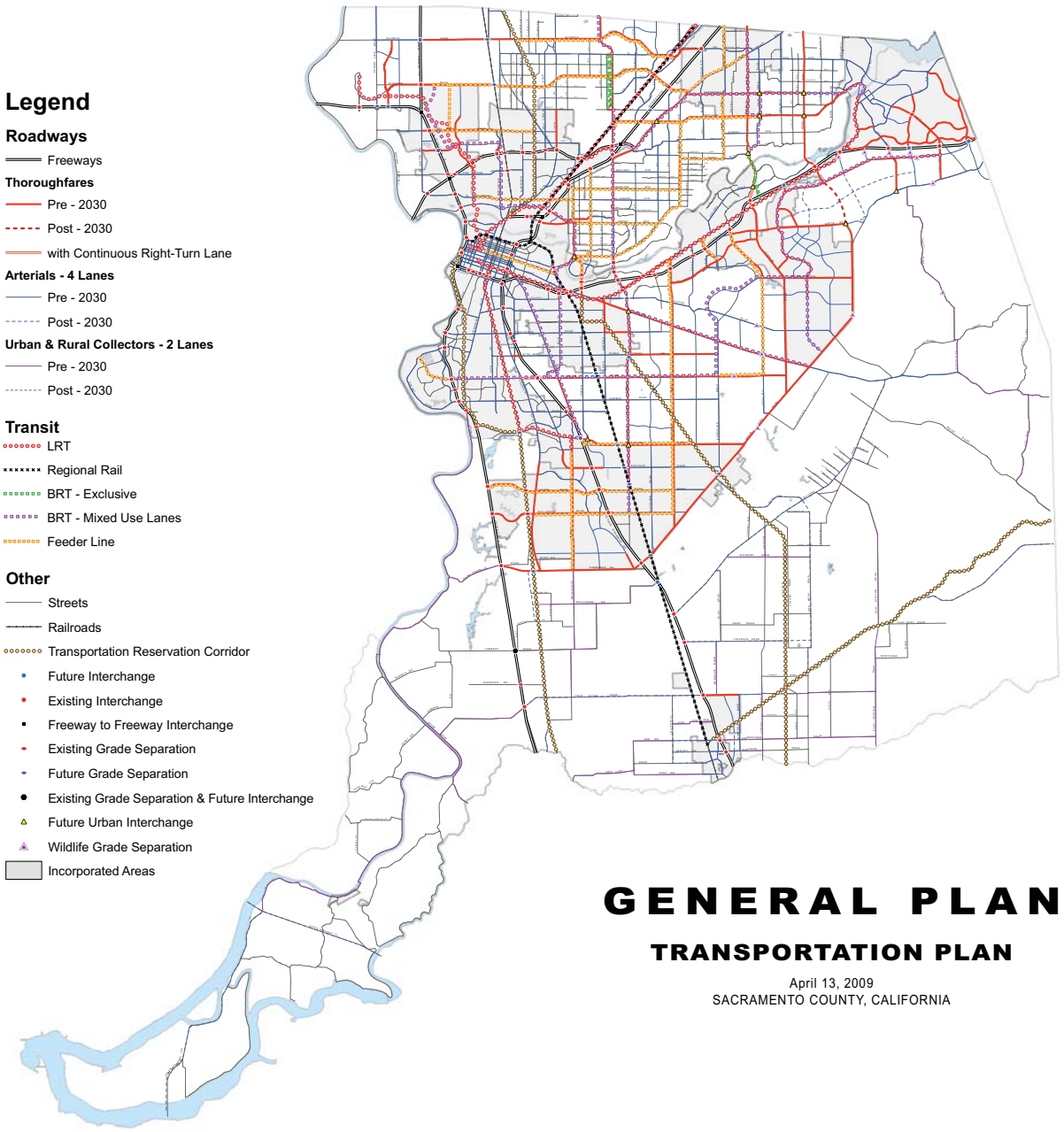
- Work with transit providers and planning staff to ensure that bicycle access is provided at all transit-oriented development and identified commercial corridors.
- Assess the use of developer fees and/or improvement districts to contribute to improved bicycle facilities in commercial corridors.
- Promote safety education and skills training programs.

Bicycle Facilities

The General Plan identifies bicycling as a key component of a multi-modal transportation system that provides choice, reduces congestion, and improves air quality. It creates a goal of providing safe, continuous, convenient, and accessible bicycle systems that serve and connect unincorporated neighborhoods and communities; link communities with other cities, facilities, and regional parks; and facilitate bicycle access to other modes of transportation. The following policies are discussed.

- Adopt, implement, and periodically update the Bikeway Master Plan for unincorporated Sacramento County that sets forth the goals, policies, guidelines, programs, and improvements necessary to develop a comprehensive bicycle system connecting the employment, commercial, recreational, educational, social services, housing, and other transportation modes.
- Construct and maintain bikeways and multi-use trails to minimize conflicts between bicyclists, pedestrians, and motorists.

- Require land development projects to finance and install bicycle facilities and multi-use trails as appropriate and in accordance with the Bikeway Master Plans.
- Collaborate with neighboring jurisdictions and regional agencies to coordinate planning and development of the County's bikeways and multi-use trails with those of neighboring jurisdictions, and to support a regional bicycle network.
- Pursue all available sources of funding for the development, improvement, and maintenance of bikeways and multi-use trails, and to support bicycle safety, education, encouragement, and enforcement programs.
- Design and construct roadway capital improvement projects consistent with the policies, guidelines, and improvements set forth in the Bikeway Master Plan.
- Condition land development projects based on the policies, guidelines, and improvements set forth in the Bikeway Master Plan.


Legend
Roadways
Freeways
Thoroughfares
Pre - 2030
Post - 2030
with Continuous Right-Turn Lane
Arterials - 4 Lanes
Pre - 2030
Post - 2030
Urban & Rural Collectors - 2 Lanes
Pre - 2030
Post - 2030
Transit
LRT
Regional Rail
BRT - Exclusive
BRT - Mixed Use Lanes
Feeder Line
Other
Streets
Railroads
Transportation Reservation Corridor
Future Interchange
Existing Interchange
Freeway to Freeway Interchange
Existing Grade Separation
Future Grade Separation
Existing Grade Separation & Future Interchange
Future Urban Interchange
Wildlife Grade Separation
Incorporated Areas
GENERAL PLAN
TRANSPORTATION PLAN
April 13, 2009
SACRAMENTO COUNTY, CALIFORNIA
0
2.5
5
10
Scale in Miles

Draft Sacramento County General Plan, Land Use Element (2009)

Figure 6 shows the urban designations as outlined in the General Plan's Land Use Element. Bicycles are an integral transportation type for the Transit-Oriented Development (TOD) designation. The General Plan states that TOD locations and other urban designation locations should have bicycle linkages between them. The General Plan establishes an objective for *high intensity, mixed use neighborhoods that provide a pedestrian environment and are closely linked to transit.* Two policies to meet this objective are:

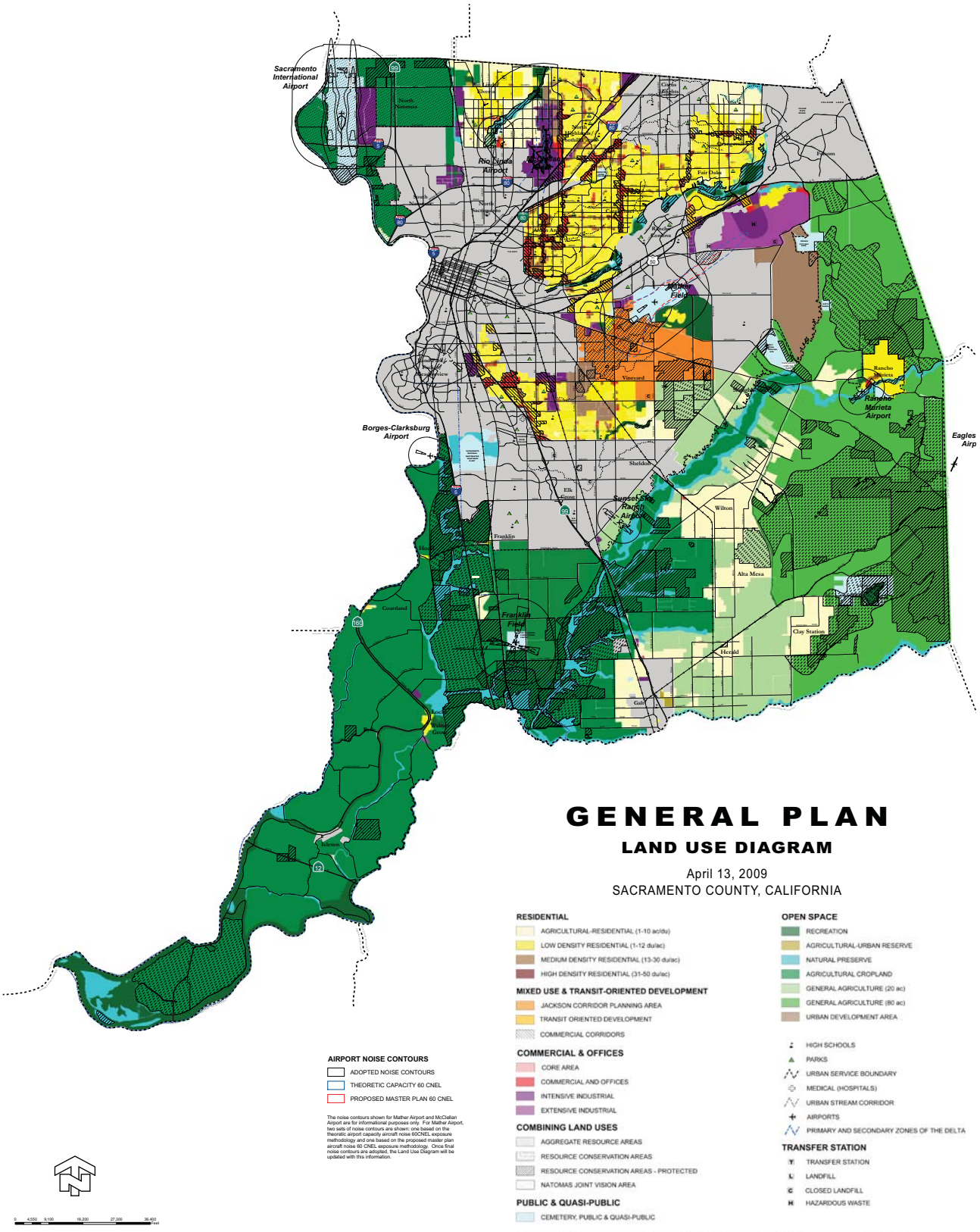
- Direct, multiple linkages, especially for bicycles and pedestrians, between the Core Area and the surrounding Secondary Area.
- Promote and support development of pedestrian and bicycle connections between transit stations and nearby residential, commercial, employment, or civic uses by eliminating physical barriers and providing linking facilities, such as pedestrian overcrossings, trails, wide sidewalks, and safe street crossings.

The General Plan states that bicycle use is important in regard to health. One of the Plan's objectives is for *increased opportunities for every resident of Sacramento County to be more physically active.* To help accomplish this objective, bicycle travel is mentioned as a positive activity for public health.

Vehicle parking can affect bicycle mobility and directness of route. Sacramento County has abundant free parking, which encourages vehicle use. The General Plan recognizes this and establishes a policy to *provide pleasant and safe pedestrian and bicycle movement under the Parking objective*.

The General Plan Land Use Element states the importance of commercial corridor planning and establishes the 14 corridors listed below as targets for improvements. To implement these planning projects, these pedestrian and bicycle connections are recommended as implementation measures.

1. Florin Road
2. Watt Avenue North
3. Auburn Boulevard North
4. Fair Oaks Boulevard Central
5. Franklin Boulevard
6. Greenback Lane
7. Stockton Boulevard South
8. Auburn Boulevard South
9. Fair Oaks Boulevard West
10. Fair Oaks Boulevard East
11. Fulton Boulevard
12. Stockton Boulevard Central
13. Watt Avenue Central
14. Folsom Boulevard


Sacramento International Airport
Mather Airport
Rio Linda Airport
Mcclellan Field
Borges-Clarksburg Airport
Rancho Murieta Airport
Eagles Airp
Sheldon
Elk Grove
Sutter-Sloughhouse Airport
Wilton
Franklin
Alta Mesa
Courtland
Franklin Field
Clay Station
Herald
Galt
Vineyard
Fair Oaks
Folsom
Rancho Murieta
GENERAL PLAN
LAND USE DIAGRAM
April 13, 2009
SACRAMENTO COUNTY, CALIFORNIA
RESIDENTIAL
AGRICULTURAL-RESIDENTIAL (1-10 ac/du)
LOW DENSITY RESIDENTIAL (1-12 du/ac)
MEDIUM DENSITY RESIDENTIAL (13-30 du/ac)
HIGH DENSITY RESIDENTIAL (31-50 du/ac)
MIXED USE & TRANSIT-ORIENTED DEVELOPMENT
JACKSON CORRIDOR PLANNING AREA
TRANSIT ORIENTED DEVELOPMENT
COMMERCIAL CORRIDORS
COMMERCIAL & OFFICES
CORE AREA
COMMERCIAL AND OFFICES
INTENSIVE INDUSTRIAL
EXTENSIVE INDUSTRIAL
COMBINING LAND USES
AGGREGATE RESOURCE AREAS
RESOURCE CONSERVATION AREAS
RESOURCE CONSERVATION AREAS - PROTECTED
NATOMAS JOINT VISION AREA
PUBLIC & QUASI-PUBLIC
CEMETERY, PUBLIC & QUASI-PUBLIC
OPEN SPACE
RECREATION
AGRICULTURAL-URBAN RESERVE
NATURAL PRESERVE
AGRICULTURAL CROPLAND
GENERAL AGRICULTURE (20 ac)
GENERAL AGRICULTURE (80 ac)
URBAN DEVELOPMENT AREA
HIGH SCHOOLS
PARKS
URBAN SERVICE BOUNDARY
MEDICAL (HOSPITALS)
URBAN STREAM CORRIDOR
AIRPORTS
PRIMARY AND SECONDARY ZONES OF THE DELTA
TRANSFER STATION
TRANSFER STATION
LANDFILL
CLOSED LANDFILL
HAZARDOUS WASTE
Land use designations for incorporated cities within Sacramento County will be updated so that they are consistent with their respective adopted General Plans.
AIRPORT NOISE CONTOURS
ADOPTED NOISE CONTOURS
THEORETIC CAPACITY 60 CNEL
PROPOSED MASTER PLAN 60 CNEL
The noise contours shown for Mather Airport and McClellan Airport are for informational purposes only. For Mather Airport, two sets of noise contours are shown: one based on the theoretic airport capacity aircraft noise 60CNEL exposure methodology and one based on the proposed master plan aircraft noise 60 CNEL exposure methodology. Once final noise contours are adopted, the Land Use Diagram will be updated with this information.
0 4,550 9,100 18,200 27,300 36,400 Feet

Draft Sacramento County General Plan, Open Space Element (2007)

The Open Space Element provides a policy framework for the use of open space resources. The plan identifies creating open space linkages as an opportunity to develop a network of bicycle paths. Such linkages can be beneficial in both rural and urban land uses, accommodating complete ecosystems by providing natural land corridors, and for definition, scale, and psychological relief against urban sprawl. A principle of the Open Space Element includes maintaining greenbelts and parkways for bicycle travel.

Draft Sacramento General Plan, Public Facilities Element (2007)

The Public Facilities Chapter of the General Plan discusses guidelines for a variety of public facilities and services, and it suggests that public land uses accommodate bicycling. Specifically, it recommends linking new schools with planned bikeways wherever possible; creating bicycle accessibility to future libraries; and building community parks within bicycling distance of the people they are intended to serve.

The 2010 Sacramento City/County Bikeway Master Plan (1993)

The City and County of Sacramento combined their efforts to produce the 2010 City/County Bikeway Master Plan. The Sacramento County Board of Supervisors approved the Plan in November 1993. As Figure 7 shows, this plan aims to develop a comprehensive plan that will meet the needs of all bicyclists. It revises the 1977 Sacramento Bikeway Master Plan, and it represents the first effort by the County to recognize bicycling as a transportation mode in addition to a form of recreation.

This Bikeway Master Plan includes accounts for all of Sacramento County, consisting of 997 square miles and 3,887 miles of public roads. Resolutions adopting the plan are included in the document. The cities of Folsom, Galt, and Isleton are included as conceptual plans only and, according to the updates, are not officially adopted by their governing bodies. Mileage and locations of bikeways for these cities are informational only and do not constitute a commitment on their part.

The Plan seeks to coordinate and develop a bikeway system that benefits the recreational and transportation needs of the public. The 1995 revision also reestablishes the inclusion of bicycles for consideration in traffic planning and project funding. The Plan focuses on one overall goal, followed by six specific objectives, along with accompanying policy and program recommendations. It also outlines an implementation and maintenance budget for the County of Sacramento (see Table 2).

TABLE 2: COUNTY OF SACRAMENTO FIVE AND TEN-YEAR PROGRAM COSTS FOR THE 2010 SACRAMENTO CITY/COUNTY BICYCLE MASTER PLAN

On Street 5 Year Program (Total of 480.15 miles – 96.03 miles per year)				
Year	**5 Yr Miles**	**Implementation**	**Maintenance**	**Yearly Total**
1	96.03	$161,043	$150,095	$311,138
2	192.06	$161,043	$300,190	$461,233
3	288.09	$161,043	$450,285	$611,328
4	384.12	$161,043	$600,380	$761,423
5	480.15	$161,043	$750,474	$911,517
	5 Year Total	**$805,215**	**$2,251,424**	**$3,056,639**

On Street 10 Year Program (Total of 353.49 miles – 70.70 miles per year)						
Year	**10 Yr Miles**	**5 Yr Miles**	**Total Miles**	**Implementation**	**Maintenance**	**Yearly Total**
6	70.70	480.15	550.85	$88,761	$860,975	$949,736
7	141.10	480.15	621.55	$88,761	$971,476	$1,060,237
8	212.09	480.15	692.24	$88,761	$1,081,977	$1,170,738
9	282.79	480.15	762.94	$88,761	$1,192,478	$1,281,239
10	353.49	480.15	833.64	$88,761	$1,302,979	$1,391,740
			10 Year Total	**$443,805**	**$5,409,885**	**$5,853,690**
			5/10 Year Totals	**$1,249,020**	**$7,661,309**	**$8,910,329**

Off Street 5 Year Program (Total of 1.89 Miles)				
Year	**5 Yr Miles**	**Implementation**	**Maintenance**	**Yearly Total**
1	0	$0	$0	$0
2	1.89	$189,000	$12,058	$201,058
3	1.89	$0	$12,058	$12,058
4	1.89	$0	$12,058	$12,058
5	1.89	$0	$12,058	$12,058
	5 Year Total	**$189,000**	**$48,232**	**$237,232**

Off Street 10 Year Program (Total of 5.17 Miles)						
Year	**10 Yr Miles**	**5 Yr Miles**	**Total Miles**	**Implementation**	**Maintenance**	**Yearly Total**
6	0.00	1.89	1.89	$0	$12,058	$12,058
7	5.17	1.89	7.06	$361,900	$45,043	$406,943
8	5.17	1.89	7.06	$0	$45,043	$45,043
9	5.17	1.89	7.06	$0	$45,043	$45,043
10	5.17	1.89	7.06	$0	$45,043	$45,043
			10 Year Total	**$361,900**	**$192,230**	**$554,130**
			5/10 Year Totals	**$550,900**	**$240,462**	**$791,362**

Overall Goal

To develop a comprehensive updated Sacramento City/County Bikeways Master Plan that will meet the needs of the bicyclists.

Objectives

1. Coordination Objective – To develop and maintain a coordinated approach by City/County and other agencies to implement the plan as funding becomes available or as development occurs.
2. Safety and Security Objective – To achieve the highest possible level of safety and security for cyclists.
3. Design Objective – To provide adequate design consideration for bicycle facilities in all development plans and programs.
4. Maintenance Objective – To develop a comprehensive bikeway maintenance program.
5. Aesthetics Objective – To develop a bikeway system that incorporates aesthetics and the historical characteristics of the Sacramento area.
6. Implementation Objective – To take necessary actions to implement Objectives 1 through 5.

Air Quality and Traffic Mitigation

In an effort to improve air quality and mitigate traffic congestion, both the City of Sacramento and County of Sacramento adopted two Trip Reduction Ordinances that require developers and employers to formulate trip reduction programs and transportation systems management plans. Bicycling is a component of TSM programs. The Sacramento Metropolitan Air Quality Management District (SMAQMD) also identifies bicycle safety, facilities, and enforcement as important transportation and indirect source control measures within its 1991 Air Quality Attainment Plan.

Bicycle Advisory Committee

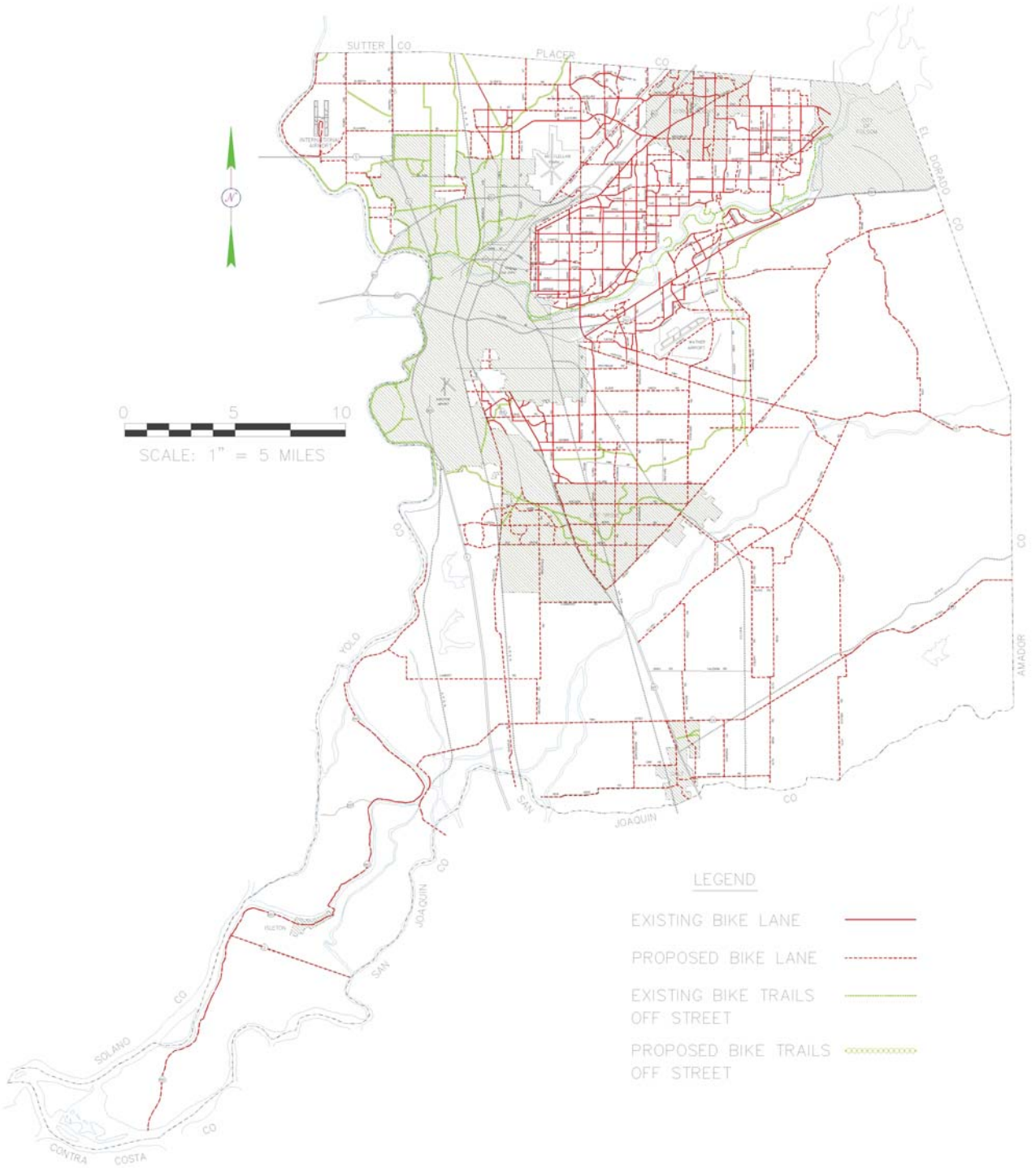
The report establishes the Bicycle Advisory Committee (SacBAC) to guide implementation of the bicycle plan suited to the needs of individual jurisdictions, advise local government, and advocate for implementation of the plan at the local level.

Bikeway Development Priorities

The updated Plan incorporates a list of six development priorities:

1. Bring streets included in the 1977 Bikeway Master Plan up to current bikeway standards during the initial two to three years of the five-year program.
2. The scope of the Bikeway Master Plan does not include a projection of the overlay programs. Therefore, the Public Works Departments should be cognizant of the newly adopted Class II bikeways and implement them in an efficient and timely manner, i.e., reposition lane lines if necessary to optimize the flow of all types of traffic.
3. All new major and minor arterials are recommended as Class II bikeway streets.

4. The on-street bikeways as defined by the five- and ten-year programs have been uniformly distributed by population densities/demand. Also, segments are to be added progressively to maintain bikeway continuity.
5. Off-street bike paths are difficult to schedule for implementation because funding is unpredictable. Within the County jurisdiction, when a community has an adopted development plan, all bike paths included in the plans are also listed in the five-/ten-year programs. These facilities are assumed to be funded by conditions of development approval, formulation of special districts, or grants.
6. The scope of the Bikeway Master Plan did not include in-depth studies of communities to determine a time frame for implementation of off-street bike paths. Therefore, the total mileage of bike paths listed in the five-/ten-year programs is only 75 percent of the Bikeway Master Plan off-street mileage. A majority of the Class I mileage falls within the jurisdiction of the County Parks Department, and they will obtain funding for construction projects.


SUTTER CO
PLACER CO
EL DORADO CO
YOLO CO
SAN JOAQUIN CO
AMADOR CO
SOLANO CO
CONTRA COSTA CO
0 5 10
SCALE: 1" = 5 MILES
LEGEND
EXISTING BIKE LANE
PROPOSED BIKE LANE
EXISTING BIKE TRAILS OFF STREET
PROPOSED BIKE TRAILS OFF STREET

County of Sacramento Improvement Standards

Sacramento County Department of Transportation's Improvement Standards define standards applicable to on-street bike lanes, traffic signals, and striping on County roads. Chapter 1000 of the Caltrans *Highway Design Manual* and the *Manual on Uniform Traffic Control Devices*, California edition, provides guidance regarding Class I (bike paths) and Class III (bike routes) and specific details not covered in the County Improvement Standards.

In addition to the classes of standard bikeways, Sacramento County also maintains a network of striped shoulders or "multipurpose" lanes that both bicyclists and pedestrians use in the absence of other facilities. The 2010 Bikeway Master Plan designates the locations of Class I and Class II facilities.

Striping

The County Improvement Standards require:

- Five-foot minimum width (preferably six-foot) paved shoulder for bicyclists and pedestrians when no frontage improvements or on-street parking exist.
- Five-foot minimum of pavement from stripe to edge of pavement where frontage improvements (curb and gutter) and no on-street parking is allowed.
- Striping shall be a white line, six inches wide for bicycle lanes, and four inches wide for multipurpose lanes.

On approach to an intersection, the following shall apply to bicycle and multi-purpose lane striping:

- In the absence of right turn only lanes, either signalized or non-signalized, lane striping shall transition from solid to skip lane striping 120 feet before the intersecting street, measured from the stop bar (or from the beginning of return in the absence of a stop bar). Skip striping shall consist of four foot stripes and eight-foot spacing.
- In the presence of a right turn lane, bicycle and multi-purpose lane striping shall cease 50 feet before the right turn lane begins. Bicycle lanes shall commence at the point the right turn lane begins and shall run parallel to and continuous with the left side of the right turn lane.
- Striping of bicycle lanes and multi-purpose lanes shall not extend across intersections except in the case of T-intersections opposite the intersecting street. Bicycle and multi-purpose lane striping shall commence on the departure side of intersections at the far side of crosswalks or at the end of the return in the absence of a crosswalk.
- For all bicycle lanes, pavement legends "BIKE," "LANE," and the bike lane arrow shall be centered in the lane, at the far side of intersections, approximately 10 feet after the crosswalk or 10 feet after the end of return in the absence of crosswalks. Legends shall be spaced 24 feet apart. Additionally, legends shall be placed within bicycle lanes that run parallel to, and to the left of, vehicular right turn lanes. For signalized intersections, the three legends shall be placed so that the end of the arrow is located at the point the lane striping transitions from solid to skip lane striping as described above.

Bicycle Detection

Bicycle related traffic signal guidelines require detection for bicycles at intersections. The Design Guidelines for detection are as follows:

- Bicycle lanes at signalized intersections require detection – preferably a push button mounted on a four-inch diameter 1-B traffic signal pole. The pole is to be located at the back of the curb, as close as possible to a point three feet before the extension of the stop bar, outside of the limits of the nearest sidewalk ramp. The push button shall be installed at a height of 36 inches above the pavement.

- For locations where push button bicycle detection is not possible, the use of the County's three-foot split hexagon inductive loop detector is required. The detector shall be centered in the bicycle lane, three feet in advance of the stop bar. Wherever a bicycle loop detector is installed, pavement delineation with a bicycle symbol shall be placed at the detector location.[1]

Sacramento County Municipal Code

The Sacramento County Municipal Code is a compilation of all the County of Sacramento's ordinances, codified into regulations. In the code, regulations are grouped by subject matter into titles, each of which is subdivided into chapters which, in turn, are subdivided into articles or sections. The Sacramento County Municipal Code contains 22 titles. With a few minor exceptions, most regulations concerning bicycle planning and riding can be found in Title II, "Administration and Personnel." This title discusses the make-up and duties of the Bikeway Task Force, and Title X, "Vehicles and Traffic," that addresses regulations for bicycling and trip reduction programs. Some notable exceptions are restrictions for riding in parks (§9-36066) and dedication of bikeways within subdivisions in Title XXII (§22-30010). Title III discusses shower and locker facilities. Below is a summary of the main bicycle-related regulations from Titles II and X.

Title II contains regulations for establishing the City-County Bikeway Task Force, including definitions, terms of appointments, frequency of meetings, vacancies, duties and participation.

- The task force shall consist of 13 members, six appointed by the mayor with approval of Council, six appointed by the Board of Supervisors, and one member appointed jointly by the board and the mayor, with approval of the Council (§2-92030).

- The duty of the task force is to develop a master plan for bikeways within the boundaries of the City and County;

  – to act as a technical and general resource group to advise and assist City and County staff and to monitor the staff's progress;

  – to hold neighborhood hearings through out the City and County for the purpose of ascertaining public opinion and evaluating recommendations received from the public with regard to the bikeway master plan and to establish priorities for bikeway construction;

  – to help develop a Countywide bicycle safety and security program; to insure continuity of planned bikeways through contiguous jurisdiction;

1. AASHTO *Guide for the Development of Bicycle Facilities,* 1999, Page 66.

  - to perform such other services relative to the establishment of City and County bikeways as the Council or Board may direct (§2-92080).

- The task force shall hold regular meetings at least once a month, at a time and place selected by majority vote of the entire membership (§2-92060).

Title X contains regulations granting rights and duties for bicycle riders (§10-12-010) and regulations for trip reduction programs. Every person riding a bicycle shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by this title, except those provisions, which by their very nature can have no application. Notwithstanding these provisions, any person may ride a bicycle on a sidewalk which is designated by the director as part of the County bike route system and which is identified for such use by appropriate signs giving notice thereof. A bicyclist using a sidewalk as authorized by this subdivision shall yield the right-of-way to any pedestrian using the sidewalk (§10-12010).

Regarding trip reduction, due to projected population growth in the County, accompanied with an estimated doubling of existing peak hour traffic volumes, bicycling for home-to-work trips is identified as an inexpensive alternative means to reducing peak-hour, single-occupant motor vehicle trips. While employers have traditionally provided parking facilities to accommodate employee vehicle trips, such employers should also be required to provide programs and incentives to encourage and accommodate bicycle commuting by employees (§10-64010).

Title III (§3-33007) encourages commute by bicycle. The code allows the number of automobile parking spaces reduced by a maximum of two percent if shower and locker facilities are provided in developments with one hundred or more employees.

Sacramento County Pedestrian Master Plan (2007)

The Pedestrian Master Plan formulates goals, policies, and action items for generating pedestrian enhancement projects and programs. Bicyclists are primarily included in the context of sharing benefits with pedestrians regarding benefits to access and mobility. The cases in which bicyclists and bicycle facilities are listed distinctly from pedestrians are summarized below.

Bicycle Lanes in Pedestrian Districts

The plan defines “Pedestrian Districts” as a category for improvement. These should be areas in which pedestrian demand is, or could potentially be, high based on adjacent land uses and transit activity. Bicycle lanes are included amongst the list of treatments that can be constructed within Pedestrian Districts. Within the target communities of the Sacramento County General Plan, a number of sites within the Arden Arcade Special Planning Area are recommended for classification as Pedestrian Districts due to specific characteristics of land use and relationships to transit. These include the Loma Vista Special Planning Area on Fulton Avenue, the Arden Court Neighborhood Planning Area on Watt Avenue, and the Arden Oaks Neighborhood Planning Area on Watt Avenue.

Pedestrian Safety

Bikeway construction is a proposed action to keep bicycles off sidewalks in order to minimize pedestrian/bicycle collisions.

Delta Community Plan Southern Pacific Railroad Conversion

Within the Delta Community Plan portion of the Pedestrian Master Plan, one circulation policy encourages the utilization of the abandoned Southern Pacific Railroad right-of-way for a bicycle trail from the towns of Hood and Freeport.

Mobility Study for County Corridors (2004)

The Mobility Study describes a series of candidate strategies for 11 of Sacramento County's most congested corridors. Bicycling surfaced as a solution strategy for every corridor, fitting into various strategic themes – particularly the Current Plans Theme, and the Transitway Theme – described in the next section. Additionally, location-specific strategies also featured some bicycle-related solutions.

The corridors include: Florin Road, Greenback Lane (West), Hazel Avenue, Howe Avenue, Madison Avenue, Sunrise Boulevard (north), Sunrise Boulevard (South), Watt Avenue (north), Watt Avenue (Central), and Watt Avenue (South)

Current Plans Theme Solutions

This Study identifies strategies under current themes if they reflect conditions that would exist if all of the short-range and long-range plans adopted by the corridors' governing jurisdictions were implemented. For every corridor, the current plan's theme suggested either a bike lane or a wide shared-use shoulder for bicycling as a solution.

Transitway Theme Solutions

Strategies in the transitway theme entail major transit improvements along each corridor. Bicycling-related solutions in this theme enhance access through infrastructure improvements of either bicycle routes or bike lanes to transit stops.

Location-Specific Strategies

Two of the Study's location-specific solutions incorporate bicycle infrastructure.

- Bike Improvements Parallel to Hazel Avenue – This solution provides improvements on streets parallel to and along cross-streets to Hazel Avenue. These improvements will help facilitate long distance bike travel as well as local pedestrian and bicycle travel between schools, the community center, and residential neighborhoods.

- Pedestrian and Bicycle Overcrossings on Madison Avenue and Greenback Lane – Overcrossings of I-80 at several locations are designed to improve connectivity for pedestrian and bicycle travel between schools, retail centers, employment centers, and residential neighborhoods on both sides of I-80.

Safe Routes to Transit 2006: Bicycle Access to Light Rail in Sacramento

The Sacramento Area Council of Governments (SACOG) Safe Routes to Transit 2006: Bicycle Access to Light Rail in Sacramento evaluates existing bicycling conditions near 12 Sacramento Regional Transit District light rail stations. An advisory committee, made up of representatives from local governments, the California Department of Transportation, Sacramento Regional Transit, the Sacramento Area Council of Governments, and members of the bicycling community helped guide the study. The project consultants

assessed each station for its provision of bicycle amenities and overall accessibility. These observations focused on existing conditions encountered by current and prospective bicyclists, regarding area roads, intersections, station accessibility, and bicycle parking. The committee also devised a set of Model Station Guidelines to be considered for future light rail stations as well as upgrades to existing stations. General findings and recommendations, along with a more detailed description of the Model Station Guidelines, are presented below.

General Findings

The report presents detailed findings for each station. These general findings are applicable to all stations, or to the general experience of bicycling in combination with using the light rail system.

- Many of the light rail stations are not easily accessible by biking because of road conditions and nearby heavy rail lines.
- Bicyclists constitute a significant – though not well-documented – percentage of light rail users.
- Bicycle access to light rail stations can be improved by a variety of changes to the stations and the surrounding road networks. While some of the changes would require substantial investments, many of the changes could be made at low cost.
- Way-finding signage to stations is limited and confined to areas very close to stations.
- Information about bicycling to and from light rail stations is not readily available.
- Many cyclists would benefit from bicycle skills and safety training to increase their self-confidence, assertiveness, and skill level.
- The wave or “ribbon” and post or “knee-knocker” bike racks at the stations are not well-used and not appropriate for long-term bike parking. The wave racks that are standard at most existing RT stations are not recommended by APBP because they do not provide two points of support for the bike and often are not used as intended. People tend to park their bikes parallel to the racks to get two points of support, reducing their effective capacity.
- Lockers are underutilized. With the exception of the three stations in Folsom, all stations have locker vacancies.
- Anecdotal evidence and the lease rates provided by RT indicate that more cyclists take their bikes on board light rail trains than park their bikes at stations. Many cyclists who take their bikes on board do not use the bike hooks in the new vehicles. No data on boarding with bicycles or use of racks are available.
- Boarding light rail with a bike is physically difficult and somewhat confusing.
- Stowing bikes in the designated areas on board light rail cars often creates conflicts with seated passengers. Bike hooks in the CAF light rail cars do not work with all bikes, particularly those with large tires. Bikes held by standing cyclists sometimes interfere with passenger movements.

General Recommendations

The report presents detailed recommendations for each station. These general recommendations are applicable to all the stations, or to the general experience of bicycling in combination with using the light rail system.

- Establish a goal for bike-to-transit and bikes-on-transit ridership and gather data on attainment of that goal. Recommended data to collect would include: the number of cyclists using light rail, the number boarding at each station, and the number of bikes normally parked at each station.
- Begin a program of augmenting or replacing wave or "ribbon" and post bike racks system-wide with more secure bike parking.
- Provide a combination of reserved and on-demand lockers at all stations.
- Provide information on locker rentals at each station with lockers. Information should be on or close to the lockers.
- Make boarding with bikes and stowing bikes on trains simpler.
- Adopt an explicit policy on the use of folding bikes on light rail trains, allowing their use without reducing existing quotas for non-folding bicycles. Folding bicycles do not take up significantly more space than a piece of luggage.
- Provide station area maps with bike routes and photos of station bike parking on web site to assist with trip planning.
- Promote bicycling to transit in residential neighborhoods that have good bicycle access to a station by doing the following:
  - Installing way-finding signage to the station and station bicycle parking, as well as other signage or pavement markings where appropriate.
  - Initiating a public awareness campaign highlighting bicycle routes to stations and details and use of bicycle parking at the stations.
  - Offering adult bicycle education classes targeted to neighborhoods or major employers near stations.
  - Conducting an individualized marketing campaign to identify and motivate prospective bicyclists in several bike-friendly neighborhoods near light rail stations.
- Modify signal detection at signals within one-quarter mile of stations to provide detection of bicycles. Install detection in bike lanes where they exist.

Model Station Guidelines

In addition to station evaluation, the report also presents a best practices guide for station development to optimize bicycle access to light rail. The guidelines include brief recommendations for bicycle parking, curb cuts, integration of bicycles into station traffic circulation, station access, bicycle-friendly streets, pavement quality and maintenance, roadway-station interface, way-finding, area maps, public outreach, promotion, light rail boarding, and bicycle stowage.

Traffic Impact Analysis Guidelines (2004)

The County of Sacramento Traffic Impact Analysis (TIA) Guidelines details the steps necessary for a traffic impact analysis in the County. The Department of Transportation determines when a TIA is necessary, but, typically, TIA's are necessary when one of the following criteria is met.

- The project will generate 100 or more new AM or PM peak hour vehicle trip-ends.
- The project will generate 1,000 or more daily vehicle trip-ends.
- New project traffic will substantially affect an intersection or roadway segment already identified as operating at an unacceptable level of service.
- The project may create a hazard to public safety.
- The project will substantially change the off-site transportation system or connections to it.

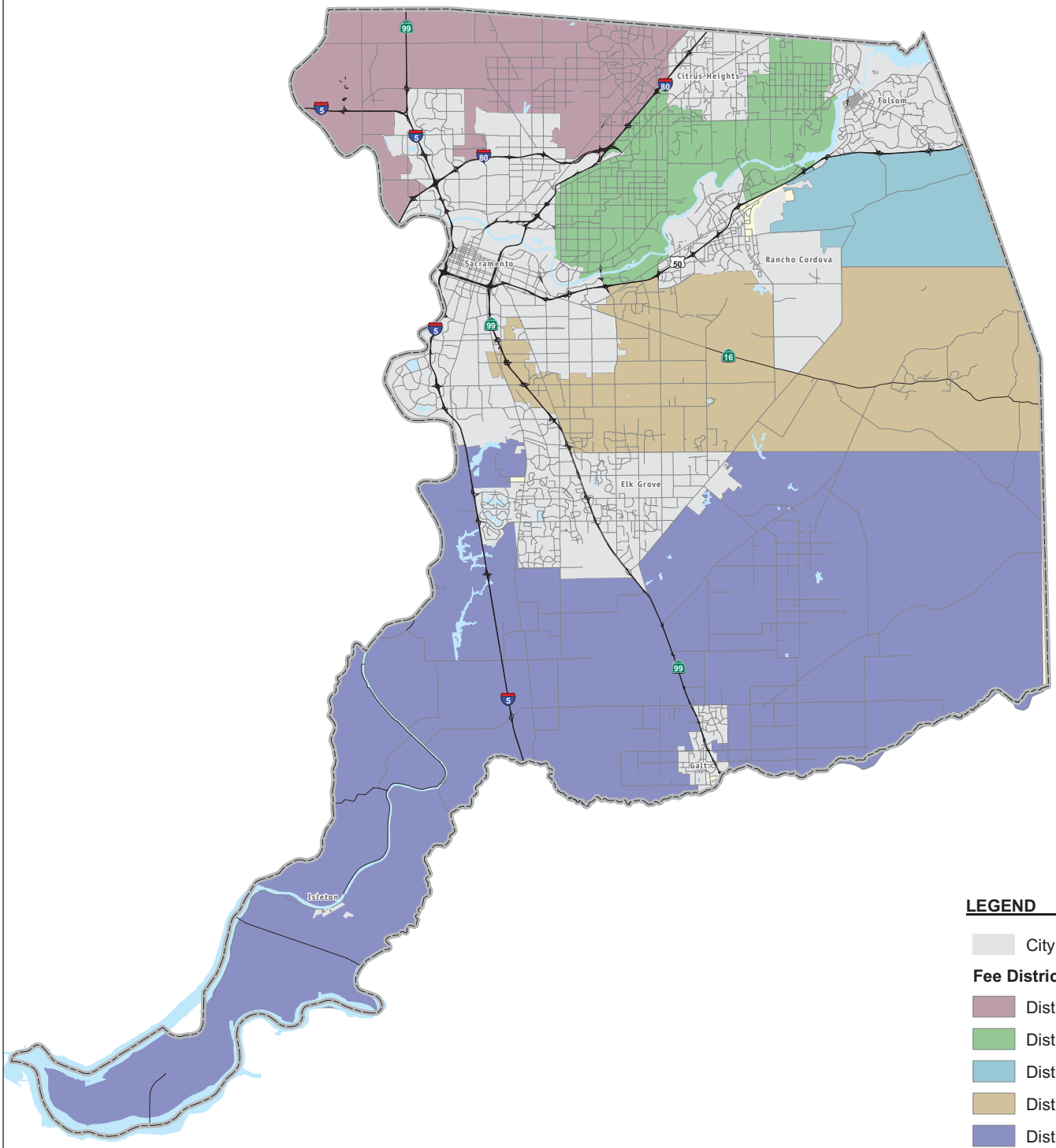
In relation to bicycles, TIA's should identify any existing or planned facilities, as included in the County's Bicycle Master Plan, that will be modified by the project or is within ¼ mile of the project. A project is deemed significant to the bicycle system if it eliminates or adversely affects an existing bikeway, would interfere with the implementation of a planned bikeway, or results in unsafe interactions for bicyclists with pedestrians or motorists. Using the significance criteria, the TIA should identify if impacts to the bicycle network are significant

Sacramento County Transportation Development Fee Program Update (2007)

The Sacramento County Transportation Development Fee (SCTDF) program began in 1988 and was updated with the 1993 County General Plan. A fee update, based on revised construction costs estimates, was adopted by the Board of Supervisors in November 2008. The SCTDF funds construction of roadway, transit, bicycle, and pedestrian facilities in the County. Developers must pay a fee depending on the location of the project. Figure 8 shows the five fee districts in the County.

The County updated the Transportation Development Fee program, due to the incorporation of Citrus Heights, Elk Grove, and Rancho Cordova and to meet rising development and construction cost estimates. The updated program directs funds for transportation improvements through 2032. Between 2005 and 2032, housing units in unincorporated Sacramento County are expected to grow by 55 percent and employment is expected to growth by 43 percent, requiring infrastructure improvements.

About 33 miles out of the 74 miles of the roadways that would operate at LOS F conditions in 2032 would be widened under the 2032 SCTDF Program and thus will have new or upgraded bike lanes. Of the remaining 41 miles of congested roadways that already have the maximum number of lanes allowed in the General Plan, about 53 percent do not have bike lanes. The fees associated with constructing bike lanes along these congested roadways are included in the 2032 SCTDF Program. Bike lanes are viewed as a way to reduce traffic volumes and improve mobility. SACOG has determined 26 miles of regionally significant bikeways in the County. This Report also includes fee calculations for these improvements.



SACRAMENTO COUNTY BICYCLE MASTER PLAN

SACRAMENTO COUNTY TRANSPORTATION FEE DISTRICTS

FIGURE 8

REGIONAL PLANS

This section discusses several local bicycle, pedestrian, trail, and area plans.

SACOG Regional Bicycle, Pedestrian, and Trails Master Plan (2007)

The Sacramento Area Council of Governments' Regional Bicycle, Pedestrian, and Trails Master Plan is part of the Metropolitan Transportation Plan for 2025, which establishes the region's 25-year transportation investment plan. The Plan guides long-term decisions for the Bicycle and Pedestrian Funding Program, adopted by the SACOG Board of Directors in September 2003 (see Figure 9). No funding-constraints are factored into the Plan. It accounts for 20 years of high quality, high impact, and regionally significant projects.

The Plan identifies a number of key goals and objectives; it presents evaluation criteria for the Bicycle and Pedestrian Funding Program, and its appendix amasses a large amount of information with respect to bicyclist demographics, existing conditions, opportunities and constraints, facility design, safety statistics, educational programs, and measures to improve bicycling conditions.

Bicycle Program Goals

- The Plan divides main bicycling objectives into capital projects and non-capital projects and programs. Specific goals for capital bicycling projects include the following.
  - Provide inter-jurisdictional bicycle connections.
    - To regional and local public transit systems.
    - To carpool/vanpool park-and-ride lots.
    - To regional and local activity centers.
  - Provide bicycle access within or through the central business districts of the region.
  - Fill gaps in existing, planned, or proposed interregional bicycle routes.
  - Provide bicycle access across barriers.
  - Improve the time convenience of bicycling.
  - Improve the safety and security of bicycling where needed for utilitarian purposes.
  - Provide an aesthetic, pleasant, or more comfortable biking experience.
  - Provide capital facilities that support bicycling, such as storage, parking, or bike stations.
  - Complement bicycle plans and projects in an adjacent region.

- Specific goals for non-capital bicycling projects and programs including the following.
  - Encourage biking through public information, education and awareness.
  - Where needed, perform studies and plans that support the goals for capital facilities stated above.
- Increase the level of public agency staff expertise on bicycling.

Figure 9 – The SACOG Region

Blueprint Smart Growth Principles

In attempt to combat new challenges in the Sacramento region relating to growth, development, transportation, and the environment, this section identifies principles to encourage Smart Growth. Some concepts it promotes include mixed-use development, compact development, diversity of housing choice, use of existing assets, quality design, and natural resources conservation.

With respect to bicycling, Smart Growth promotes providing development that encourages people to walk, ride bicycles or take transit. It employs land use and right-of-way design that decrease reliance on autos.

Desired Outcomes for Land Developments and Redevelopments

Since offering transportation choices and making communities bicycle friendly are fundamental principles of smart growth, the Plan defines desired smart growth outcomes for new developments and redevelopments in the region. These outcomes are summarized below.

For a central business district, urban activity center, commercial corridor or town/village activity center:

- Maximum block size of 360 feet, or 1-1/2 acres.
- Maximum parking (less preferred) is 1.25 spaces/residential unit, 3.5-spaces/1,000 square feet retail and office.
- Pedestrian and transit connectivity standards, both internal and external to the project.

For neighborhood-scale development:

- Neighborhood-serving retail center with strong pedestrian and bicycle connections to the development and adjacent neighborhoods.
- 80 percent of residences are within 880 feet of a park, open space, or agricultural land.
- Predominantly grid street pattern.
- Maximum parking (less preferred) is 1.5 spaces/residential unit, 4-spaces/1,000 square feet retail and office.
- Street connectivity to adjacent areas (i.e., limited cul-de-sacs, no gated communities).
- Right-of-way is designed using multi-modal “skinny street” principles, while maintaining bicycle and pedestrian accessible facilities.
- Identified stops and a good local circulation system for public transit or park-and-ride lots.
- Sidewalks and bike routes provided throughout the development, with passages connecting cul-de-sacs and non-connecting streets.

Metrics for Improvement and Success

This section identifies a variety of metrics that can be used to measure the long-term success of the Plan, including change in miles of bikeways and sidewalks, change in usage, impact of bicycle investments on air quality, public health, and other quality of life indicators.

Safety Goals

This section describes the rigorous goals set forth in the Plan. It aims to double the percentage of total trips made by bicycling and walking in the Sacramento Region from 6 percent in 2000 to 13.2 percent of all trips by 2020, and to reduce by at least 20 percent the number of bicyclists and pedestrians killed or injured in traffic crashes by 2020, based on year 2000 data.

Best Practices for Bicycle Master Planning and Design (2005)

Best Practices for Bicycle Master Planning and Design was published in 2005 to provide exemplary plans for consideration and potential adoption by the Sacramento Transportation and Air Quality Collaborative.

The Sacramento Transportation and Air Quality Collaborative was jointly funded by 10 public agencies within the Sacramento countywide area: the County of Sacramento; the Cities of Citrus Heights, Elk Grove, Folsom, Rancho Cordova, and Sacramento; the Sacramento Regional Transit District (RT); the Sacramento Area Council of Governments (SACOG); the Sacramento Metropolitan Air Quality Management District (SMAQMD); and the Sacramento Transportation Authority (STA). In addition, Caltrans provided in-kind support.

The Best Practices for Bicycle Master Planning and Design presents the following:

- Bike Master Plan Best Practices
- Bicycle Facility Design Best Practices

Bike Master Plan Best Practices

The first section of the report outlines the required elements of a bicycle master plan in the State of California and the best practices for a typical bicycle master plan.

An explanation of the Caltrans list of requirements for a Bicycle Transportation Plan contained in the Streets and Highways Code Section 891.2 is provided to ensure eligibility for State funding for city and county projects that improve safety and convenience for bicycle commuters.

The Collaborative offers community outreach strategies for stakeholder involvement and a sample bicycle plan with exemplary and required elements such as existing conditions, facility mapping, policies and objectives, facility design guidelines, education, enforcement, and implementation programs. A final section addresses the current state-of-the-practice with regard to bicycle level of service measures. The existing City/County of Sacramento County Bicycle Master Plan meets all of these best practices.

Bicycle Facility Design Best Practices

The second section of the report overviews the best practices for the selection and design of bicycle facilities as documented in Caltrans' "Chapter 1000: Bikeway Planning and Design" of the *Highway Design Manual*. The Collaborative explains that while these standards provide a good framework for future implementation and are particularly useful for local jurisdictions that want to minimize their liability, they may not always be feasible given specific constraints. Descriptions and design elements of many different roadway and bicycle improvements are included in the Report. These include standard design practices for signage, traffic calming, and street layouts as well as innovative striping, signage, and crossings. Example locations are provided along with the various treatments.

American River Parkway Plan (2006)

The American River Parkway Plan guides land use decisions affecting the open space greenbelt, extending approximately 29 miles from Folsom Dam at the northeast to the American River's confluence with the Sacramento River at the southwest. The Parkway Plan contains policy statements of a general and flexible nature for the Parkway. The American River Parkway Plan is adopted by Sacramento County as an element of the County General Plan.

The American River Parkway Plan identifies three major users: pedestrians, equestrians, and bicyclists. Of specific interest to bicyclists is the Jedediah Smith Memorial Trail, which acts as a primary bicycle commute corridor. The Trail runs the entire length of the Parkway and is accessible to bicyclists in Downtown Sacramento and the areas east in Sacramento County. The Plan addresses bicycling in numerous sections, detailed below.

Goals and Policies Related to Bicycling

The Plan includes extensive references to bicycling in its Goals and Policies section. These include the following.

- Bicycle use is permitted on designated paved bicycle trails, paved and authorized unpaved public access roads, and in parking lots.
- Bicycle use is permitted on designated maintenance and emergency access roadways, subject to the following conditions.
  - Off-pavement bicycle use is permitted on existing or reconfigured maintenance and emergency roadways in the Woodlake and Cal Expo areas, at the discretion of the Parkway Manager, and as approved on locally adopted area plans, which requires a public approval process.
  - Off-pavement bicycle use may be permitted so long as it is accompanied by additional stable and continued funding to support and monitor the use, is naturally buffered and designed to minimize off-trail behavior and protect sensitive habitat areas, is done only upon emergency roadways where appropriately signed and designated, and is provided access at points near clustered parking areas.
  - Off-pavement bicycle use may be further expanded to other areas of the Parkway after a three-year trial period and evaluation, subject to Parkway manager discretion. Locally adopted area plans shall be updated to reflect permitted areas of use.
- Jurisdictions adjacent to the Parkway are recommended to provide safe and convenient routes on local streets for bicyclists and pedestrians traveling to designated Parkway access points.
- One of the three trails along the length of the Parkway shall be designated for bicycling.
- New automobile bridges constructed over the American River should provide a path for bicycles.
- A bicycle/pedestrian trail should be constructed from the end of Chase Drive to connect with the existing Jedediah Smith Memorial Bicycle Trail.

Light Rail Station Development

The Plan includes guidelines for developing a Light Rail Station that provides access to the Parkway. The Downtown-Natomas-Airport (DNA-RT) light rail project alignment shall cross the entire Parkway and provide bicycle/pedestrian access into the Parkway at both levee sides. The plan requires the attachment of a bicycle and pedestrian bridge to be attached to the rail line structure.

Flooding

The Parkway floods periodically, presenting a danger to commuting bicyclists. The Plan calls for the construction of a Class I bicycle trail running along the north levee from Del Paso Boulevard to the Capital City Freeway. In addition, a County Regional Parks Web site notifying bicyclists of flooding dangers is recommended.

Bicycle Speeds

The Plan's implementation measures recommend that the County reevaluate the restriction of bicycle speeds to 15 mph. This evaluation should consider the needs of bicycle commuters, potential impacts to other recreational users, safety for all recreational users on the bicycle trail, and trail design.

STATEWIDE INITIATIVES OR LEGISLATION

Assembly Bill 32 and Senate Bill 375

Senate Bill (SB) 375 is the implementation legislation for Assembly Bill (AB) 32. AB 32 requires the reduction of greenhouse gases (GHG) by 28 percent by the year 2020 and by 50 percent by the year 2050. Greenhouse gases are emissions – carbon dioxide chief among them – that accumulate in the atmosphere and trap solar energy in a way that can affect global climate patterns. The largest source of these emissions related to human activity is generated by combustion-powered machinery, internal combustion vehicle engines, and equipment used to generate power and heat. SB 375 tasks metropolitan and regional transportation planning agencies with achieving GHG reductions through their Regional or Metropolitan Transportation Plans. The reduction of the use of automobiles for tripmaking is one method for reducing GHG emissions. This can be achieved through the use of modes other than the automobile, such as walking, using transit, or bicycling.

Assembly Bill 1358

Assembly Bill (AB) 1358 is the Complete Streets Act. It calls for the inclusion of all modes (pedestrian, bicycle, transit, and automobile) into the design of roadways. AB 1358 stipulates that roadways should be accessible by all users. The County of Sacramento design standards require bike lanes, bifurcated sidewalks, and transit turnouts on all new construction.

Assembly Bill 1581

Assembly Bill 1581 provides direction that new activated traffic signal construction and existing traffic signal modifications include the ability to detect bicycles and motorcycles. It also calls for the timing of activated traffic signals to account for bicycles. In response to AB 1581, Caltrans has issued Traffic Operations Policy Directive 09-06, which has proposed modifications to Table 4D-105(D) of the MUTCD California Edition. The CTCDC is considering the proposed modifications.

BICYCLE USER SURVEYS

Sacramento Area Bicycle Advocates 2006 Cyclist Survey

Conducted by the Sacramento Area Bicycle Advocates (SABA) between June 2006 and May 2007, the Sacramento Area Bicycle Advocates Survey garnered 522 survey responses to questions regarding route choice, riding frequency, and perceptions of bikeways.

Bicyclists Type

As a non-random survey, administered online, the results mainly express views of SABA members, many of whom are experienced bicyclists. Out of 400 respondents, almost 40 percent classified themselves as feeling comfortable enough to "ride anywhere, with or without bike lanes." Figure 10 shows the results.

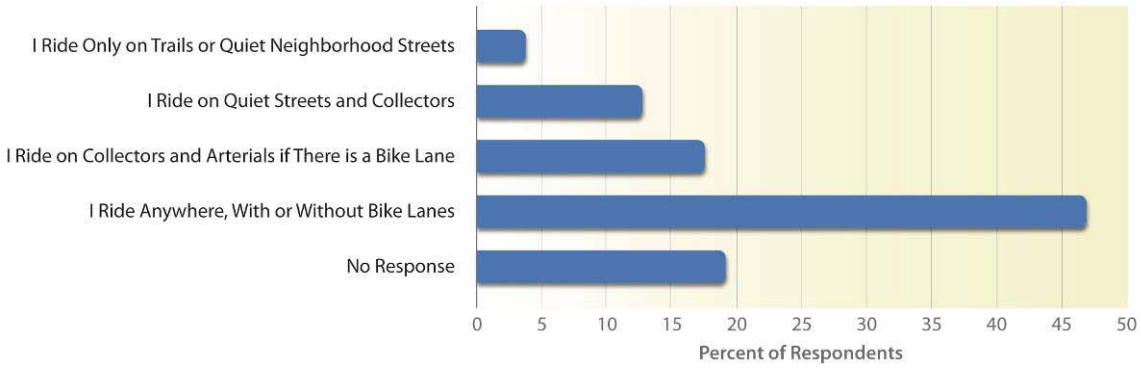


Figure 10 – SABA Survey respondents self-rate their bicycling experience

Riding Location

Regarding bicycling locations, the survey found that the majority of respondents rode in the City of Sacramento. Unincorporated Sacramento County ranked second highest, with over 10 percent of the surveyed population.

General Opinions

The survey was unique in that it invited respondents to identify roadways, trails, and intersections with which they were familiar, encouraging them to provide positive and negative feedback. In this section, respondents expressed most concern regarding the absence of continuous bicycle lanes, the presence of debris in bikeways, and poor pavement conditions on key commuting corridors, along multi-lane roads, and on fast roads. Figure 11 shows the results of bicyclists' concerns. Many respondents were also concerned about traffic signals that failed to detect bicyclists, along with signals failing to allow bicyclists enough time to safely clear intersections.

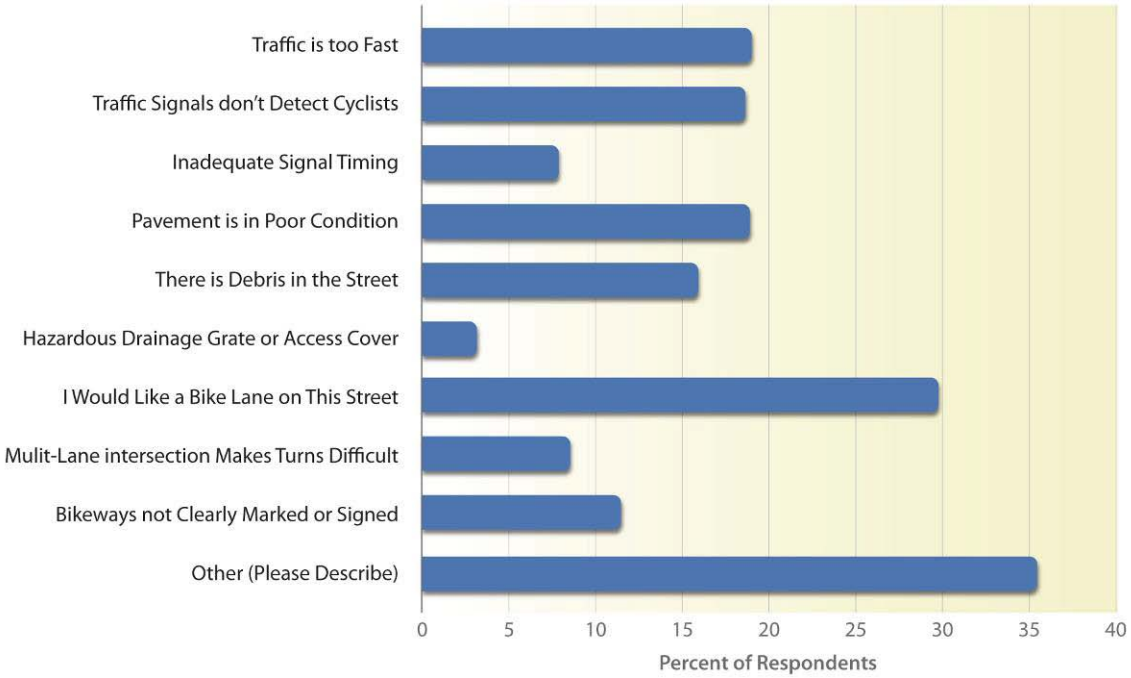


Figure 11 – SABA Survey respondents identified specific problems with streets and intersections

Frequently Mentioned Streets and Intersections

Seven streets were mentioned 10 or more times in the survey. They are listed here, along with some of the repeated concerns.

- H Street – The majority of responses complained about the absence of an eastbound bicycle lane, and that the westbound bicycle lane disappears as H Street passes McKinley Park.
- Folsom Boulevard – The absence of a bicycle lane between 59th and 65th Streets was a concern, as were the presence of debris (specifically gravel) in the bicycle lane and on the shoulder and the high speed of traffic. Further east, the intersections between Folsom Boulevard and Watt/Manlove, Butterfield Way, and Blue Ravine Roads were cited as being dangerous for various reasons.
- Riverside Boulevard – The narrow width and poor condition of the bike lane was noted several times, along with the intersections at Broadway, X Street, and Sutterville.

- Freeport Boulevard – The complaints about Freeport Boulevard almost all mentioned the fast traffic and absence of bicycle lanes near Sacramento City College.
- Elvas Avenue – Respondents complained about the fast traffic and confusing signage that implies cyclists should ride on the sidewalk.
- Fair Oaks Boulevard – Respondents found the stretch of Fair Oaks between Carlson and Munroe to be dangerous. This stretch includes the H Street underpass, and H Street bridge (which has no shoulder or bike lane), and the stretch of Fair Oaks Blvd between Howe and Munroe that has no shoulder or bike lane.
- M Street – Most respondents approved of the designated bicycle route and the lack of vehicular traffic but were frustrated by the frequent stop signs.

Bike Commute Month Final Report (2007)

Bike Commute Month in the Sacramento region is an annual campaign to encourage bicycling as an alternative to driving a car. In 2007, SACOG and its Transportation Management Organization partners coordinated the event for the third year.

In 2007, 4,133 bicyclists participated, logging 926,638 miles. This was an 80 percent increase over the mileage counted in the first year of the campaign (2005). The event-related counts serve as a benchmark regarding the rate of bicycling in the County.

Of the miles logged, 40 percent were attributed to work commutes, 3 percent to errands, and 57 percent were for recreation and exercise. The report estimates that these bicycle trips, if replaced by single-occupancy car trips, would account for 5,216 pounds of air pollution, 343,022 pounds of global-warming carbon dioxide, and 17,653 gallons of fuel.

Counts from future Bike Commute Months can provide valuable information on bicycling in Sacramento.

3. GOALS, POLICIES, AND IMPLEMENTATION MEASURES

Goals provide the context for the specific policies and implementation measures discussed in the Bicycle Master Plan. The goals provide a foundation for the Plan with a long-term vision for developing the countywide bicycle network and bicycling programs. **Goals** are broad statements of purpose; **policies** provide more details, defining the goals; and **implementation measures** are specific elements to meet the goals and policies.

The goals, policies, and implementation measures for the Bicycle Master Plan were compiled based on a review of various sources. These sources include a review of goals and policies from 19 US cities, three US counties, three states, and three international cities, as described in Appendix C. The Project Team also reviewed three jurisdictions' (Portland, Oregon; Marin County, California; and Davis, California) strong commitment to bicycle planning and their bikeway development processes. This review is in Appendix B. These locations can help serve as models for Sacramento County in its efforts to become a more innovative bicycling community.

As included in Chapter 2, the Team also reviewed the numerous County policies and planning documents that relate to bicycle and transportation planning. Based on these reviews and feedback collected from the public outreach effort, the Project Team developed a vision statement and four supporting goals with relevant policies and implementation measures. Many of the included statements are based on the County's General Plan, the previous County Bicycle Plan, and other jurisdictions' goals and policies. Agencies responsible for the implementation measures are referenced in parenthesis after each statement.

VISION STATEMENT

Provide safe, continuous, efficient, integrated, and accessible bicycle and pedestrian systems that encourage the use of the bicycle and walking as viable transportation modes and as forms of recreation and exercise.

GOALS

Goal 1: Increase bicycle usage in Sacramento County by 100% for all trips by 2030.

Goal 2: Reduce bicycle collisions and injuries from all causes by 50% of 2010 levels by 2030

Goal 3: Increase the total number of bicycle facilities by at least 5% each year.

Goal 4: Ensure funding proportionate to mode share for County bicycle facilities, transportation programs and staff support.

The remainder of this chapter lists the policies and implementation measures for each goal.

GOALS, POLICIES AND IMPLEMENTATION MEASURES

Goal 1

Increase bicycle usage in Sacramento County for all trips by 100 percent of 2010 levels by 2030.

Policy 1-1

Promote bicycling as a healthy transportation option that improves physical fitness and community well-being. Create and target programs to reach students at all educational levels, employers and employees, and resident groups.

Implementation Measures

1. Become a bicycle-friendly community by providing mobility for current and future residents of Sacramento County through the implementation of a safe and comprehensive bikeway system for all users. *(Sacramento County Department of Transportation)*
2. Apply for recognition as a Bicycle Friendly Community as determined by the League of American Bicyclists. *(Sacramento County Department of Transportation)*
3. Make bicycling more attractive than driving for short trips of five miles or less by developing and maintaining a bikeway system that provides direct, safe, and convenient travel by bicycle, throughout all neighborhoods in Sacramento County with connection to adjacent municipalities. *(Sacramento County Department of Transportation)*
4. Create, maintain, and publicize electronic Web pages and a paper map of bicycle facilities and update every three years. *(Sacramento County Department of Transportation)*
5. Develop and implement an effective signing and mapping (wayfinding) system to guide users of County bicycle routes (especially where barriers exist, such as rivers, freeways, and railroads). *(Sacramento County Department of Transportation/Sacramento County Regional Parks)*
6. Conduct bicycle counts and bicycle intercept surveys at selected locations (including choke points) and major Class I and II facilities *annually* during the same days and times to monitor changes in bicycle trips and opinions about bicycle facilities. *(Sacramento County Department of Transportation/local groups)*
7. Measure the success of the Bicycle Master Plan through user satisfaction surveys. *(Sacramento County Department of Transportation/Local Groups)*
8. Use census data, household survey data, bicycle counts, and other sources to determine a bicycle mode split for the County. *(Sacramento County Department of Transportation)*

Policy 1-2

Integrate land use and transportation planning to provide for more and safer bicycle trips.

Implementation Measures

1. Require all new development to be designed with multiple access points to promote regional bicycle circulation. *(Sacramento County Planning and Community Development)*
2. Condition land development projects based on the policies, guidelines, and improvements set forth in the Bicycle Master Plan. *(Sacramento County Planning and Community Development)*

3. Evaluate and implement modifications to the County's bicycle parking requirements in the zoning code to satisfy the demand for bicycle parking, while actively enforcing bicycle parking best practices. *(Sacramento County Planning and Community Development)*

Policy 1-3

Increase and improve bicycle access to employment, commercial, recreational, educational, social services, housing, and other transportation modes through planning and design.

Implementation Measures

1. Coordinate with the Sacramento Metropolitan Air Quality Management District (AQMD) on the review of proposed development projects. *(AQMD)*
2. Implement the goals, policies, and implementation measures outlined in the Bicycle Master Plan by training County staff on how to include bicycling facilities and bicyclists' needs into the project review process. *(Sacramento County Department of Transportation)*
3. Coordinate with Sacramento Regional Transit District on new design guidelines for light rail cars and buses that promote the use of bicycles. *(Sacramento Regional Transit District/Sacramento County Department of Transportation)*
4. Encourage bicycle parking and showers, changing facilities, and lockers at public buildings. *(Sacramento County Planning and Community Development)*
5. Require new office developments to provide secure bike parking, showers, changing facilities, and lockers. *(Sacramento County Planning and Community Development)*
6. Require developers to provide sufficient high-visibility, on-site secure bicycle parking to accommodate employees, students, and visitors. *(Sacramento County Planning and Community Development)*
7. Increase the number of multimodal trips that include bicycling for at least one trip segment by providing direct and convenient routes to regional and local transit stops. *(Sacramento County Department of Transportation/ Sacramento Regional Transit District)*

Policy 1-4

Expand established education and encouragement programs, and develop new education programs to encourage and support bicycling.

Implementation Measures

1. Expand established outreach programs such as "May is Bike Month" by securing ongoing funding, and expand and develop new education programs to grow bicycle ridership. *(Sacramento County Department of Transportation/SACOG/AQMD/Sacramento Transportation Management Association)*
2. Work with the County's Department of Health and Human Services on decreasing County obesity through a health/bicycling marketing campaign. *(Sacramento County Department of Transportation/Sacramento County Health and Human Services)*
3. Support programs that help low-income residents own and operate a road-ready bicycle.
4. Support bicycle parking at major events and event centers. *(local groups)*

5. Provide encouragement programs by seeking grant funding and other funding sources. Create incentive programs that make commuting, running errands, and shopping easier for bicyclists.
6. Secure ongoing funding to support bicycle education courses for all Sacramento County residents and employees. *(Sacramento County Department of Transportation/ Sacramento Transportation Management Association)*

Goal 2

Reduce bicycle collisions and injuries from all causes by 50 percent of 2010 levels by 2030.

Policy 2-1

Reduce the total number of bicycle collisions and injuries through education, encouragement, and enforcement programs.

Implementation Measures

1. Monitor bicycle collision/incident data to identify trends and specific problem areas, including American River Parkway monthly reports and yearly collision/incident data. *(Sacramento County Department of Transportation/Sacramento County Sheriff Department)*
2. Coordinate with enforcement agencies to target locations with high numbers of bicycle-vehicle collisions. (*Sacramento County Sheriff Department)*
3. Work with Sacramento County Department of Transportation, Sacramento County Sheriff's Department, and local groups to implement bicycle education programs to targeted groups, including elementary schools, middle schools, businesses, and community centers. *(Sacramento County Department of Transportation/Sherriff's Department/Local Groups)*
4. Work with County schools to expand the Safe Routes to School Program. Encourage bicycle education classes for elementary school students in correlation with each Safe Routes to School project*. (Sacramento County Office of Education/Sacramento County Department of Transportation)*
5. Ensure that Class I paths have emergency vehicle access that is designed in coordination with the Fire District and the Sheriff's Department.

Policy 2-2

Provide an appropriate bicycle network for all bicyclist types and skill levels by developing safe, comfortable, low-stress bikeways such as bicycle boulevards and trails that reduce conflicts between bicyclists and drivers.

Implementation Measures

1. Establish criteria for creating bicycle boulevards.
2. Create and promote the use of bicycle boulevards with wayfinding signs, inclusion on map, and through targeted promotion to potential users.
3. Ensure that repair and construction of transportation facilities minimizes disruption to the bicycling environment. *(Sacramento County Department of Transportation)*

4. Require developers to create traffic control plans during construction to ensure undisrupted bicyclist access and safety. *(Sacramento County Planning and Community Development)*
5. Develop and implement a maintenance program that adequately accommodates bicycles and includes a hazard and maintenance reporting system. *(Sacramento County Department of Transportation)*
6. Monitor safety and security problem areas and implement corrective measures where necessary.

Goal 3

Increase the total number of bicycle facilities by at least 5 percent each year.

Policy 3-1

Implement the Bicycle Master Plan, which identifies existing and future needs for all levels of cyclists.

Implementation Measures

1. Track and report annually to SacBAC and the Board of Supervisors the success of the Bicycle Master Plan based on percent completed of the total bikeway system for new Class I, II, and III bicycle facilities (linear miles of Class I , II, and III added to the system per year). *(Sacramento County Department of Transportation)*
2. Annually review the Bicycle Master Plan funding priorities and criteria contained in Appendix G with SacBAC for on- and off-road bikeways and bike bridges. *(SacBAC/Sacramento County Department of Transportation)*
3. Require all Capital Improvement Projects to conform to the Bicycle Master Plan. *(Sacramento County Department of Transportation)*
4. Support the Sacramento Area Council of Governments' (SACOG) guidelines and policies for Complete Streets. *(Sacramento County Department of Transportation)*
5. Eliminate gaps in the bicycle network to improve connectivity between destinations, and expand the network of bikeways that offers riders an array of route choices. *(Sacramento County Department of Transportation)*
6. Stripe bicycle facilities in accordance with the Bicycle Master Plan when performing street resurfacing projects. *(Sacramento County Department of Transportation)*
7. Require Class II bike lanes on all new arterial and collector streets. *(Sacramento County Department of Transportation)*
8. All new freeway over-crossings and under-crossings or interchange projects will incorporate the needs of pedestrians and bicyclist as part of the project design and construction or else alternate separate pedestrian and bicycle facilities are to be developed and constructed concurrently with the project for motor vehicles. *(Sacramento County Department of Transportation/Caltrans)*
9. Increase and improve access to the American River Parkway Bike Trail and other Class I trails. *(Sacramento County Regional Parks/Sacramento County Department of Transportation)*
10. Consult with SACBAC on any project that eliminates or reduces bikeways or facilities prior to project implementation.

Policy 3-2

Collaborate with regional agencies to coordinate planning and development of County bikeways to support a regional bicycle network.

Implementation Measures

1. Encourage bicycle plan adoption in all cities and counties in the Sacramento Metropolitan area and connectivity of bicycle facilities. *(SACOG)*
2. Construct a continuous and regional Class I bike path network in conjunction with major economic attractors and events; greenways; along major state, natural, and manmade corridors; and where otherwise feasible. *(Sacramento County Regional Parks)*

Goal 4

Ensure funding proportionate to mode share for County bicycle facilities, transportation programs, and staff support.

Implementation Measures

1. Aggressively pursue and prioritize funding for bicycle planning, bicycle facility development, and education programs. *(Sacramento County Department of Transportation/Sacramento County Regional Parks)*
2. Update the Bicycle Master Plan as required to reflect new policies and/or requirements for bicycle funding. *(Sacramento County Department of Transportation)*
3. Assess the use of developer fees and/or improvement districts, and enforce fees submittal and compliance to contribute to improved bicycle facilities. *(Sacramento County Department of Transportation/Sacramento County Planning and Community Development)*
4. Require land development projects to finance and install bicycle facilities and multi-use trails within the development as appropriate and where recommended in the Bicycle Master Plan. This will ensure connectivity within the development and to existing or planned facilities that connect to the development. *(Sacramento County Planning and Community Development)*
5. Establish development fees to include building bicycle and pedestrian facilities that connect proposed developments with existing bicycle and pedestrian facilities outside the proposed development. *(Sacramento County Department of Transportation)*
6. Encourage multi-jurisdictional funding applications. *(Sacramento County Department of Transportation/SACOG)*

4. EXISTING CONDITIONS

This summary of existing conditions describes the status of bikeway facilities in Sacramento County. The discussion focuses on existing facilities, regional and multi-modal connections, and support facilities and programs.

Conditions in Sacramento County vary from suburban neighborhoods to rural suburban communities and rural/agricultural areas. The range of conditions results in a variety of bicycle facilities, including Class I bike paths; Class II bicycle lanes on roads with curbs and gutters, or paved shoulders on rural roads; and Class III bike routes.

EXISTING BICYCLE NETWORK

Today Sacramento County has 203.9 miles of existing bikeways. The network includes 72.3 miles of Class I bike paths, 122.2 miles of Class II bike lanes, and 9.4 miles of Class III bike routes. The maps at the end of this chapter show the existing bikeway facilities within the Sacramento County area.

Class I Bike Paths

Generally, Class I Bike Paths are located along the American River or the abandoned Sacramento Northern Railroad line. Table D-1 in Appendix D lists the existing Class I bikeways. These include:

- American River Parkway
- Sacramento Northern Trail
- Mather Field
- Folsom South Canal

American River Parkway Class I Bike Path

Class II Bike Lanes and Class III Bike Routes

Many of the major roads in the developed areas of the County have some form of bicycle facility. However, some of these facilities do not meet the current County Improvement Standards (5-foot width from stripe to edge of pavement) or Caltrans standards (3-foot width from stripe to edge of pavement) for streets with frontage improvements and no on-street parking. These streets may also not have proper markings or signage, or may be discontinuous along the roadway. These facilities that do not meet current County or Caltrans standards are not considered existing bikeways in this Plan. However, the facilities that do meet these standards are either Class II bike lanes or Class III bike routes.

Jan Drive Class II Bike Lane

Table D-2 lists the existing Class II bike routes. These facilities are most common on arterial roadways. Table D-3 lists Class III bike routes; these are most commonly on residential roadways.

Since the previous Sacramento County Bicycle Master Plan was completed, the County's Class I bicycle infrastructure has continued to expand. Each year, additional segments of the bikeway network are completed, closing gaps between existing bikeways and linking to destinations. For example, the most recently completed project was the extension of the Sacramento Northern Class I path to Rio Linda.

PAST EXPENDITURES ON BICYCLE FACILITIES

Based on the existing network, an estimate of past expenditures is possible. These estimates are in 2009 dollars, and Chapter 6 presents an explanation of 2009 per mile costs for the three bikeway classes. The County has 73.5 miles of Class I bike paths, which equals $58,212,000 ($792,000 per mile). For on-street facilities, the County has 120.1 miles of Class II bike lanes equaling $27,022,500 (approximately $225,000 per mile) and 8.3 miles of Class III bike routes equaling $73,824 ($5,280 per mile).

REGIONAL AND MULTI-MODAL CONNECTIONS

The previous chapter identified the goals and objectives for the County's bikeway system. These goals include a bikeway system that is connected to the bike networks of surrounding communities and to the larger regional bikeway network. The County also wants a true multi-modal transportation system that makes bicycling easier for those who want to park their bikes or take them onboard a Sacramento Regional Transit District (RT) bus or light rail train. Finally, the County wants to provide the support facilities and amenities that can make bicycling a more enjoyable experience for more people. This section looks at these aspects of the existing system.

Regional Connections

A recurring theme throughout the planning process was a desire by bicyclists to ride on bikeways and to keep traveling for long, uninterrupted rides. Many cyclists expressed a desire for bikeways that cross city and county boundaries. Perhaps one of the best examples of this type of continuous, regional path is the American River Parkway, a Class I bike facility connecting downtown Sacramento with Folsom Lake through unincorporated Sacramento County.

Other desirable regional connections include the Dry Creek Corridor that would connect the Sacramento Northern Trail to Placer County and Roseville and a connection between Elk Grove and downtown Sacramento along the Sacramento River levee. County staff recognizes the desire of cyclists to connect with regional bike paths. They are working with the planning and engineering staff of surrounding communities, as well as with regional planning agencies, to create a true regional bikeway network.

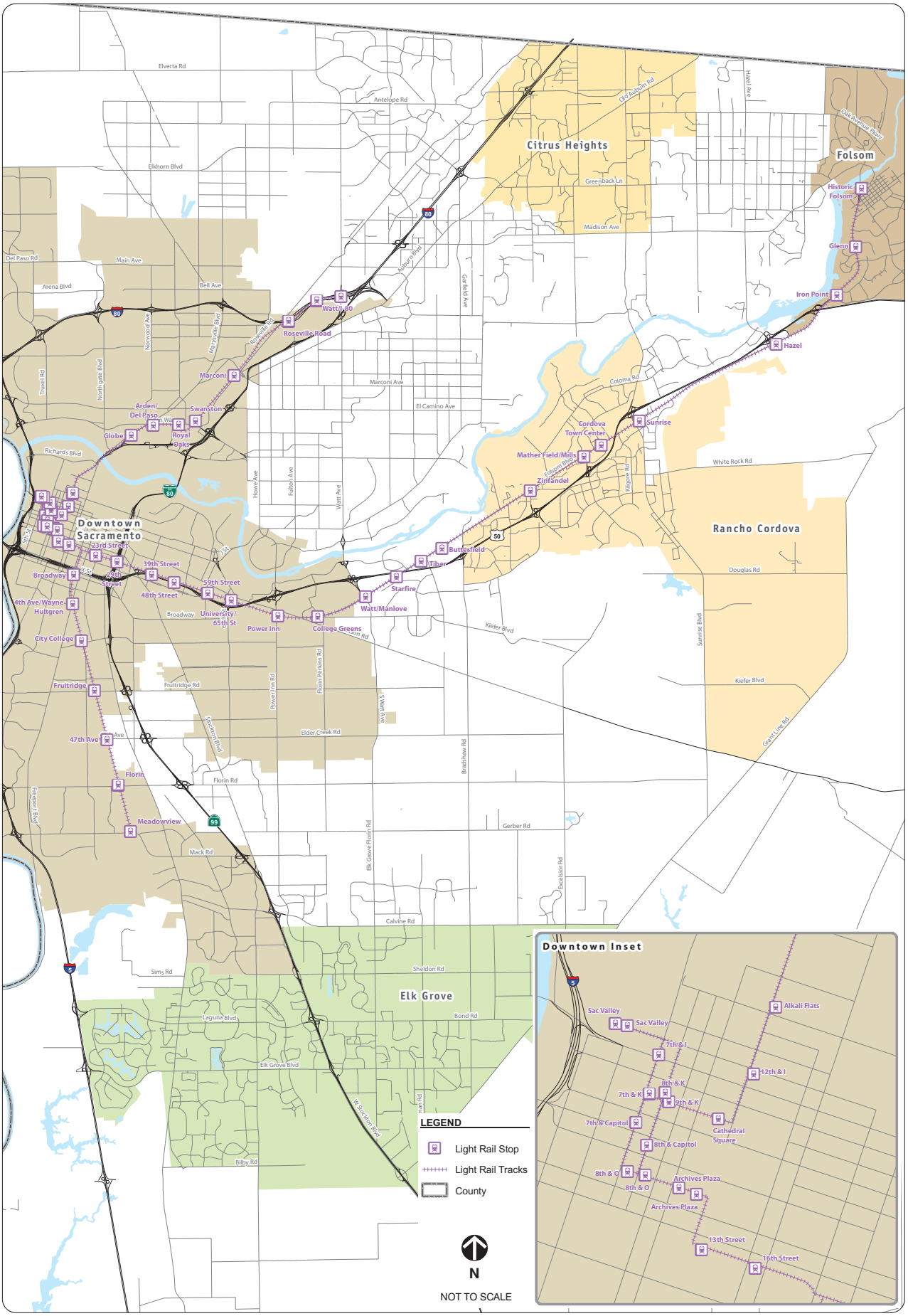
Multi-modal Connections

The primary transit providers serving unincorporated Sacramento County are Sacramento RT, Greyhound Bus, and Amtrak (Capitol Corridor and San Joaquin's).

RT buses are equipped with two front-mounted bike racks, available on a first-come, first-serve basis. Bikes are not allowed inside RT buses unless it is the last bus on the route that day and the bike carrier is full. Bikes are allowed on RT light rail trains, but space is limited. See Figure 12 for a map of all RT LRT stations. Both Amtrak and Greyhound provide inter-city transit service. Passengers who want to take a bike on a Greyhound bus must securely pack it in a wood or canvas container, which is then stowed with the rest of the luggage underneath the bus. However, it is possible to roll your bike right on to some Amtrak passenger trains and secure it in a bike rack, unboxed. Availability of this service varies widely from train to train and from station to station. Passengers can reserve space for bicycles when they make a ticket reservation.

SUPPORT FACILITIES

Bikeway support facilities include physical infrastructure designed to accommodate or promote bicycling. Support facilities include everything from bicycle racks, bike lockers, water fountains and benches along trails, lighting, maps and trail markers along routes, restrooms, and shower facilities. The entire length of the Jedediah Smith Bike Trail includes restrooms, drinking fountains, picnic areas, and parking facilities.



LIGHT RAIL TRANSIT ROUTES AND STOPS

FIGURE 12

Support facilities are important because insufficient facilities may discourage potential cyclists and walkers. In Sacramento County, the installation of secure bicycle parking is required as part of the zoning code, to encourage the use of bicycles as an alternative to automobile use. The County's Zoning Ordinance requires that all new development provide bicycle parking. Most schools, parks, and other public buildings have bike parking. To encourage shower and locker facilities, the zoning code allows the number of automobile parking spaces to be reduced by a maximum of two percent if shower and locker facilities are provided in developments with one hundred or more employees. Figure 13 presents the general location of bicycle parking facilities and shower and changing facilities. All of the existing shower facilities are not intended for use by the general public.

Existing lighting and signage on Watt Avenue over the American River Parkway

NEEDS ANALYSIS

Bicycle Safety

Bicycle safety was evaluated as part of the Master Plan development process. In particular, existing available bicycle collision data was reviewed to identify collision locations within the unincorporated County area.

Auto/bicycle collision data was provided by Sacramento County and by the California Highway Patrol. This data represents all bicycle/vehicle-related collisions occurring in Sacramento County during the seven-year period from January 2001 through December 2007. Table 3 summarizes the collision data by year and severity of collision. The formation of the City of Rancho Cordova changed the number of collisions after July 2003 when the City was incorporated. Twenty fatalities were reported during the seven-year period, with the most occurring in 2002. Most of the collisions reported (86 percent) resulted in some form of injury. Figure 14 shows the location of reported bicycle collisions between 2001 and 2007.

Note that other types of bicycle-related collisions do occur, including bike/bike and bike/pedestrian, but very little data is reported on those types of collisions.

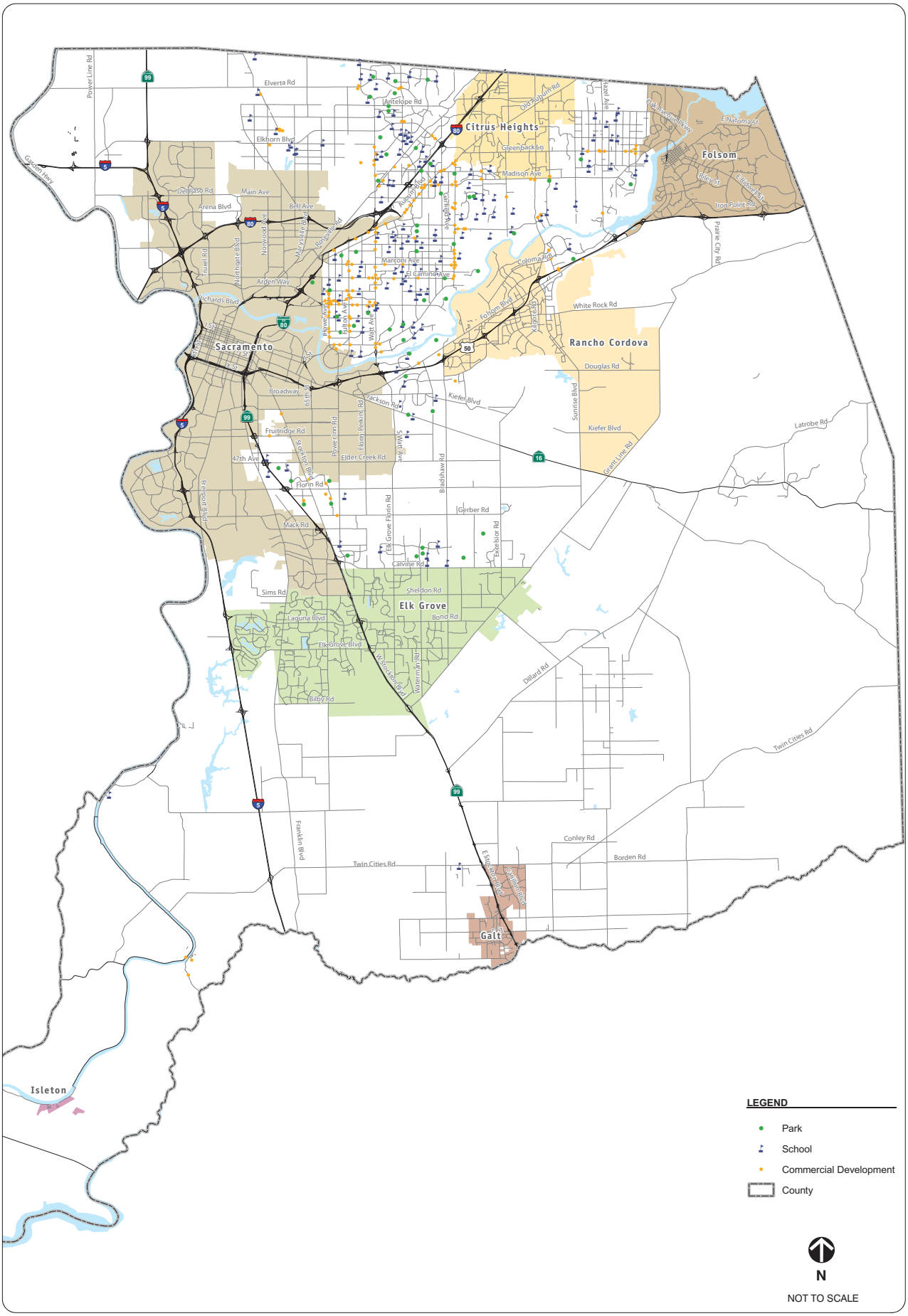

Citrus Heights
Folsom
Rancho Cordova
Sacramento
Elk Grove
Galt
Isleton
Elverta Rd
Antelope Rd
Elkhorn Blvd
Del Paso Rd
Main Ave
Arena Blvd
Bell Ave
Arden Way
Marconi Ave
El Camino Ave
Old Auburn Rd
Madison Ave
Green Jacklin
Oak Avenue Parkway
E Natoma St
Riley St
E Bidwell St
Iron Point Rd
Prairie City Rd
Coloma Rd
White Rock Rd
Folsom Blvd
Douglas Rd
Kiefer Blvd
Sunrise Blvd
Grant Line Rd
Latrobe Rd
Broadway
Jackson Rd
Fruitridge Rd
47th Ave
Florin Rd
Elder Creek Rd
Power Inn Rd
Florin Perkins Rd
Stockton Blvd
Bradshaw Rd
Gerber Rd
Mack Rd
Calvine Rd
Elk Grove Florin Rd
Excelsior Rd
Sheldon Rd
Bond Rd
Sims Rd
Laguna Blvd
Elk Grove Blvd
Bilby Rd
Waterman Rd
Dillard Rd
Twin Cities Rd
Conley Rd
Borden Rd
Franklin Blvd
Power Line Rd
Garden Hwy
Truxel Rd
Northgate Blvd
Norwood Ave
Watt Ave
Hazel Ave
Sunrise Blvd
Folsom Blvd
LEGEND
Park
School
Commercial Development
County
N
NOT TO SCALE

TABLE 3: SACRAMENTO COUNTY BICYCLE COLLISION SUMMARY (JANUARY 2001 THROUGH DECEMBER 2007)

Year	Total Collisions	Injury	Killed
2001	255	211	4
2002	309	271	7
2003[1]	233	197	3
2004	254	217	2
2005	198	171	1
2006	178	150	1
2007	237	211	2
TOTAL	1,664	1,428	20

Note: [1]Rancho Cordova incorporated in July 2003
Source: Sacramento County Collision Data

Trends and Comparisons

Table 4 summarizes the collision data by type of collision. A reported 1,664 collisions occurred between January 2001 and December 2007. The most common type of collision was a broadside, and the second most common type of collision reported was a sideswipe. The most common cause cited for the collisions were improper turning, right-of-way violation by the automobile, and the bicyclist riding on the wrong side of the road.

Analysis of the data indicates that 77 percent of the collisions occur during the day with the highest hours being from 2:00 to 3:00 PM and from 7:00 to 8:00 AM. The two highest months for collisions are June and September.

TABLE 4: AUTO/BICYCLE COLLISIONS BY TYPE OF COLLISION

Type of Collision	Number	Percentage
Broadside	472	28.3%
Sideswipe	72	4.3%
Head-on	46	2.8%
Rear end	33	2.0%
Vehicle Pedestrian	8	0.5%
Hit Object	6	0.4%
Not Stated	11	0.7%
Other	1,016	61.0%
TOTAL	1,664	100%

Source: Sacramento County Collision Data

Table 5 compares the collision statistics for Sacramento County to other comparable California cities for the two-year period from January 2003 through December 2004. Myriad factors contribute to bicycle collisions. For example, the level of development or urbanization, the number of school age children in the population, the volume and speed of traffic on local streets, the type of bike facilities (Class I, II, or III) that are most prevalent in the community, and the adopted design standards for roads and bike facilities. Drawing any inferences is difficult beyond the fact that Sacramento County's collision rate (0.41 collisions per 1,000 persons) for the two-year period between 2003 and 2004 is above the average for comparable cities in the region.

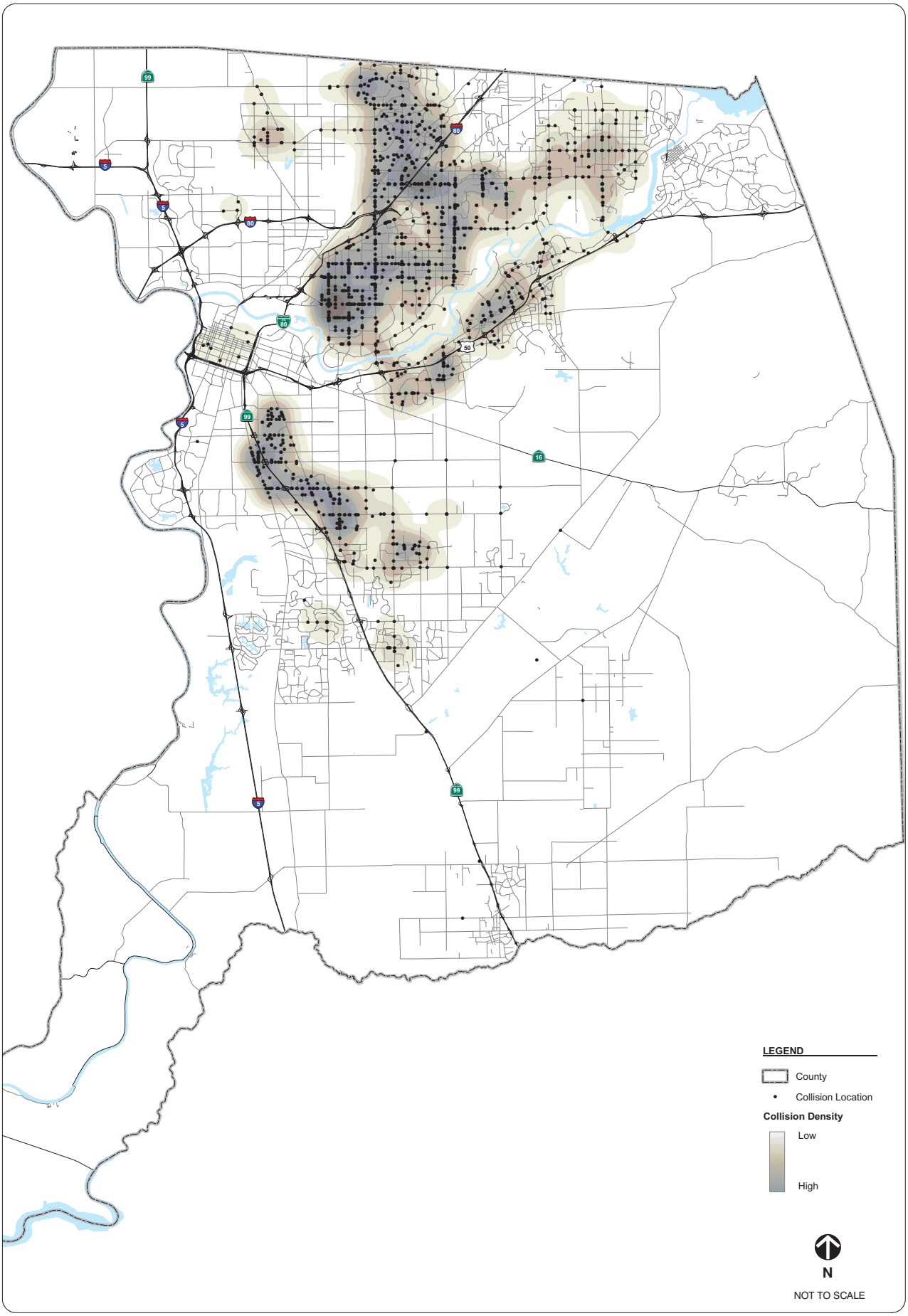
TABLE 5: COMPARISON OF BICYCLE COLLISIONS ON LOCAL ROADS PER 1,000 PERSONS

Jurisdiction	Population	2003 Fatal	2003 Injury	2004 Fatal	2004 Injury	Average Collisions per Year[1]	Collisions per 1,000 Persons
Sacramento Co	591,000	3	197	2	217	243.5	0.41
Roseville	105,000	0	23	0	30	26.5	0.25
Citrus Heights	87,000	0	29	1	32	31	0.36
Folsom	69,000	0	11	0	16	13.5	0.20
Fairfield	106,000	0	35	1	37	36.5	0.34
AVERAGE	191,600	0.6	59	0.8	66.4	70.2	0.37

Note: [1] Average collisions per year for a 2-year period (2003-2004)

Source: California Highway Patrol

Statewide Integrated Traffic Records System (SWITRS) Statistics



2001-2007 BIKEWAY COLLISION DENSITY

FIGURE 14

Safety Programs

Safety is a major concern for both existing and potential users of the bikeway system, and perceptions about safety are one of the main reasons people do not bicycle more often. This concern is understood, given the potential for serious injuries for bicyclists who are involved in collisions with vehicles. These reasons make safety education for both children and adults an important component of this plan.

Sacramento County is working toward improving bicycling safety for all of its residents. Perhaps the highest profile safety program is the Care About Neighborhoods (CAN) program. The CAN program includes the CAN goes to school (CAN GTS) program that educates elementary school children, grades 1-4, on pedestrian and bicycle safety, how to wear a bike helmet, and other rules of the road.

Bicyclist Survey Results

For the Plan, a survey was conducted in spring 2008. The survey results, presented in Appendix A, provide a glimpse of how the bikeway system is currently used and insight into the type of system that residents prefer. Most survey respondents use the County's bike facilities three to five days a week for exercise or recreation purposes, and they prefer to use the Class I Bike Paths. Many residents reported that they do not feel comfortable riding on the Class II bike lane facilities because of vehicle traffic and speed. Because of this, most residents would prefer to see more Class I facilities, and they would like these facilities to be linked so they access major destinations.

American River east of Sunrise

The survey and the Public Meetings also provided information on potential improvements that are needed with respect to support facilities:

- Maps of bike facilities – Many comments requested easier access to maps, and for maps to be kept up-to-date as improvements are made to the bike network. Suggestions included posting a current map on the County's Web site and in public locations, as well as widely distributing paper maps, either by mailing them to County residents, or by increasing the locations where they are available.

- Signs – Many respondents requested more and better signs for all types of bike facilities. For Class I facilities, the requests were for installation of signs, maps, and trail markers along paths, for three main reasons. First, in the event of an emergency, injured bicyclists can call 911 and identify their location. Second, riders will know how long it will take to complete a trail and where they will end up. Finally, signs can identify the locations of other bike facilities. A related request was for street names to be painted on bridges that span the Class I facilities so riders can better identify their locations.

- Lighting/Security on existing and proposed Class I facilities.
- Bike parking – At several locations, bike racks need to be installed or updated for convenience and security.

Other needed support facilities include:

- Rest stops on Class I bike paths that include drinking fountains and bathrooms
- Trash cans at strategic points to reduce litter along bikeways
- Cameras under some of the bridges to improve security
- Additional activities along Class I facilities such as wildlife markers, historical plaques, and landscaped areas with seating
- Traffic signal detectors for bikes
- High-visibility mid-block crossings

Improvements commuting bicyclists would like to see include more shower facilities at work locations, more bike parking, and modifications to traffic signals to enable them to "detect" bicyclists as well as autos.

Estimated Bicycle Use

Table 6 provides journey to work data from the 2000 U.S. Census, showing that the mode split for bicycling in Sacramento County is 1.4 percent of all trips to work. This means that of Sacramento County's year 2000 workforce population of 217,000, more than 3,000 persons used the bicycle as their primary means of transportation to work. Table 6 compares this figure to other local jurisdictions as well as the statewide average. Sacramento County's split is nearly double the state average of 0.8 percent for bicycle to work mode. The mode split is the highest in the region. It should be noted that this figure does not include all transportation-related bicycle trips. Persons who primarily use a car for their work commute but occasionally bicycle are not counted. Shopping, medical, and other trip purposes are also excluded from this figure. In addition, children's trips to school are not calculated.

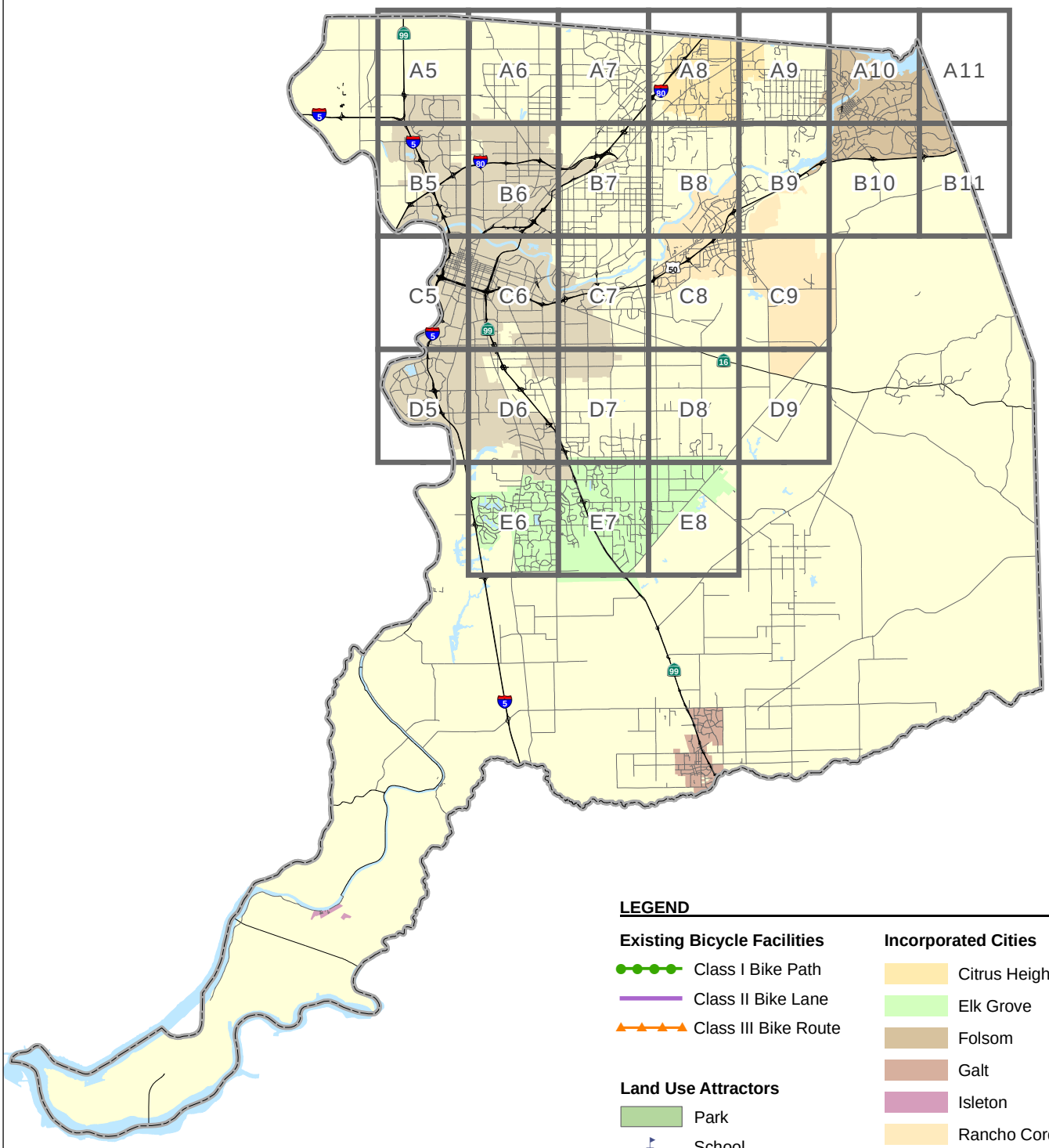
TABLE 6: EXISTING MODE SPLIT (%) JOURNEY TO WORK						
Location	**Drive Alone**	**Carpool**	**Public Transportation**	**Bicycle**	**Walk**	**Other***
Lincoln	76.8%	15.9%	0.0%	0.4%	2.8%	4.0%
Rocklin	81.4%	9.4%	0.8%	0.5%	1.4%	6.6%
Roseville	82.3%	9.9%	1.3%	0.4%	0.9%	5.1%
Sacramento	71.0%	16.3%	4.6%	1.4%	2.8%	3.9%
Folsom	79.4%	10.2%	1.4%	0.6%	2.2%	6.2%
Santa Rosa	77.1%	12.3%	2.2%	0.9%	2.2%	5.3%
West Sacramento	70.9%	19.9%	2.7%	1.3%	2.1%	3.0%
State of California	71.8%	14.5%	5.1%	0.8%	2.9%	4.8%

Note: * Other means – (includes worked at home, motorcycle, other)
Source: Census 2000 Journey to Work

Sacramento County has a great opportunity to build on the existing bicycle mode split. Implementation of the SCBMP could potentially double the mode split in the County to reach the state goal mode split of 2.8 percent. If the County could double the bicycle mode split by year 2030, this would mean that an estimated 10,300 daily bicycle commuters would eliminate 1,648,000 vehicle trips, 24,720,000 vehicle miles traveled, and 22,930,000 lbs of carbon dioxide emissions per year in the year 2030. These figures are based upon an estimated workforce of 367,454 persons, as envisioned in the proposed General Plan, resulting in 10,300 daily bicycle commuters who bicycle to work 160 days per year with an average one-way commute length of 7.5 miles.

Existing Conditions Maps

The following pages show the existing conditions maps.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C7
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C9
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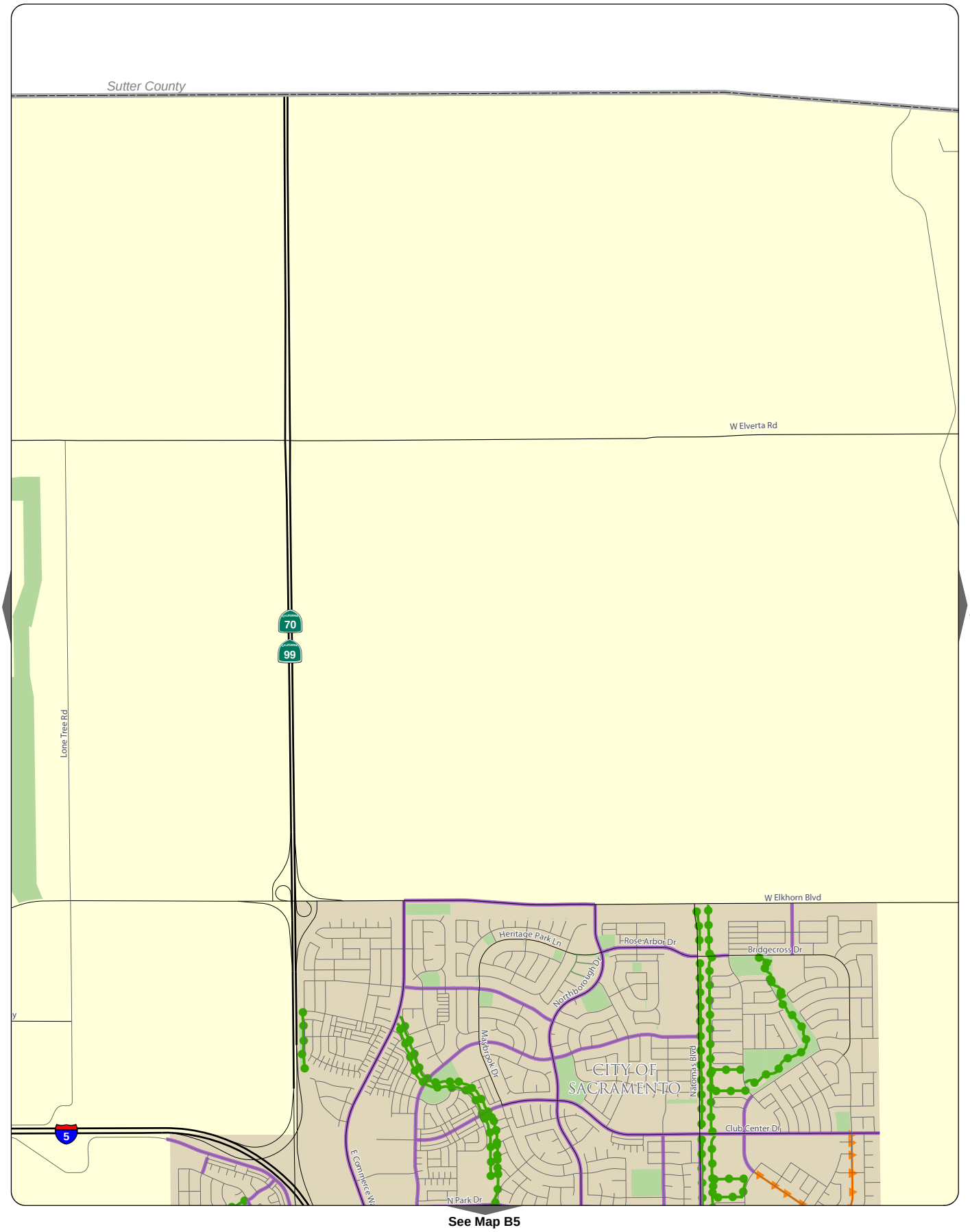
E8
LEGEND
Existing Bicycle Facilities
Class I Bike Path
Class II Bike Lane
Class III Bike Route
Land Use Attractors
Park
School
Incorporated Cities
Citrus Heights
Elk Grove
Folsom
Galt
Isleton
Rancho Cordova
Sacramento
N
NOT TO SCALE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Northborough Dr
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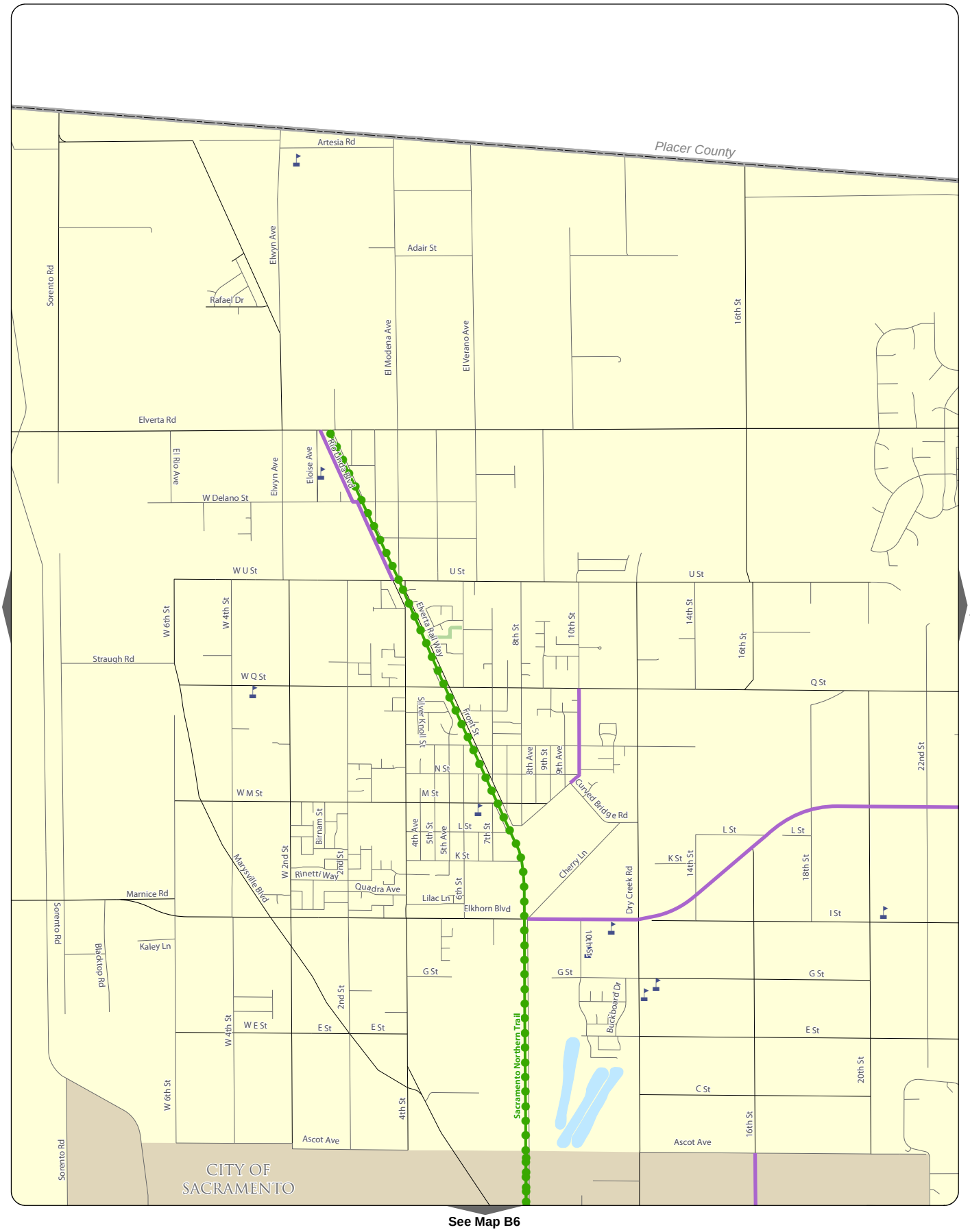
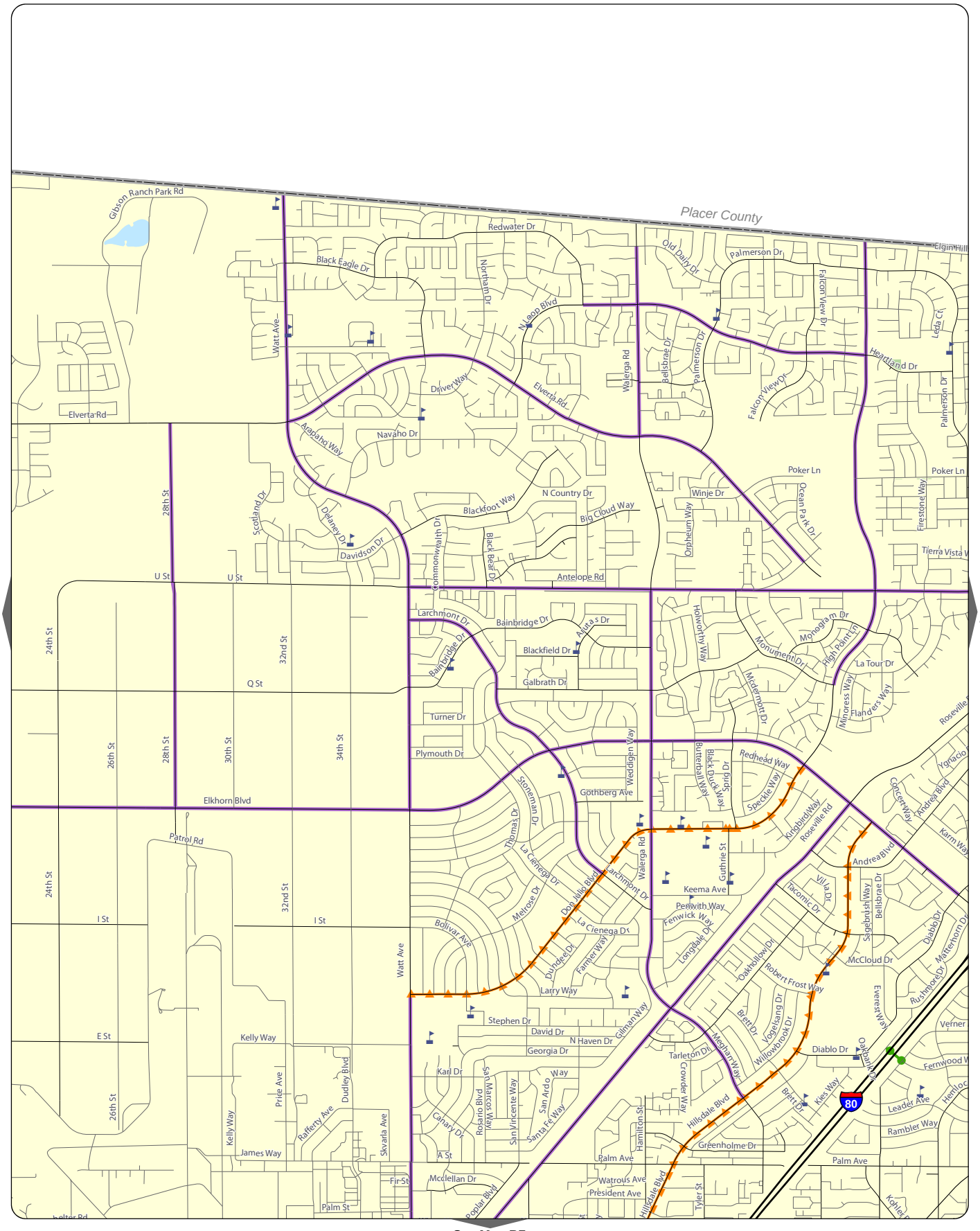
CITY OF SACRAMENTO
Club Center Dr
E Commerce Way
N Park Dr
See Map A4
See Map A6
See Map B5



See Map A5

See Map A7

See Map B6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Northam Dr
Watt Ave
N Loop Blvd
Old Dairy Dr
Palmerson Dr
Falcon View Dr
Leda Ct
Heartland Dr
Driver Way
Elverta Rd
Walerga Rd
Bellsbrae Dr
Navaho Dr
Arapaho Way
Scotland Dr
Delaney Dr
Davidson Dr
28th St
Blackfoot Way
N Country Dr
Big Cloud Way
Winje Dr
Poker Ln
Ocean Park Dr
Firestone Way
Tierra Vista W
Commonwealth Dr
Black Bear Dr
Orpheum Way
Antelope Rd
U St
24th St
32nd St
Q St
Larchmont Dr
Bainbridge Dr
Agras Dr
Blackfield Dr
Galbrath Dr
Monogram Dr
High Point Ln
La Tour Dr
Monument Dr
Mcdermott Dr
Monress Way
Flanders Way
Roseville
Turner Dr
Plymouth Dr
26th St
30th St
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Butterbrook Way
Black Duck Way
Sprig Dr
Redhead Way
Speckle Way
Kingbird Way
Roseville Rd
Ygnacio
Concert Way
Andrea Blvd
Karm Way
Elkhorn Blvd
Gothberg Ave
Weddigen Way
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Thomas Dr
La Cienega Dr
Walerga Rd
Guthrie St
Andrea Blvd
Patrol Rd
Dupa Vallee Blvd
Larchmont Dr
Keema Ave
Penwith Way
Fenwick Way
Longdale Dr
Vila Dr
Iacomic Dr
Sagebrush Way
Bellsbrae Dr
Diablo Dr
Matterhorn Dr
I St
Melrose Dr
Bolivar Ave
Dundee Dr
Farmer Way
Oakhollow Dr
Robert Frost Way
McCloud Dr
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Everest Way
Watt Ave
Larry Way
Stephen Dr
David Dr
Gilman Way
N Haven Dr
Georgia Dr
Vogelsang Dr
Willowbrook Dr
Brett Dr
Verner
Diablo Dr
Oakbank Dr
Fernwood W
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Kelly Way
Karl Dr
Tarleton Dr
Crowder Way
Meghan Way
Kies Way
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Tyler St
Pride Ave
Dudley Blvd
Rafferty Ave
Skyvarla Ave
James Way
A St
Mcclellan Dr
Fir St
Palm St
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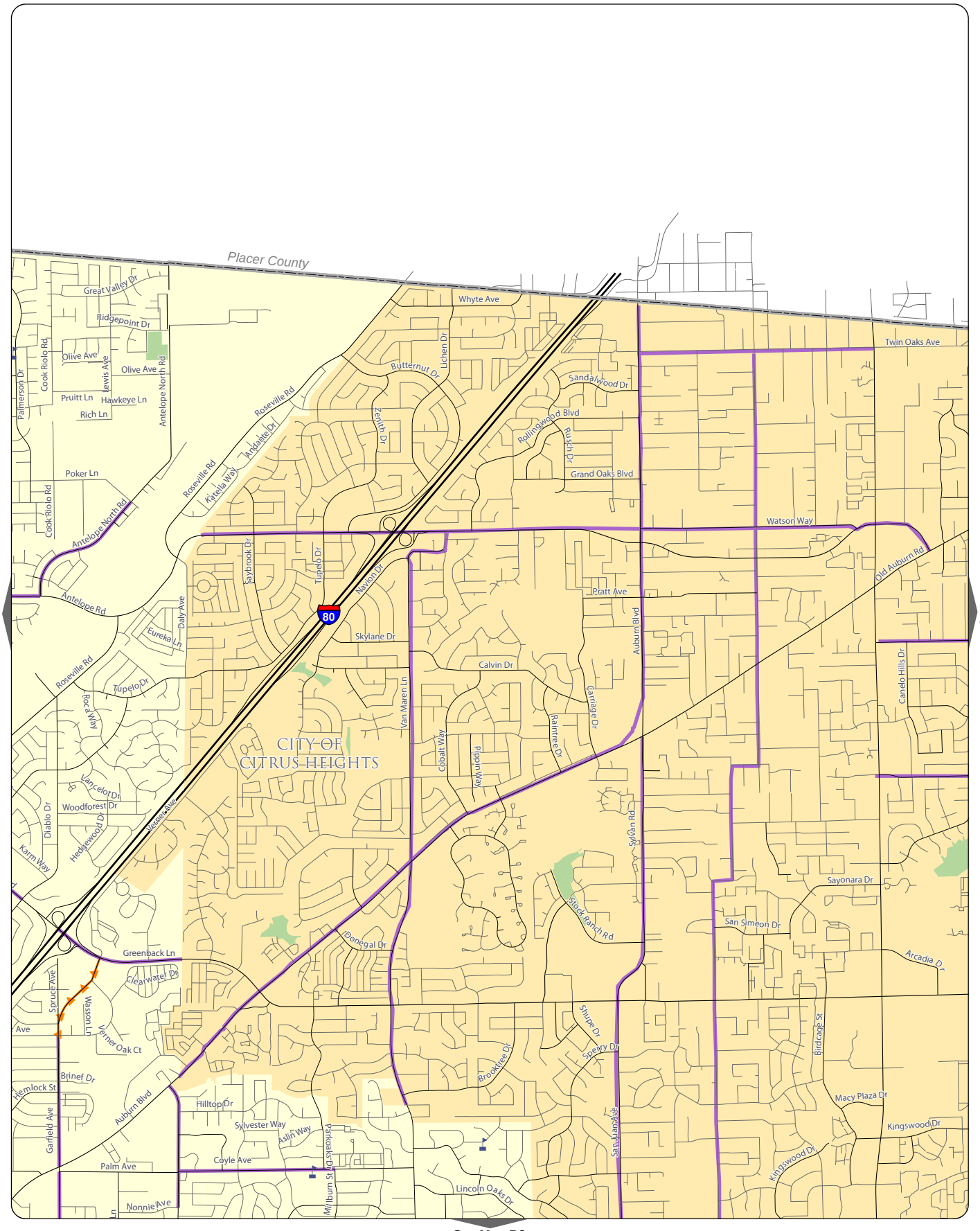
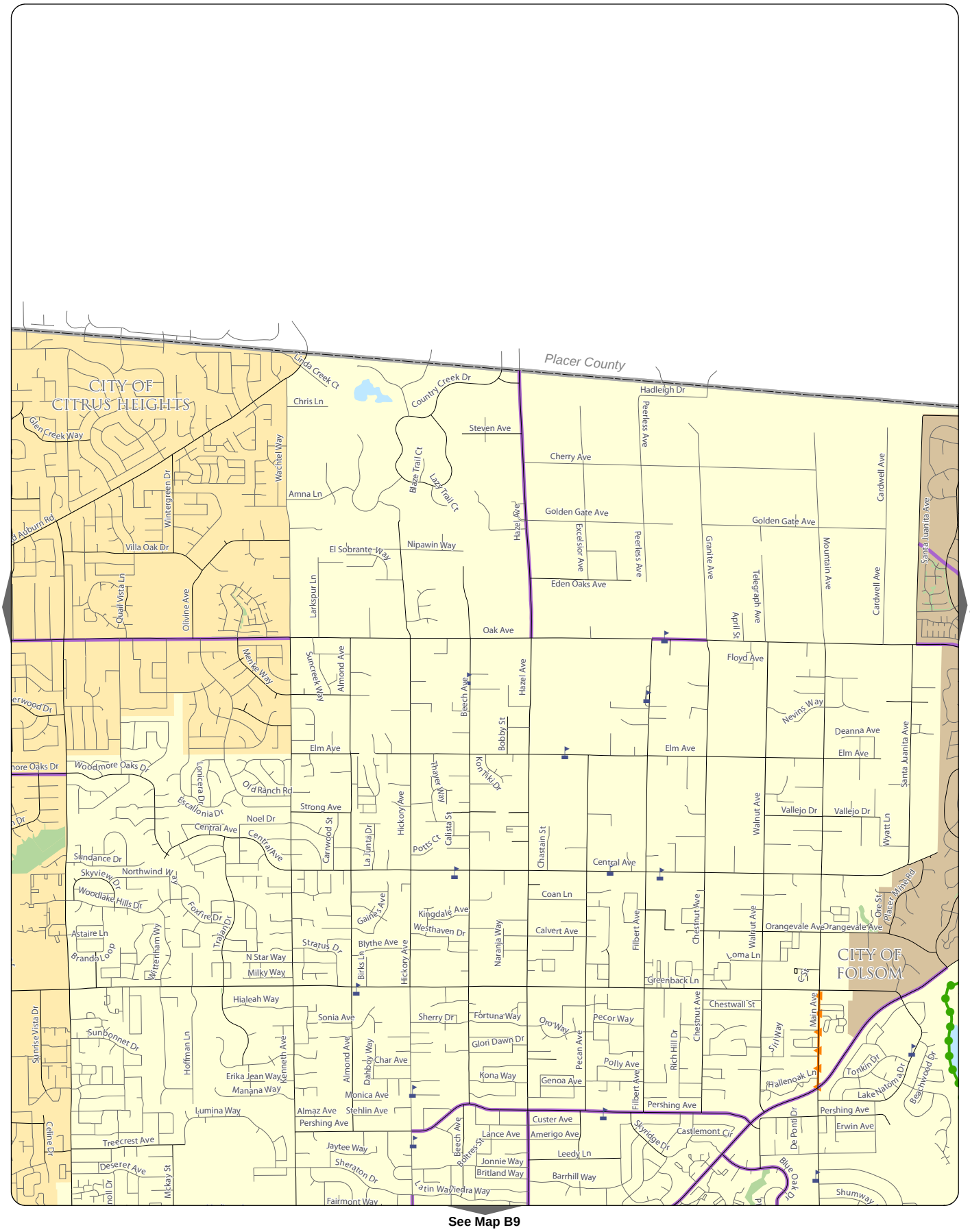
See Map A6
See Map A8
See Map B7



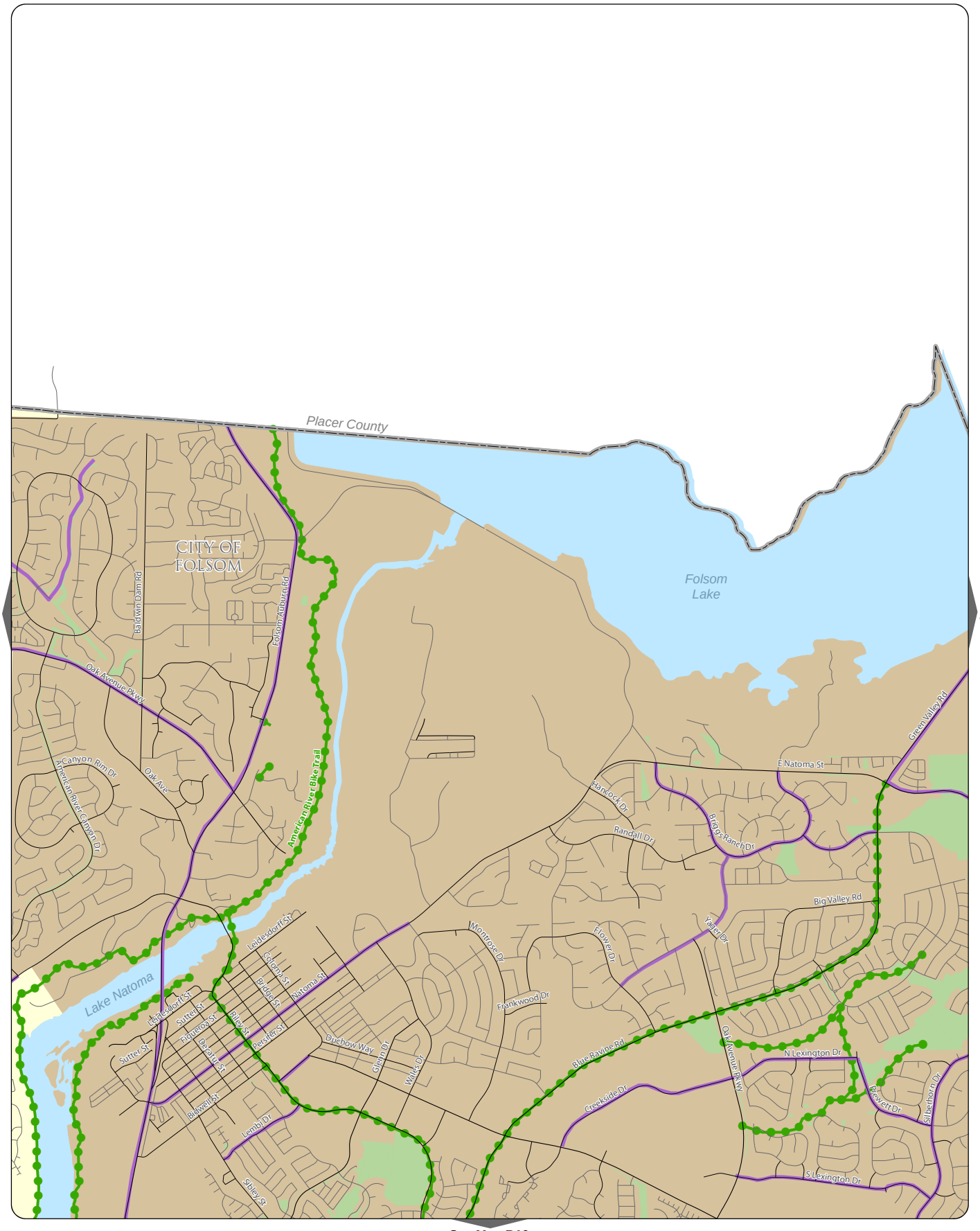
SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP A8
EXISTING BICYCLE FACILITIES



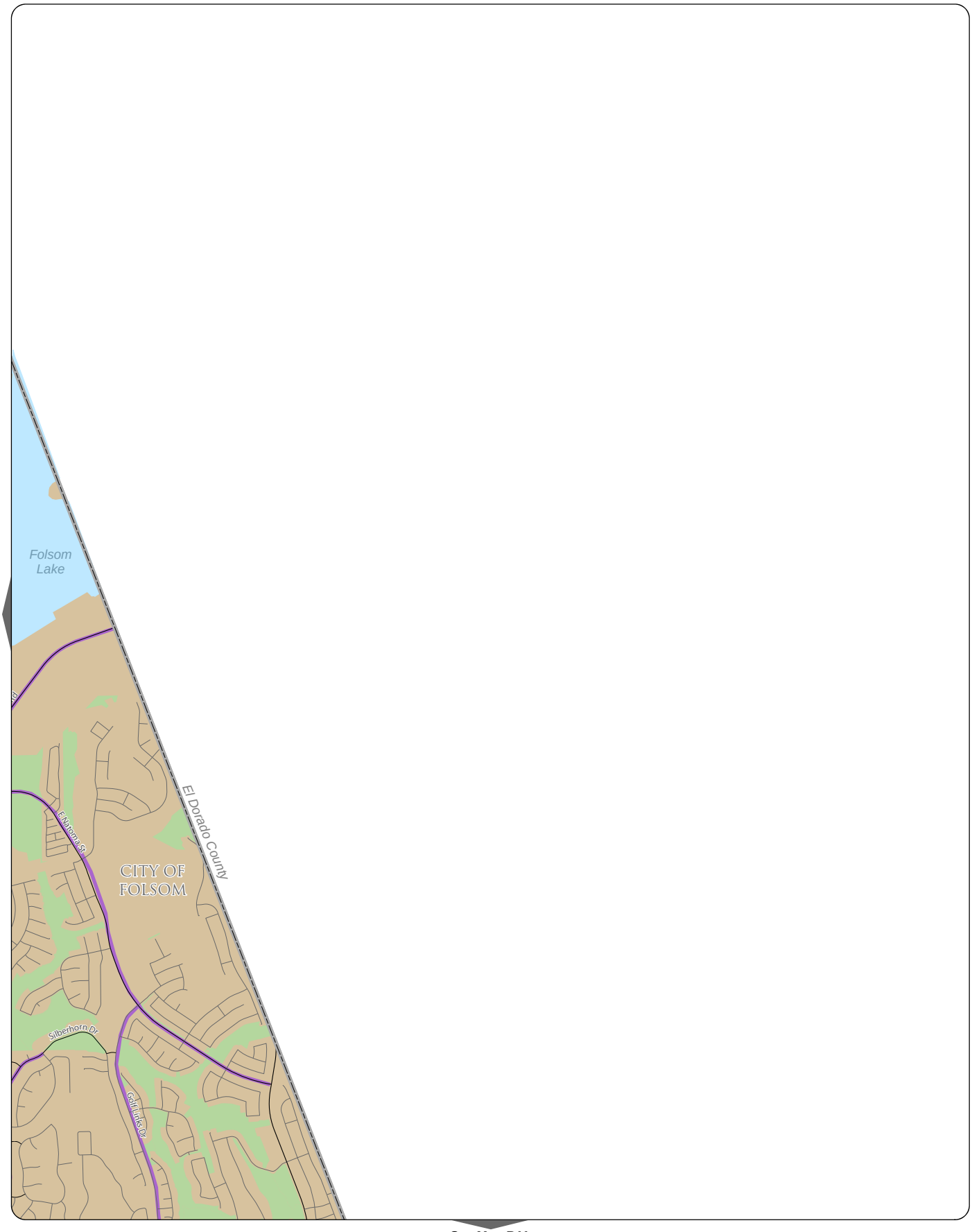
SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP A9
EXISTING BICYCLE FACILITIES



SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP A10
EXISTING BICYCLE FACILITIES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El Dorado County
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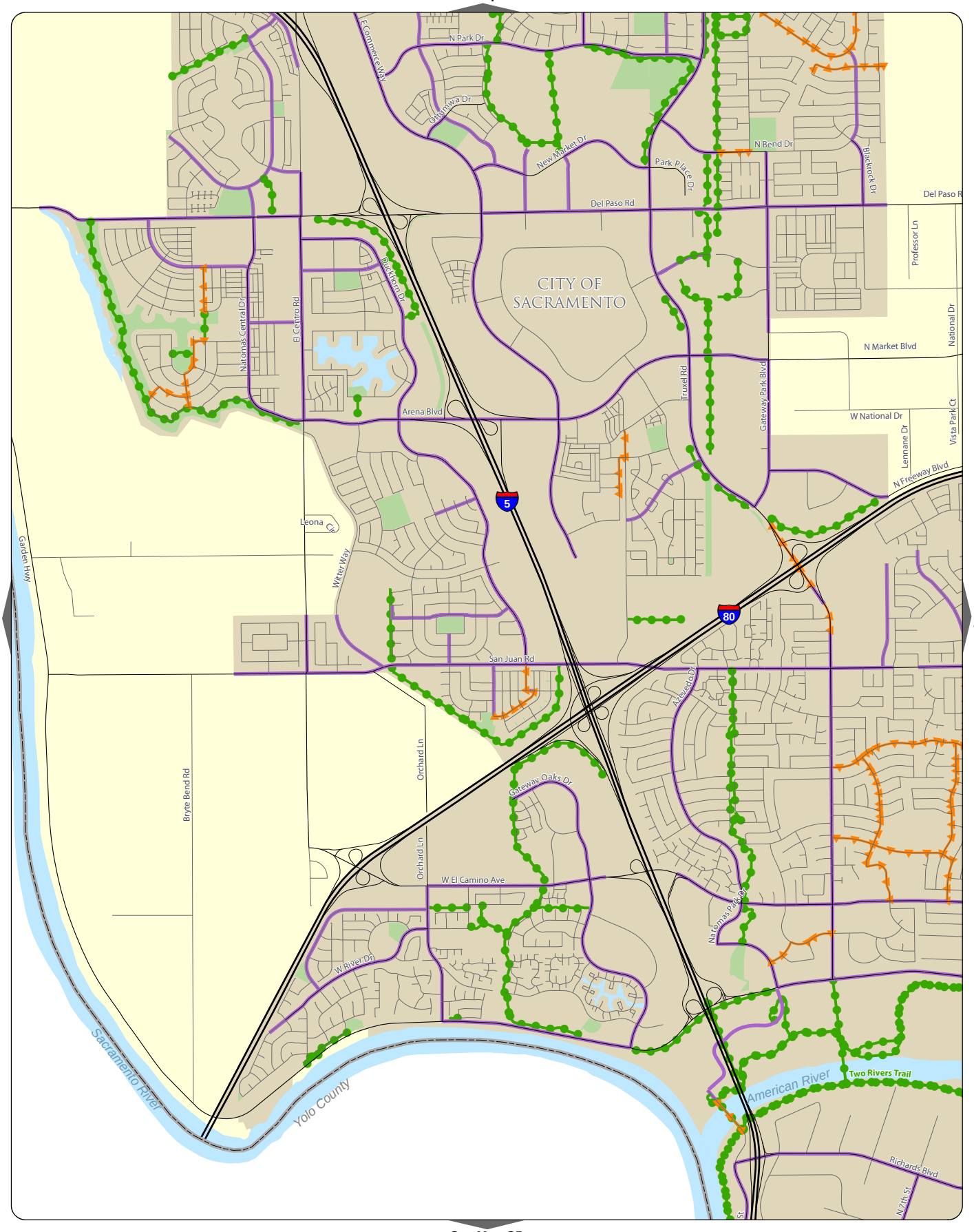
CITY OF FOLSOM
Silberhorn Dr
Golf Links Dr
See Map B11

See Map A5



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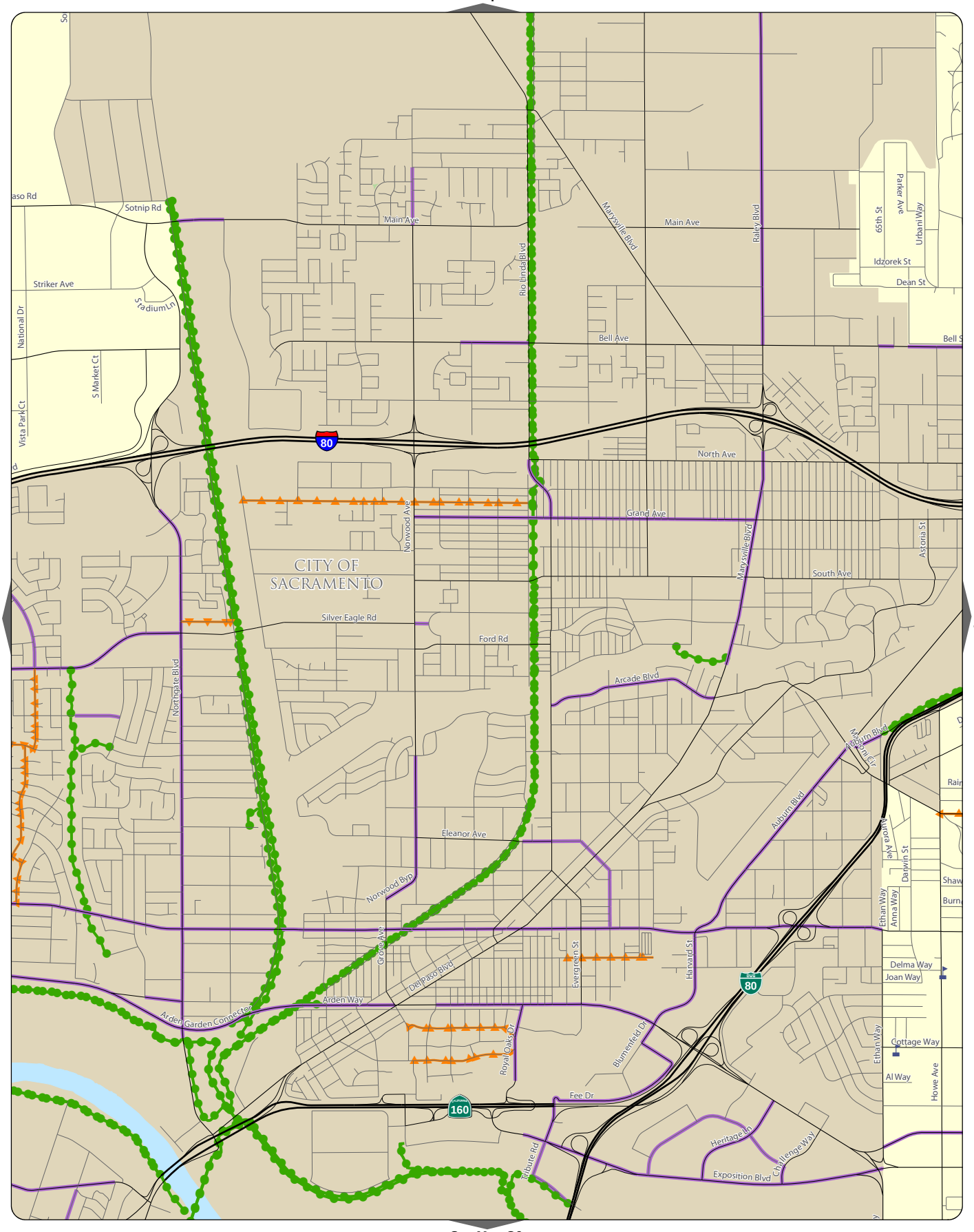
See Map C5

See Map A6

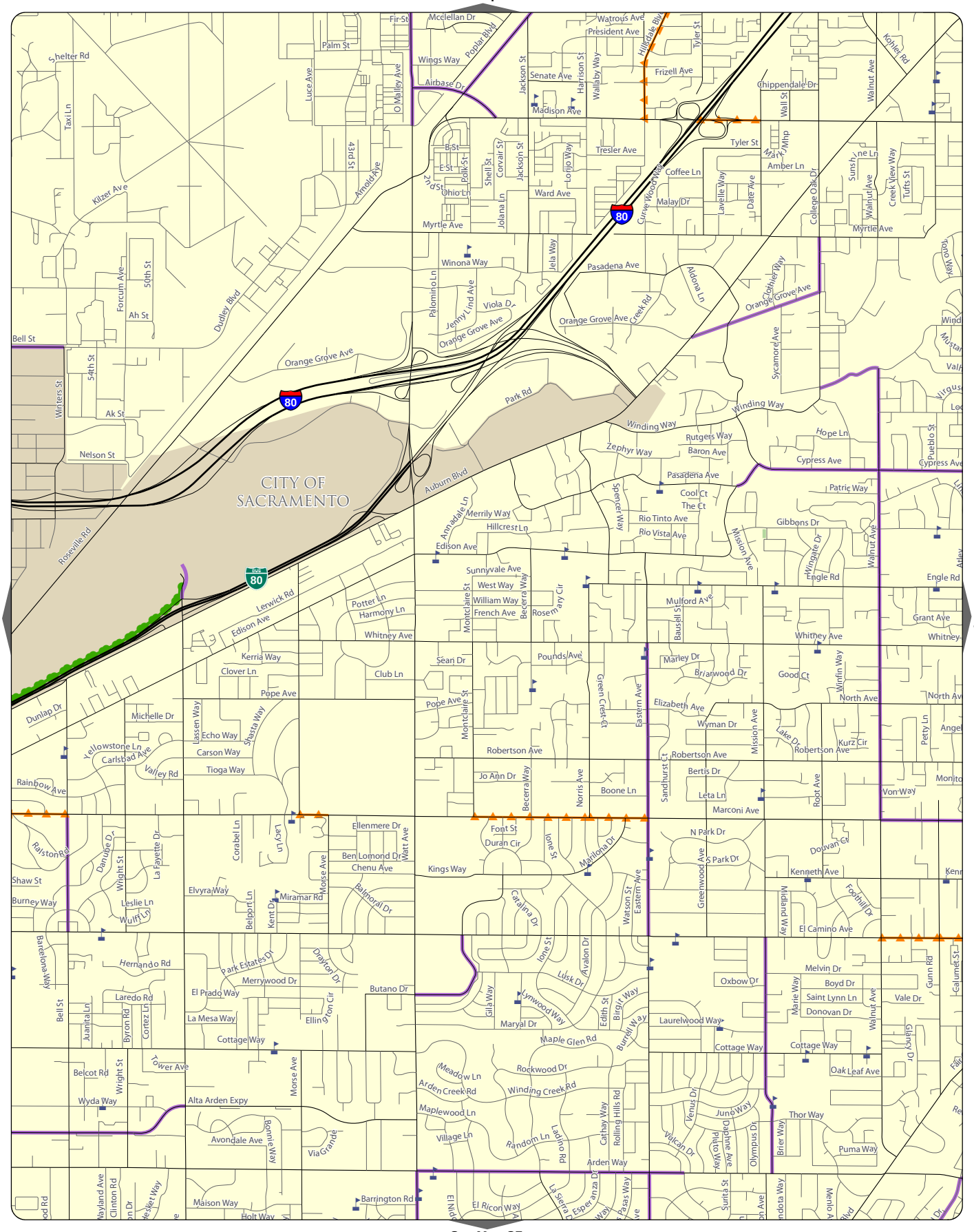


See Map B5

See Map B7

See Map C6

See Map A7



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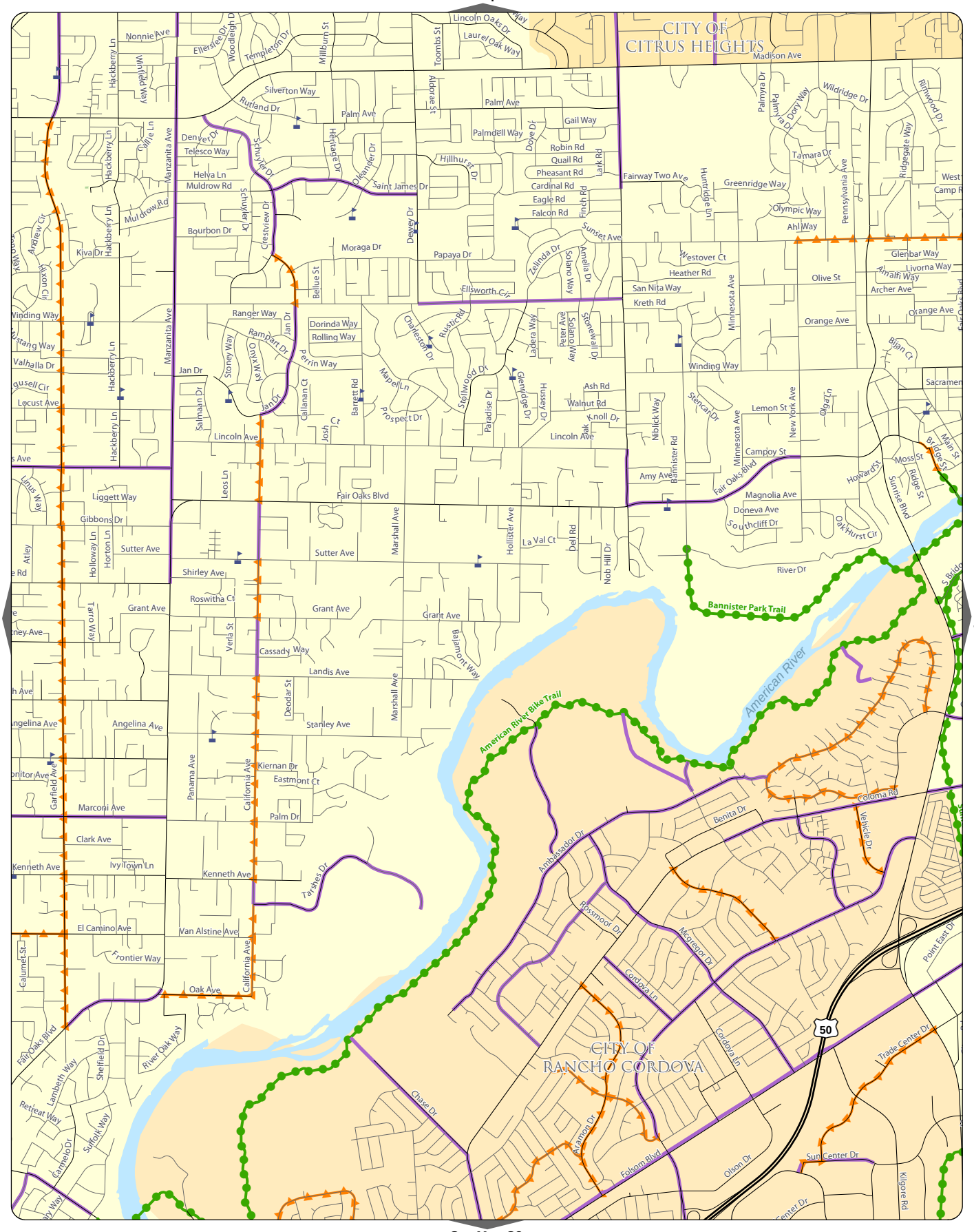
MAP B7
EXISTING BICYCLE FACILITIES

See Map A8



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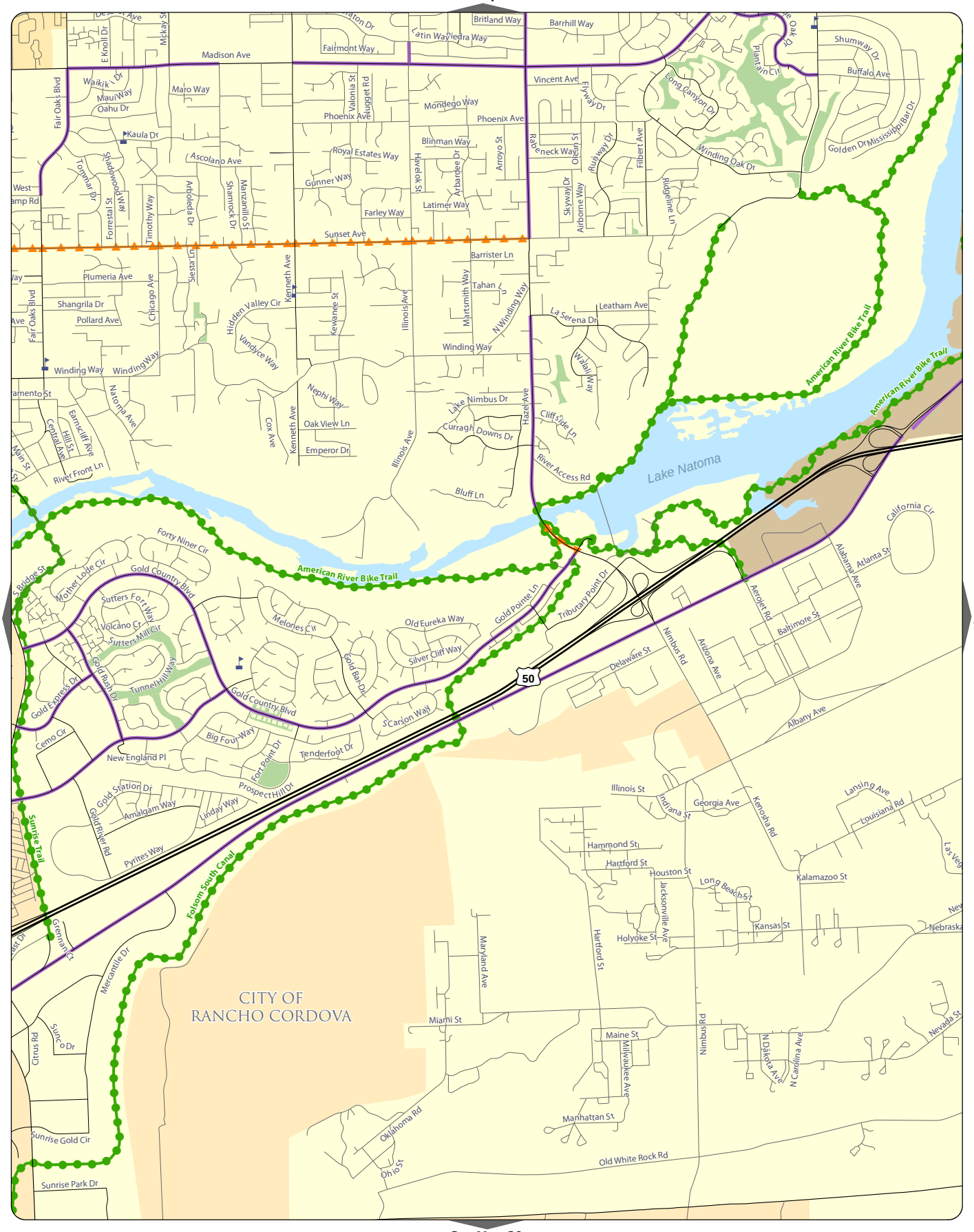
See Map C8

MAP B8
EXISTING BICYCLE FACILITIES

See Map A9



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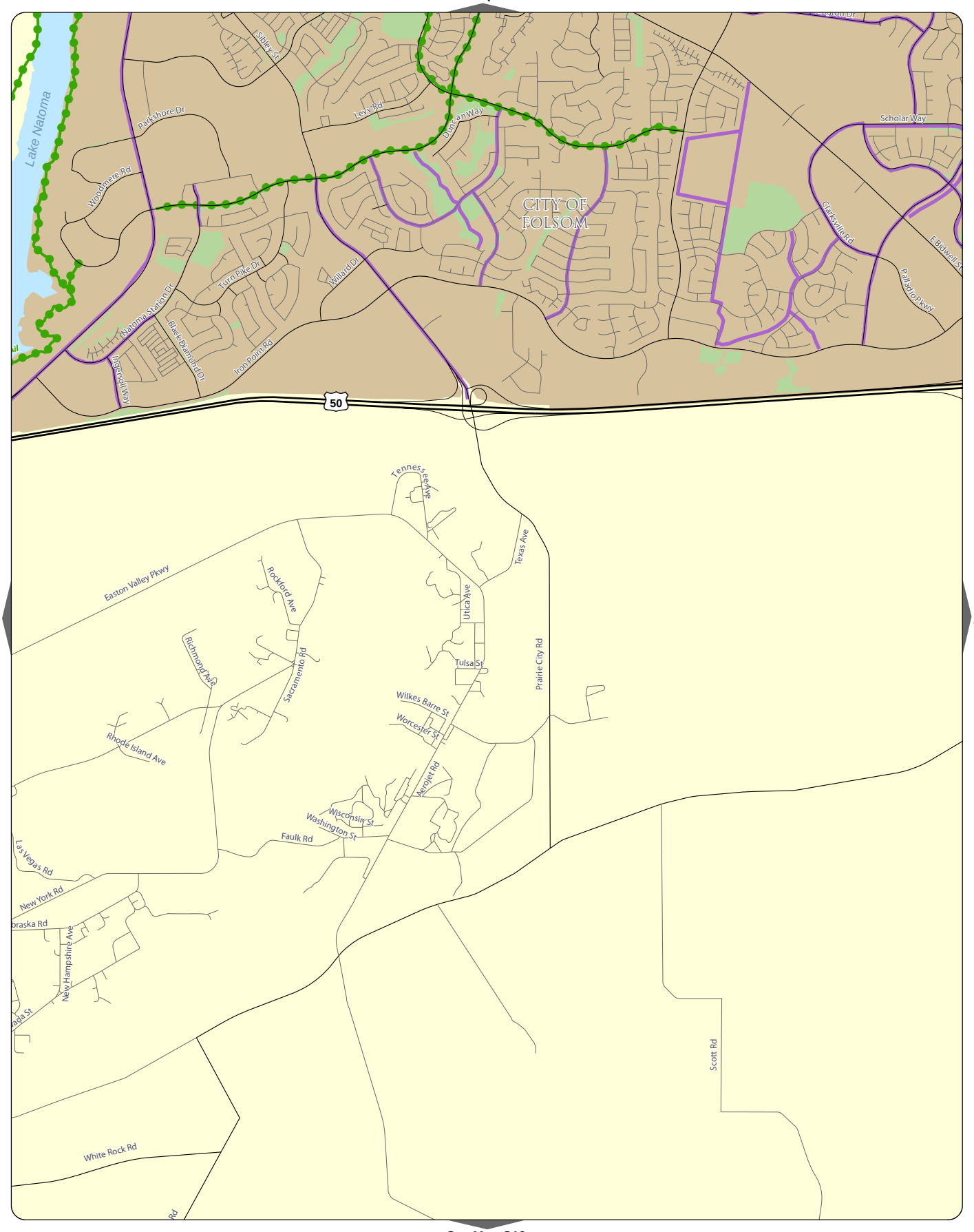

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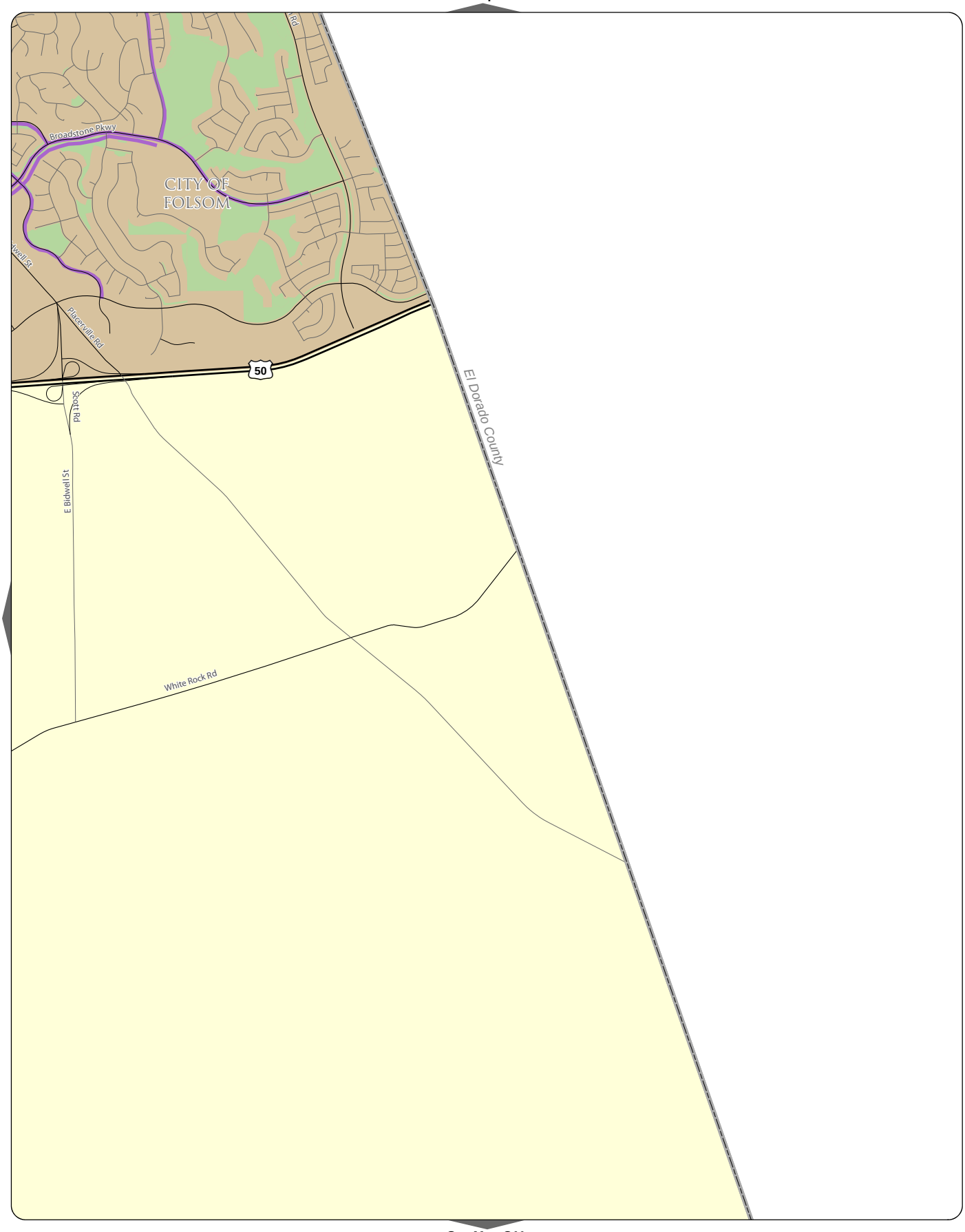
See Map A11



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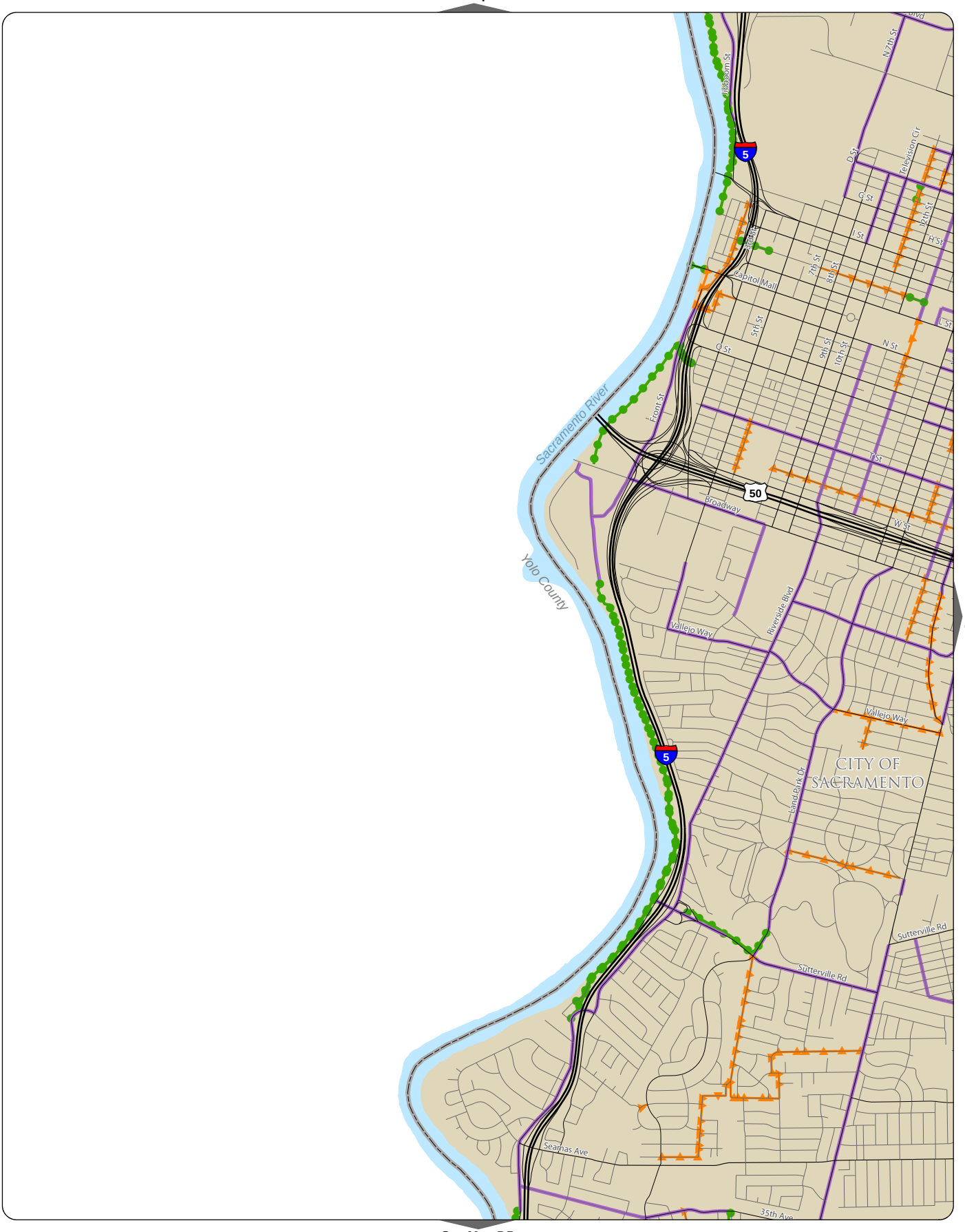
See Map C11

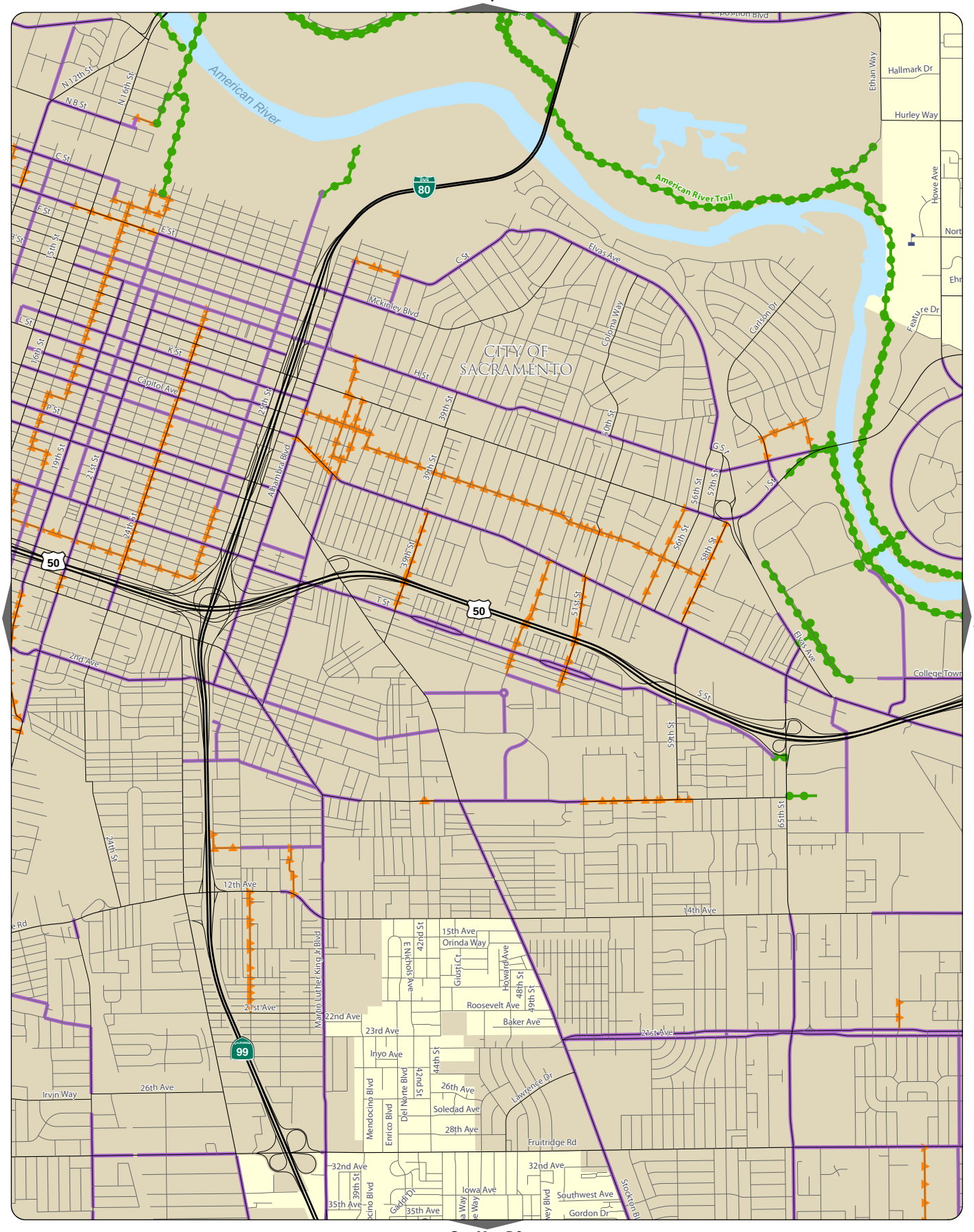
See Map B5



See Map C6

See Map D5

See Map B6

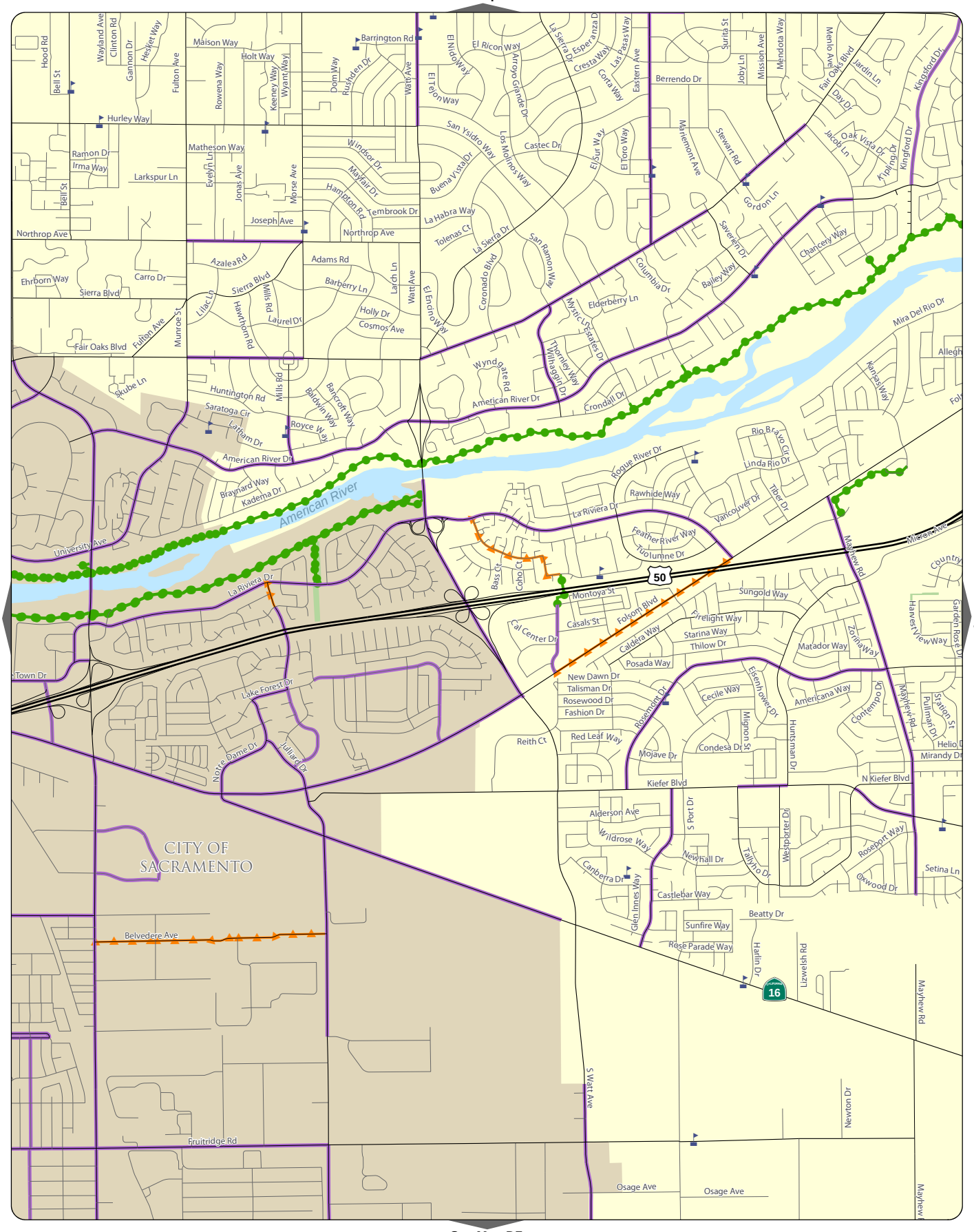


See Map C5

See Map C7

See Map D6

See Map B7

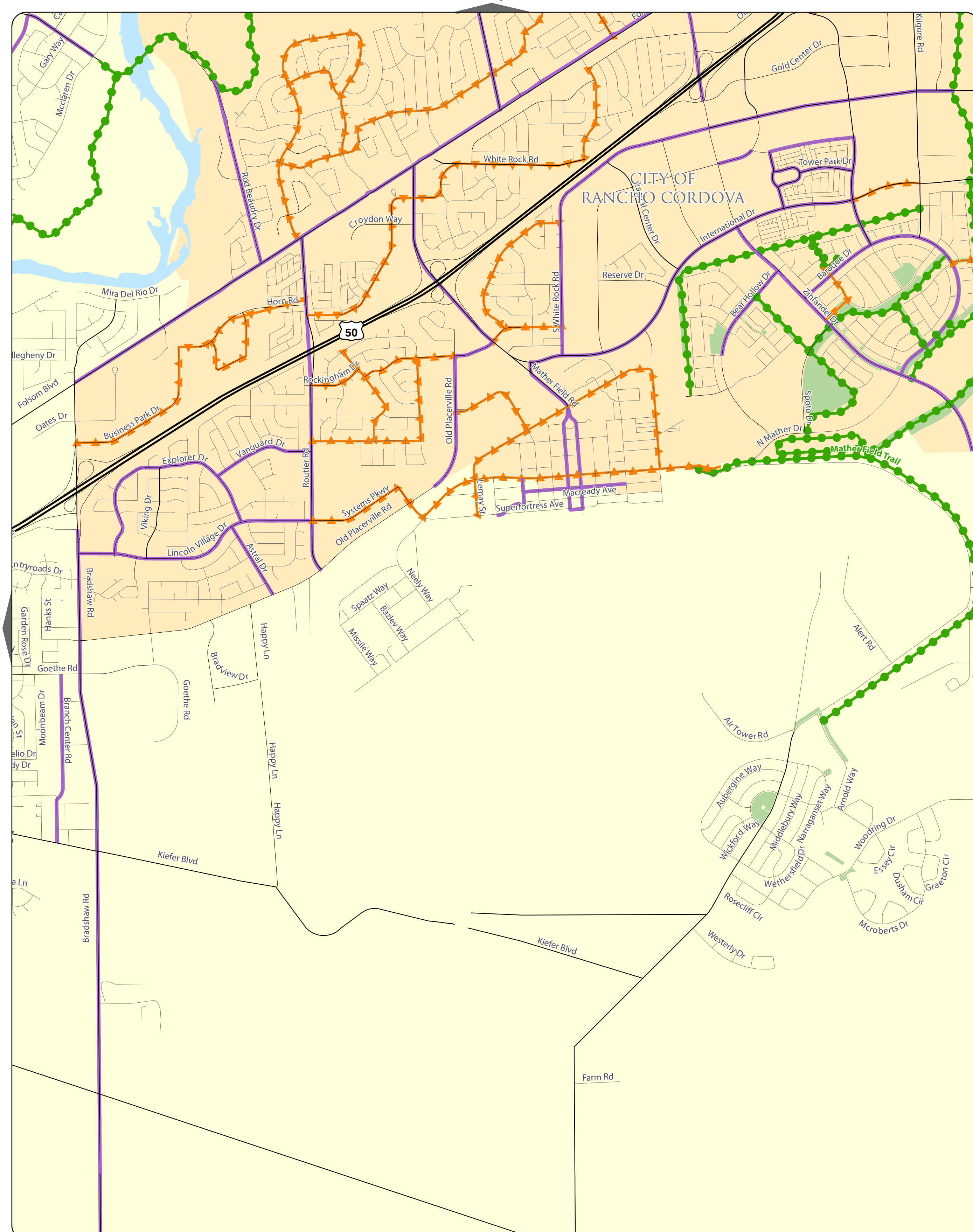


See Map C6

See Map C8

See Map D7

See Map B8


CITY OF
RANCHO CORDOVA
Mather Field Trail
50
Gary Way
Mcclaren Dr
Mira Del Rio Dr
Rod Beaudry Dr
Horn Rd
Croydon Way
White Rock Rd
S White Rock Rd
Reserve Dr
International Dr
Gold Center Dr
Kilgore Rd
Tower Park Dr
Baroque Dr
Bear Hollow Dr
Zinfandel Dr
Spoto Dr
N Mather Dr
Mather Field Rd
Old Placerville Rd
Rockingham Dr
Routier Rd
Folsom Blvd
Oates Dr
Business Park Dr
Explorer Dr
Vanguard Dr
Viking Dr
Lincoln Village Dr
Astral Dr
Systems Pkwy
Lemay St
Superfortress Ave
Macready Ave
Bradshaw Rd
Hanks St
Garden Rose Dr
Goethe Rd
Moonbeam Dr
Branch Center Rd
Bradview Dr
Happy Ln
Spaatz Way
Neely Way
Bazley Way
Missile Way
Alert Rd
Air Tower Rd
Aubergine Way
Wickford Way
Middlebury Way
Narragansett Way
Wethersfield Dr
Arnold Way
Woodring Dr
Essey Cir
Dusham Cir
Graeton Cir
Mcroberts Dr
Rosecliff Cir
Westerly Dr
Kiefer Blvd
Farm Rd

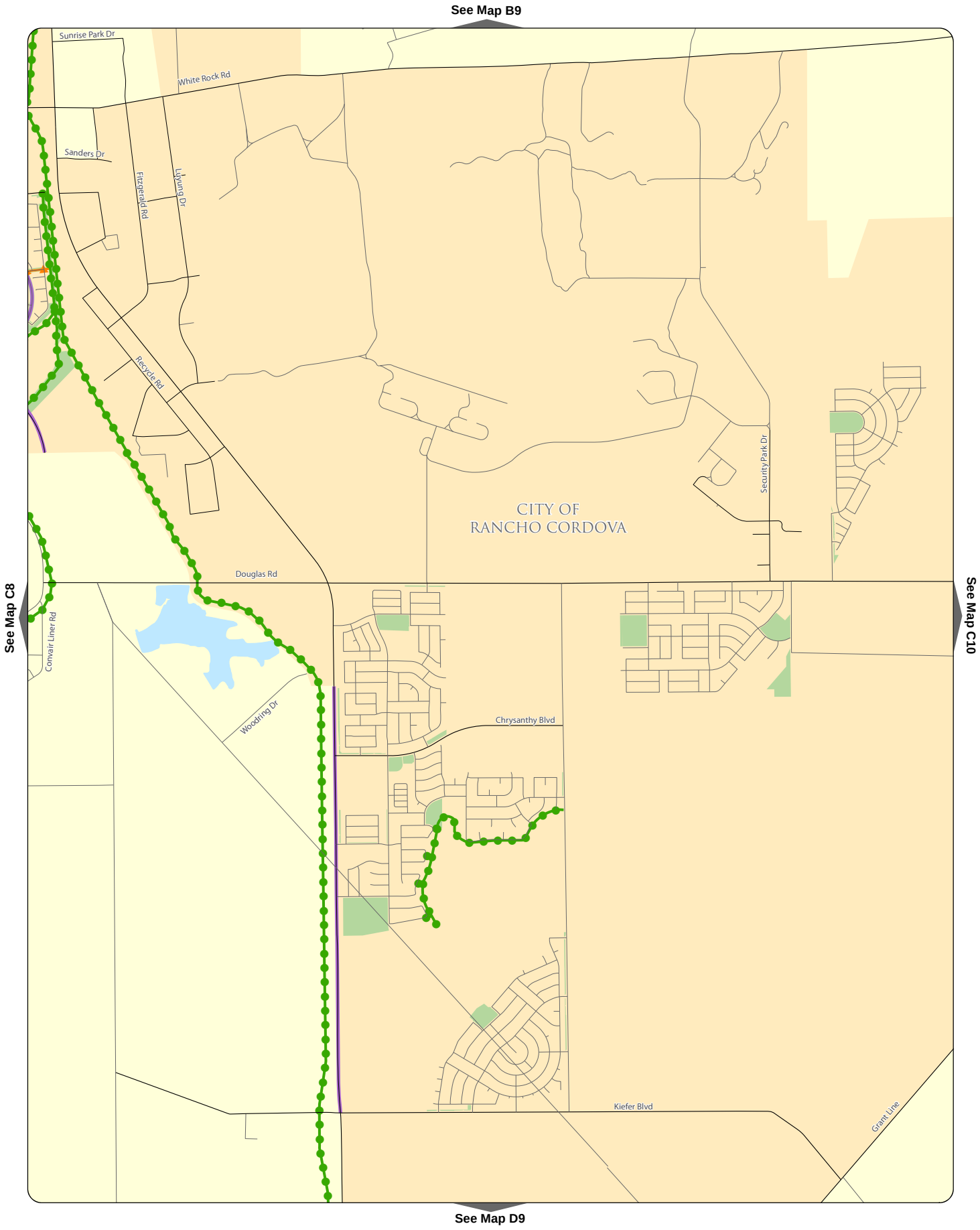
See Map C7

See Map C9

See Map D8

SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP C8
EXISTING BICYCLE FACILITIES

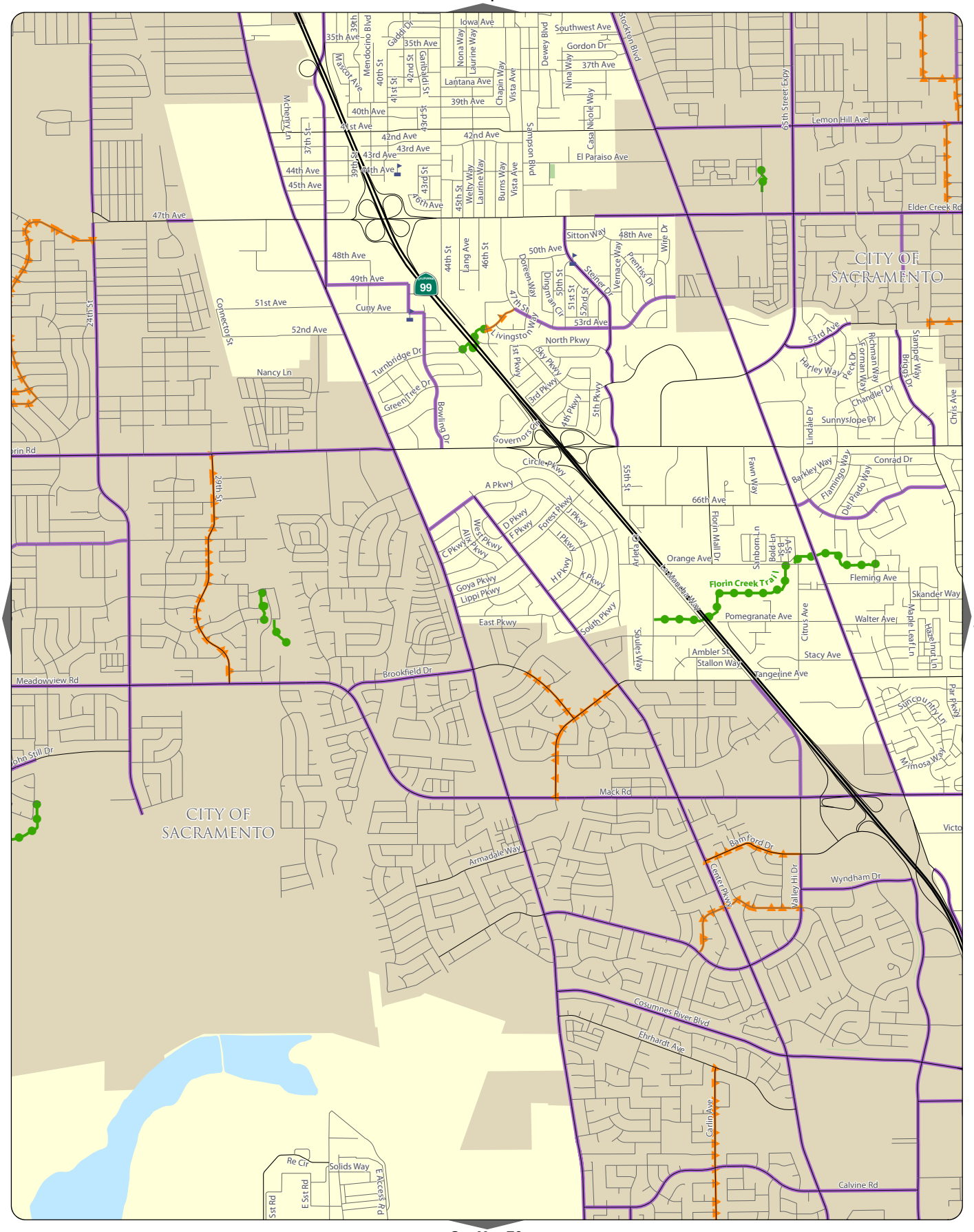

See Map B9
Sunrise Park Dr
White Rock Rd
Sanders Dr
Fitzgerald Rd
Luyung Dr
Recycle Rd
CITY OF
RANCHO CORDOVA
Security Park Dr
Douglas Rd
See Map C8
See Map C10
Convair Liner Rd
Woodring Dr
Chrysanthy Blvd
Kiefer Blvd
Grant Line
See Map D9

See Map C5

See Map D6

See Map E5

See Map C6

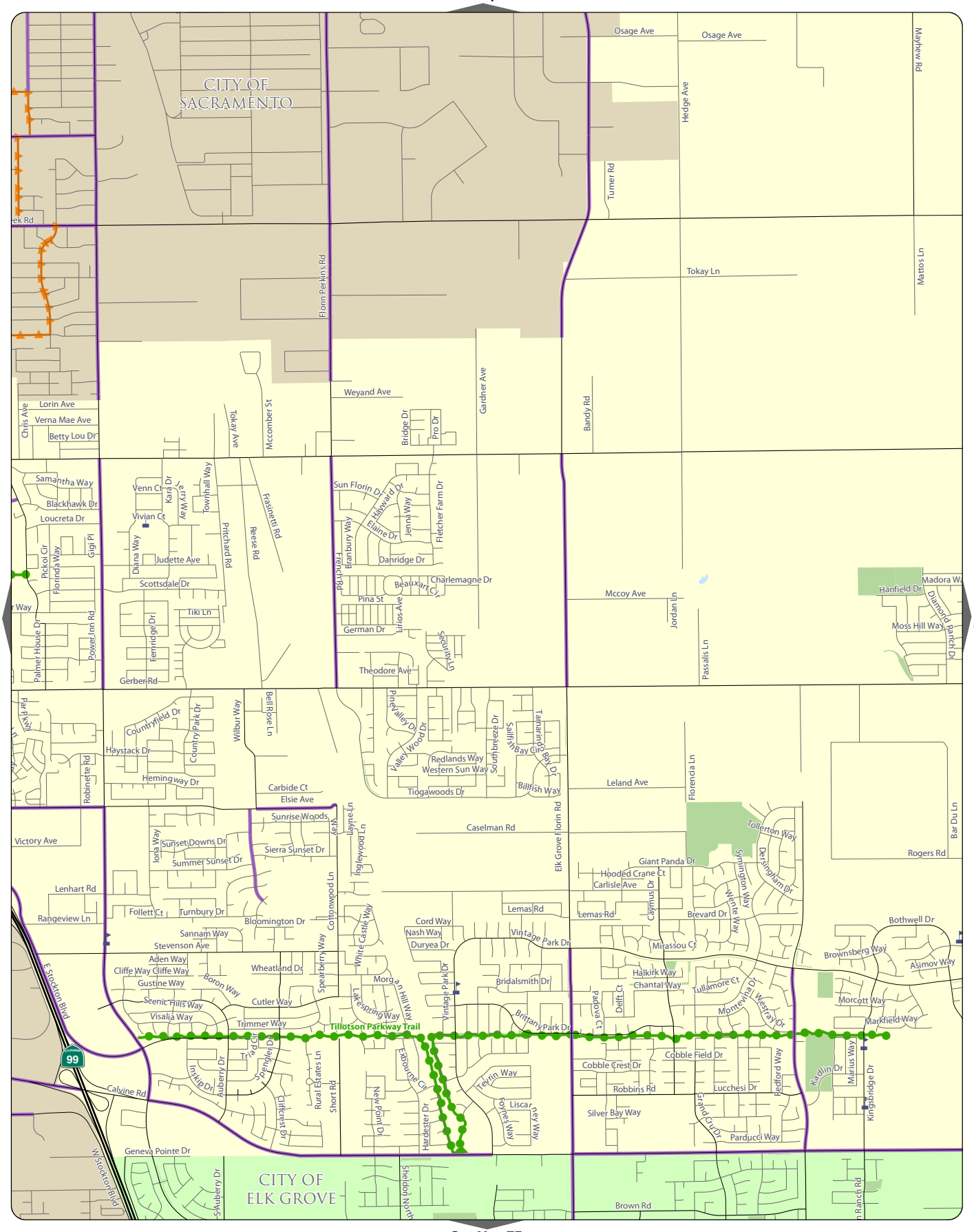


See Map D5

See Map D7

See Map E6

See Map C7



See Map D6

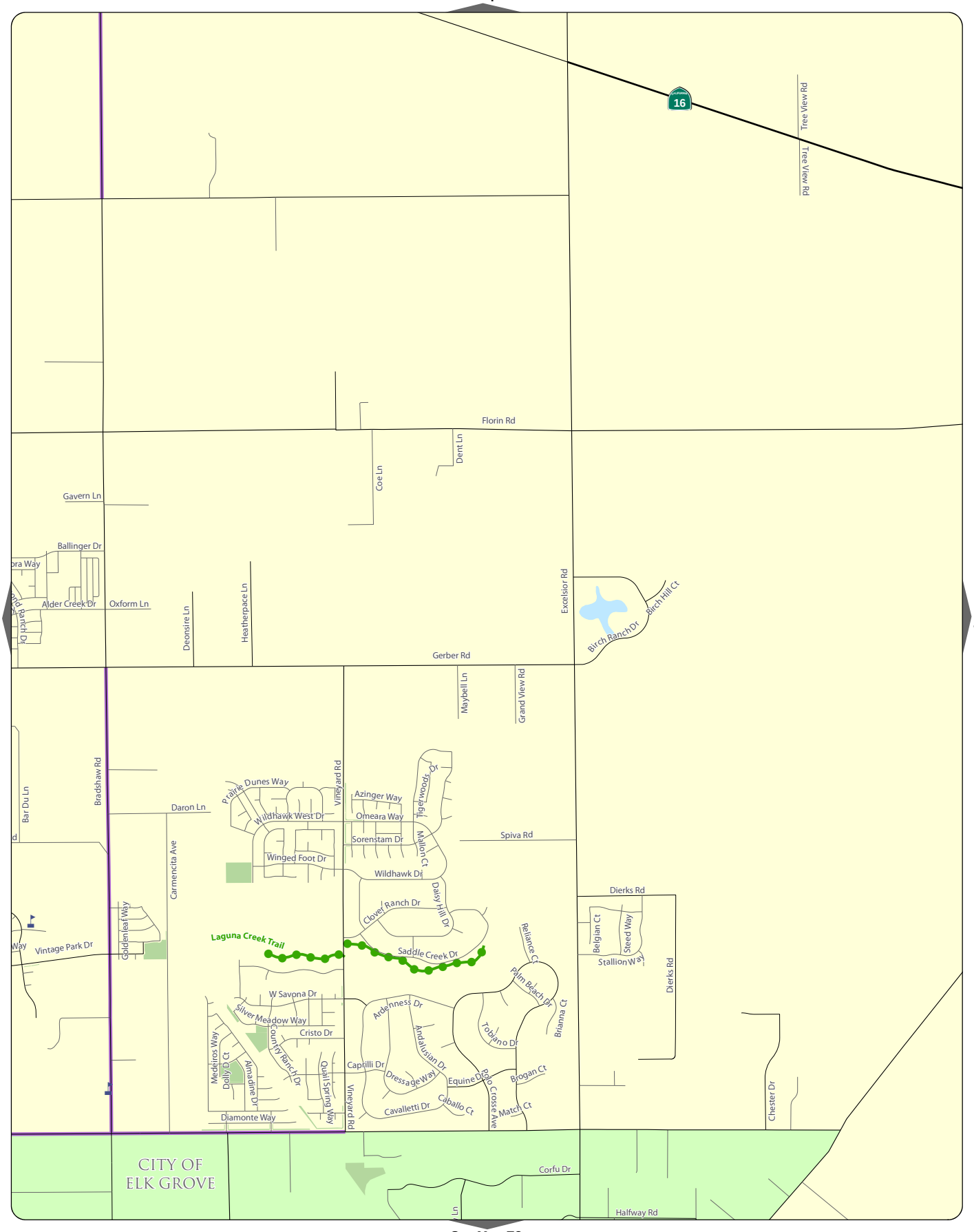
See Map D8

See Map E7

SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP D7
EXISTING BICYCLE FACILITIES

See Map C8

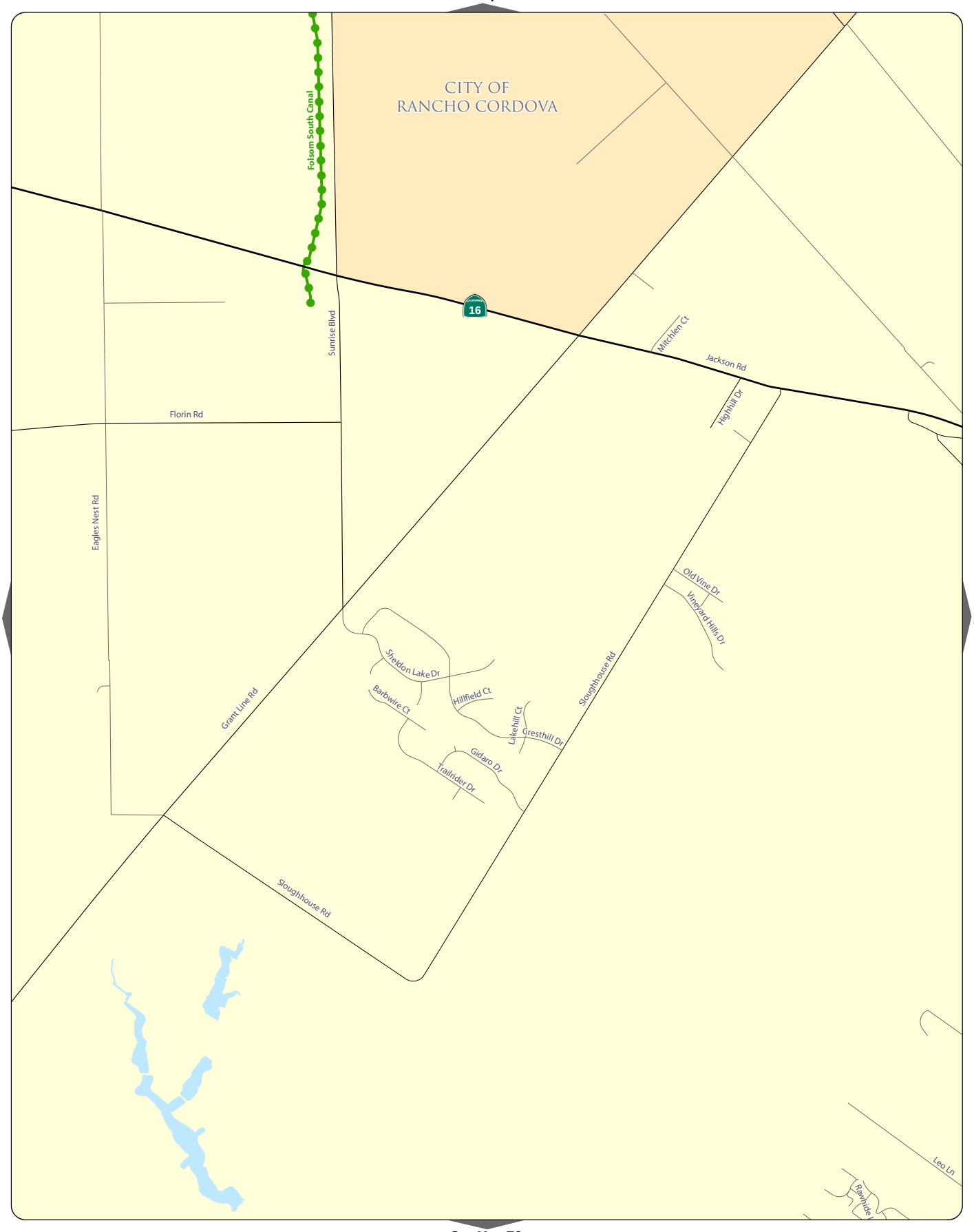


See Map D7

See Map D9

See Map E8

See Map C9

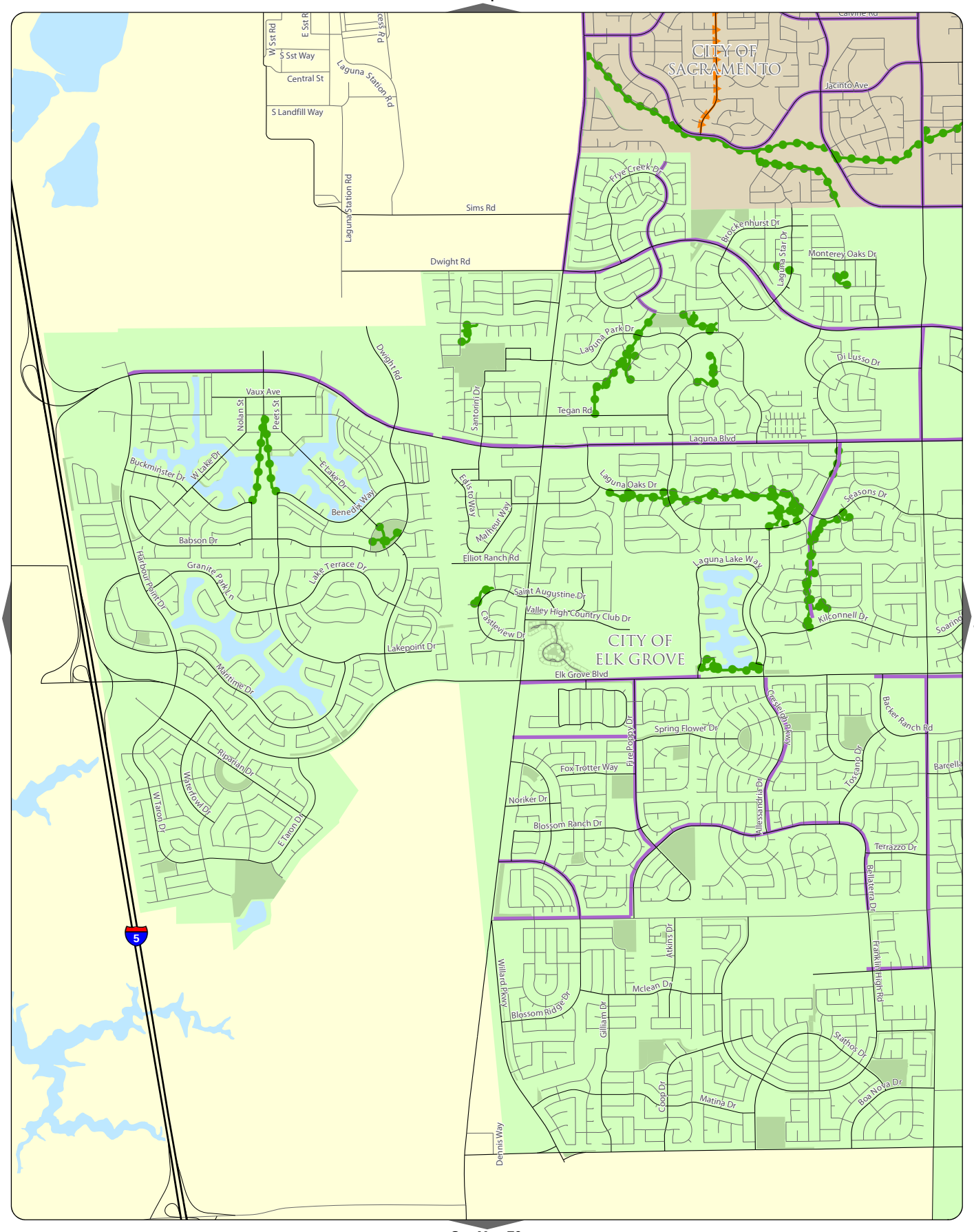


See Map D8

See Map D10

See Map E9

See Map D6



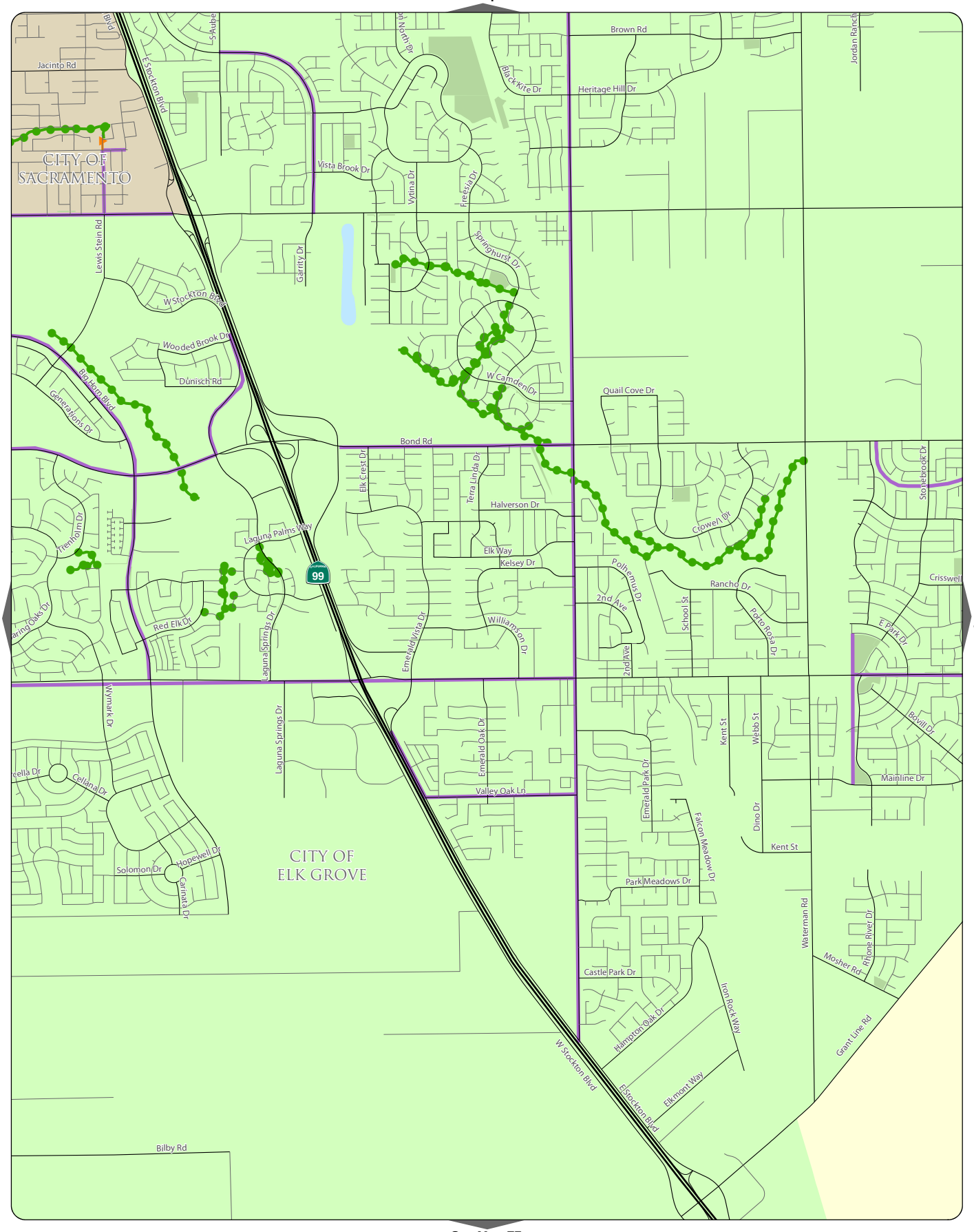
See Map E5

See Map E7

See Map F6

MAP E6
EXISTING BICYCLE FACILITIES

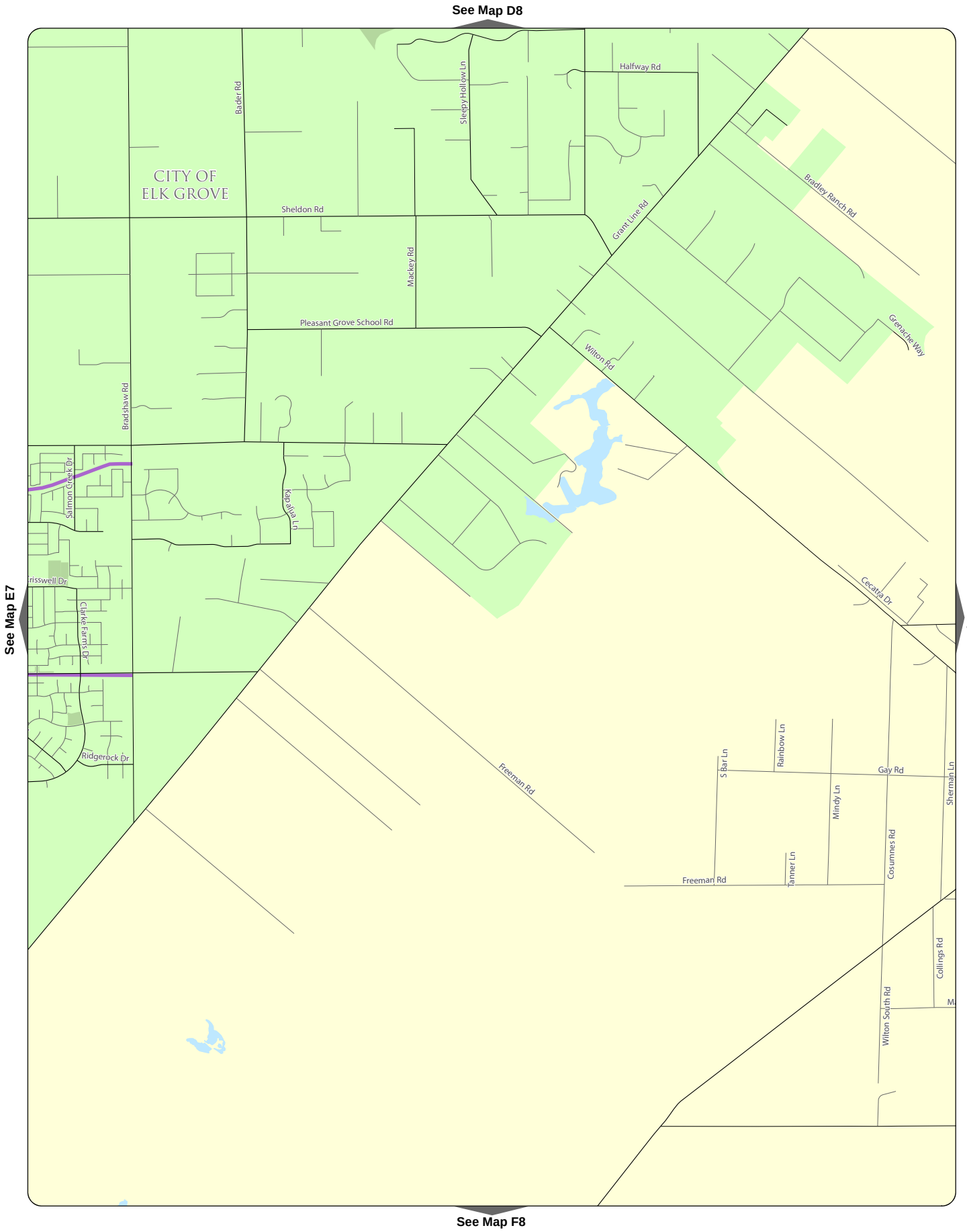
See Map D7



See Map E6

See Map E8

See Map F7



SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP E8
EXISTING BICYCLE FACILITIES

5. RECOMMENDED BICYCLE NETWORK

This chapter describes the proposed system of bikeways for the County of Sacramento and the criteria used to develop and prioritize this system. County staff and the Project Team established the proposed system with input from the BAT and the public. In addition to the proposed bikeway system and priorities, this chapter discusses proposed bikeway support facilities and recommendations for countywide improvements.

ROUTE SELECTION CRITERIA

The development of the proposed system of bikeways took into account the broader goals for bikeway development as described in Chapter 3. In particular, the plan emphasizes a comfortable, convenient, and well-connected bikeway system that meets the transportation and recreational needs of bicyclists. Factors considered during development of the proposed system include the following.

- **Needs Assessment** – The needs assessment conducted by the project team included a review of existing plans and studies, a field survey of existing bikeways, and consideration of public input. Specific parameters included access to regional parks, public facilities, schools, employment centers, residential and non-residential land uses; population and employment densities; and roadway conditions, including number of lanes, capacity, and speed. A composite suitability index was established to show where likely improvements were needed. The demand/attractor maps are shown in Appendix E. The composite suitability map is shown in Appendix F.

- **Anticipated Utilization** – Priority bicycle facilities in the proposed system reflect use levels that are commensurate with the level of investment required for construction and maintenance.

- **System Coverage** – The proposed system considers balanced access from the County's population centers for both commuting and recreational purposes. Appropriate emphasis is placed on projects located in infill areas of the County due to the reduced level of existing facilities in these older areas.

- **Connectivity** – The proposed system provides connections between existing bicycle facilities, residential areas, schools, parks, public transit stops, shopping centers, and employment centers, with an emphasis on connections to major activity centers and multimodal transfer locations.

- **Connections to Adjacent Jurisdictions** – The proposed bikeway system connects the Sacramento County system to surrounding communities such as the City of Rancho Cordova, City of Elk Grove, City of Sacramento, City of Folsom, City of Galt, City of Roseville, City of Citrus Heights, West Sacramento, Sutter County, Yolo County, and Placer County.

- **Projects of Regional Significance** – Projects that cross jurisdictional boundaries are potentially regionally significant bike facilities. This is important because a recurring theme throughout the planning process was a desire for bicyclists to access bikeways and use them for long, uninterrupted rides.

PROPOSED BIKEWAY NETWORK

Using the route selection criteria, the Project Team developed a continuous Sacramento County bicycle network that includes Class I, II, and III bikeways. The bikeway projects are comprised of specific recommended improvements in unincorporated Sacramento County. The recommendations focus on connecting communities, recreational opportunities, and serving commuting bicyclists as well as serving a wide range of ages and skill level. Table 7 includes the existing, proposed, and total lengths of Sacramento County bikeways. More details about these recommendations are in the subsequent sections and Maps displaying the existing and proposed network are at the end of this chapter.

TABLE 7: LENGTH OF EXISTING AND PROPOSED SYSTEM BY BIKEWAY CLASSIFICATION MILES

Bikeway Classification	Existing	Proposed	Total
Class I Bike Paths	72.3	348.41	420.71
Class II Bike Lanes	122.2	935.76	1057.96
Class III Bike Routes	9.4	42.08	51.48
Total	**203.9**	**1326.3**	**1530.2**

Class I Bike Path Projects

Sacramento County has a foundation for a Countywide path network. The County's long creek and rail corridors provide multiple opportunities for Class I paths. These bikeways are excellent facilities for all levels of bicyclists and serve as bikeways for both recreational and utilitarian bicyclists. Figure 15 shows the recommended cross-sections for these facilities. Several of the proposed Class I paths are located within existing environmental preserves. These preserves include deed restrictions limiting use of the property and, in some cases, bike paths may not currently be permitted. For this reason, the locations for Class I bike paths shown in the Bicycle Master Plan are conceptual only. Class I bike path alignments in specific plans developed for various planning areas will take precedence. Any proposed class I bike path will require detailed feasibility studies, public outreach, and environmental studies before implementation. Examples of this are the Class I crossings of the American River, which are proposed within the American River Parkway.

Class I bike paths along the Cosumnes River and Mokelumne River have been identified as part of a conceptual network of Class I trails that connect the Sacramento River, American River, East County, South County, Cosumnes River, and Mokelumne River. The actual feasibility of the bike paths along the Cosumnes and Mokelumne River and their respective alignments will require further study and public outreach with affected stakeholders. Once this planning effort is completed, the SCBMP can be updated to reflect the desired alignments, if any. As with all Class I facilities, additional design, outreach, and environmental analysis would be necessary prior to project implementation.

Figure 15 – Typical Class I Cross-Section

In addition to the paths, this Plan recommends eight bicycle overcrossings. The crossings are over I-80, the Union Pacific Railroad, and the American River. These facilities would be approximately 14 feet wide and usable by both bicyclists and pedestrians. These crossings will help bicyclists cross long corridors that act as barriers to bicyclists. More feasibility study is necessary prior to the implementation of these facilities. Figure 16 shows the typical cross-sections for these facilities; however, the design details and architectural appearance can vary dramatically. The proposed crossing locations are:

- One overcrossing of the American River between Arden Bar Park and Sunrise Boulevard
- One overcrossing of the American River between Watt Avenue and Arden Bar Park
- One overcrossing of the American River between Sunrise Boulevard and Hazel Avenue
- Two overcrossings of I-80 between Longview Drive and Madison Avenue
- One overcrossing of I-80 between Madison Avenue and Elkhorn Boulevard
- UPRR Crossing in the area of Palm Avenue
- UPRR Crossing in the area of Winona Way

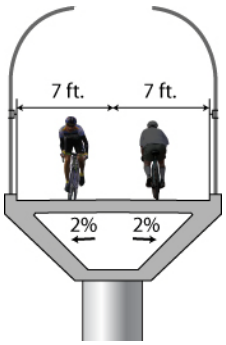


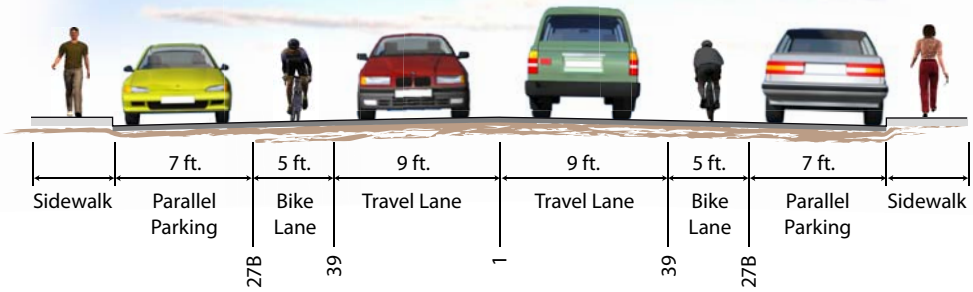
Figure 16 – Typical Class I Overcrossing Cross-Section

Class II Bike Lane Projects

Class II bike lane designations indicate locations where the County is committed to developing new on-street bikeways or improving existing on-street striped and stenciled bikeways that do not meet current standards. These recommendations are most commonly on arterial roadways, filling in bike network gaps and connecting existing bike lanes facilities with new bike lanes. Implementing some of these recommendations costs less than many of the other recommendations because they can occur with the existing pavement maintenance programs, including slurry seal and resurfacing projects. When slurry seal is applied, lane striping and bike lanes are painted or repainted. Coordinating this schedule with the proposed bike facilities map will lead to completion of this network. Like the Class I paths, these segments may require further feasibility and engineering studies to determine whether a Class II bicycle lane is the most appropriate improvement. Figure 17 shows the typical street cross-sections for County roadways with Class II bike lanes.

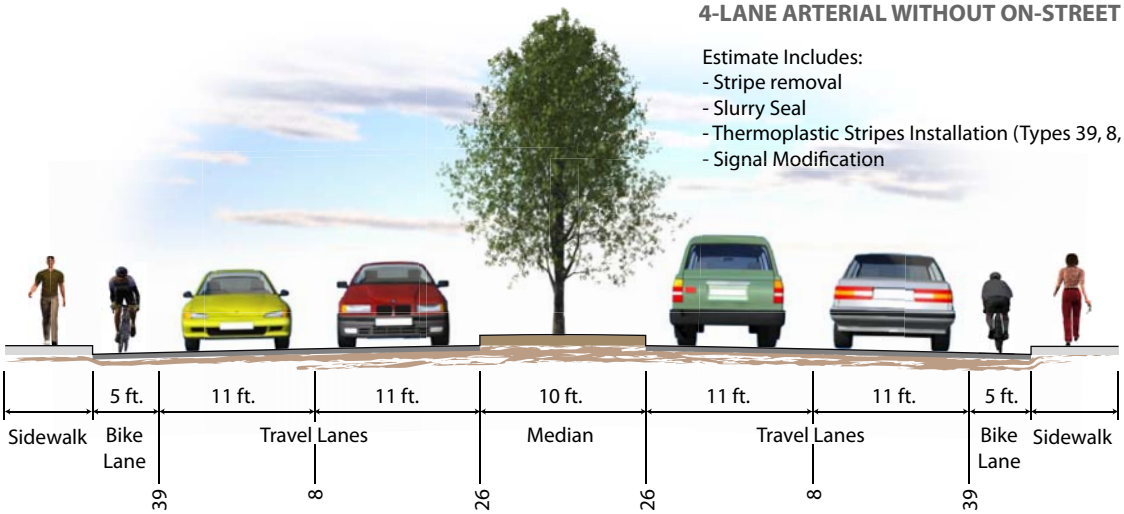
2-LANE COLLECTOR WITH ON-STREET PARKING

Estimate Includes:
- Thermoplastic Stripes Installation (Types 27B, 39, 1)



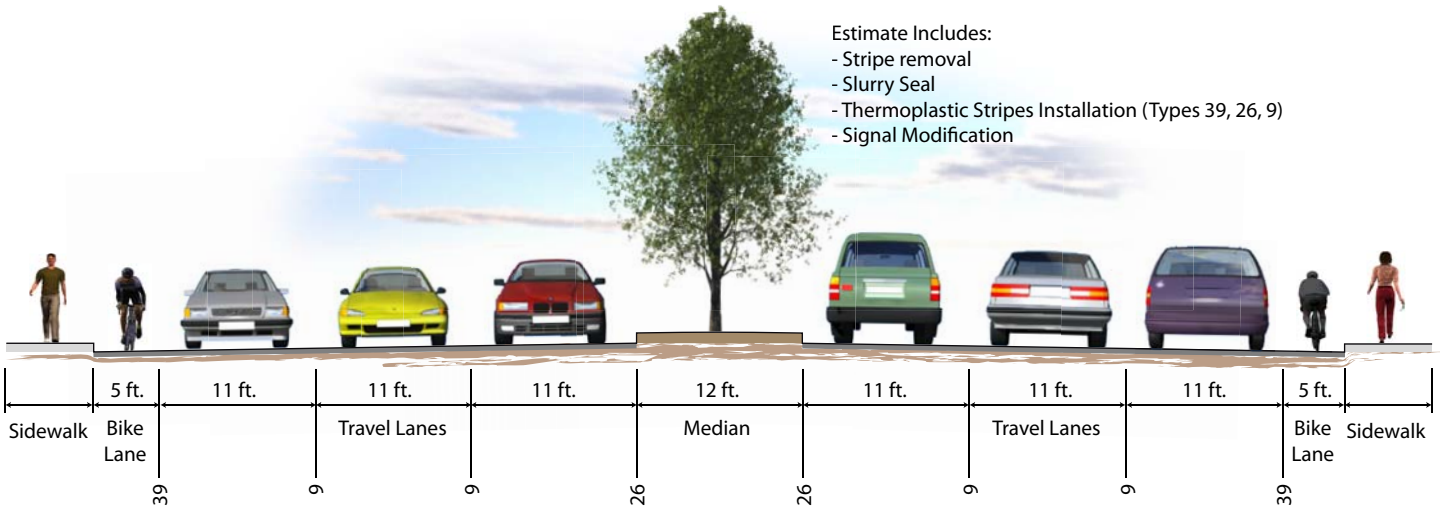
4-LANE ARTERIAL WITHOUT ON-STREET PARKING

Estimate Includes:
- Stripe removal
- Slurry Seal
- Thermoplastic Stripes Installation (Types 39, 8, 26,)
- Signal Modification



6-LANE THOROUGHFARE WITHOUT ON-STREET PARKING

Estimate Includes:
- Stripe removal
- Slurry Seal
- Thermoplastic Stripes Installation (Types 39, 26, 9)
- Signal Modification



TYPICAL COUNTY STREET CROSS-SECTIONS WITH BIKE LANES

FIGURE 17

Class III Bike Route Projects

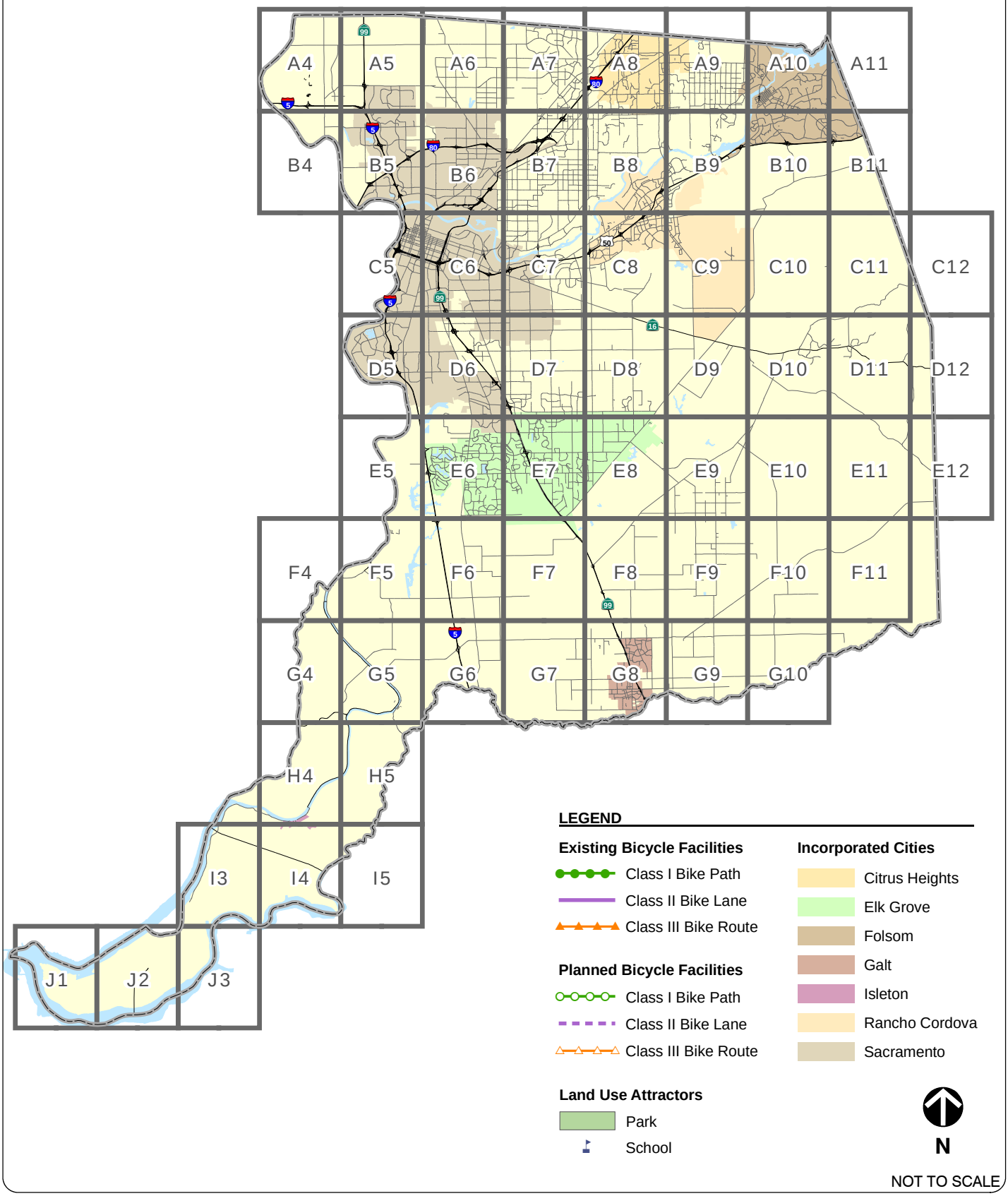
Class III bike routes can serve as bicycle connections on arterial roads where not enough right-of-way is available for a bicycle lane, but the roadway serves as an important link in the bicycle network. Additionally, bicycle routes are recommended for lower volume collector and residential streets where pavement delineation for bicyclists is not necessary. Along these facilities, bike route signs provide the designation. All proposed Class III segments should be signed with CA MUTCD standard bicycle route signs (D11-1), as Figure 18 shows.

A bicyclist on Proposed Class III, Jacob Lane

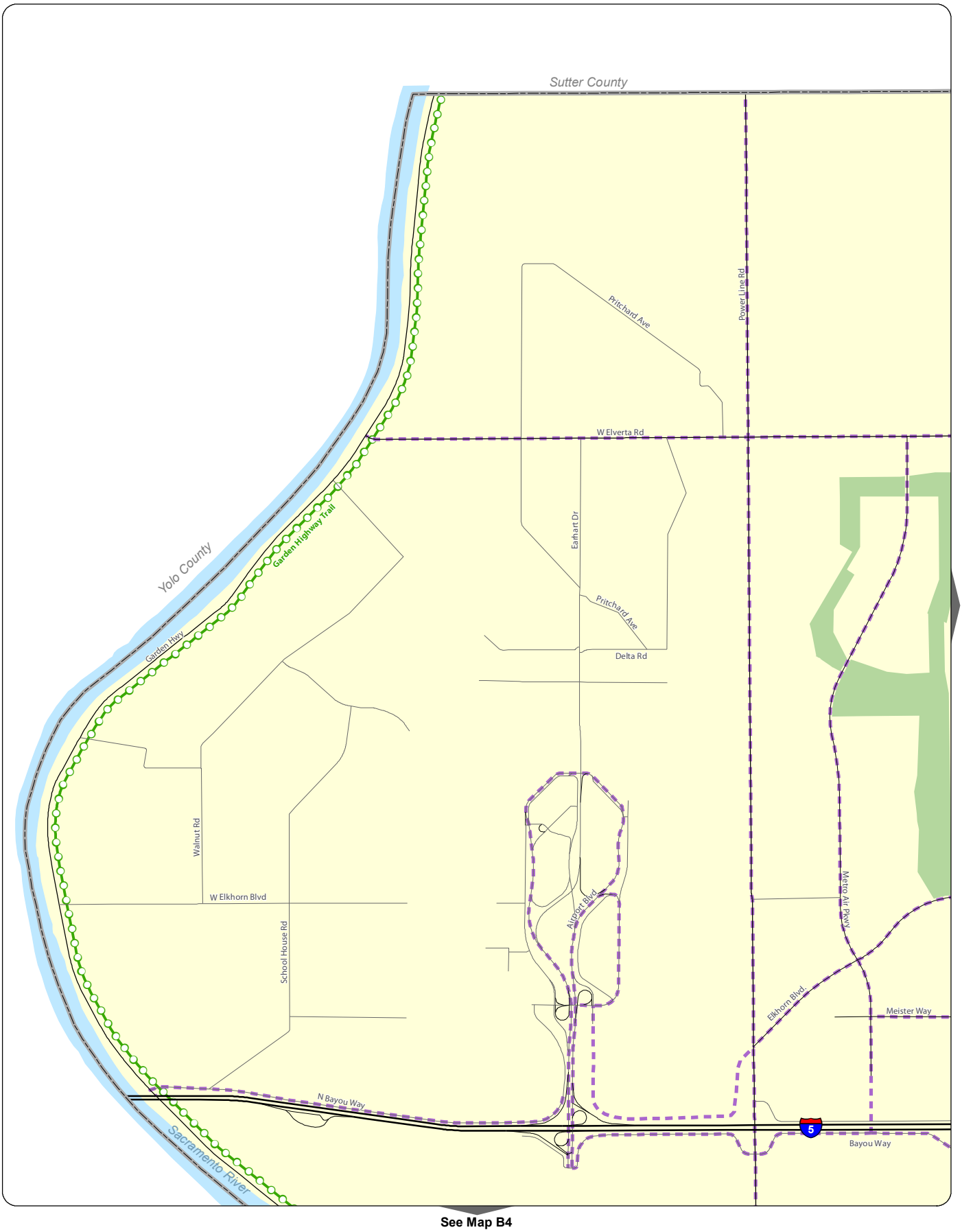
Figure 18 – Typical Class III Bike Route Signage (D11-1)

Existing and Planned Bicycle Network Maps

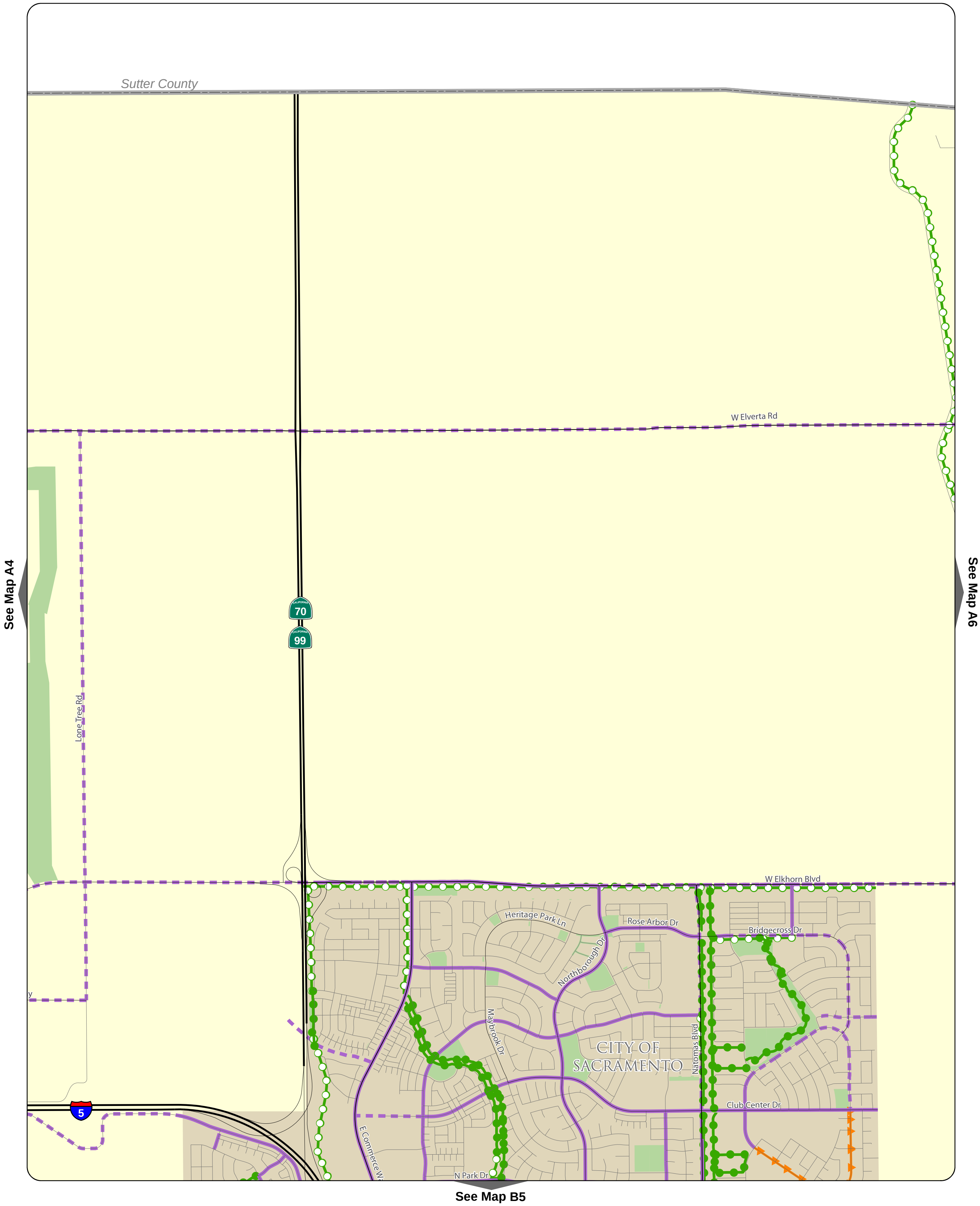
The following pages show the existing and planned bicycle network maps.



KEY MAP
EXISTING AND PLANNED BICYCLE FACILITIES

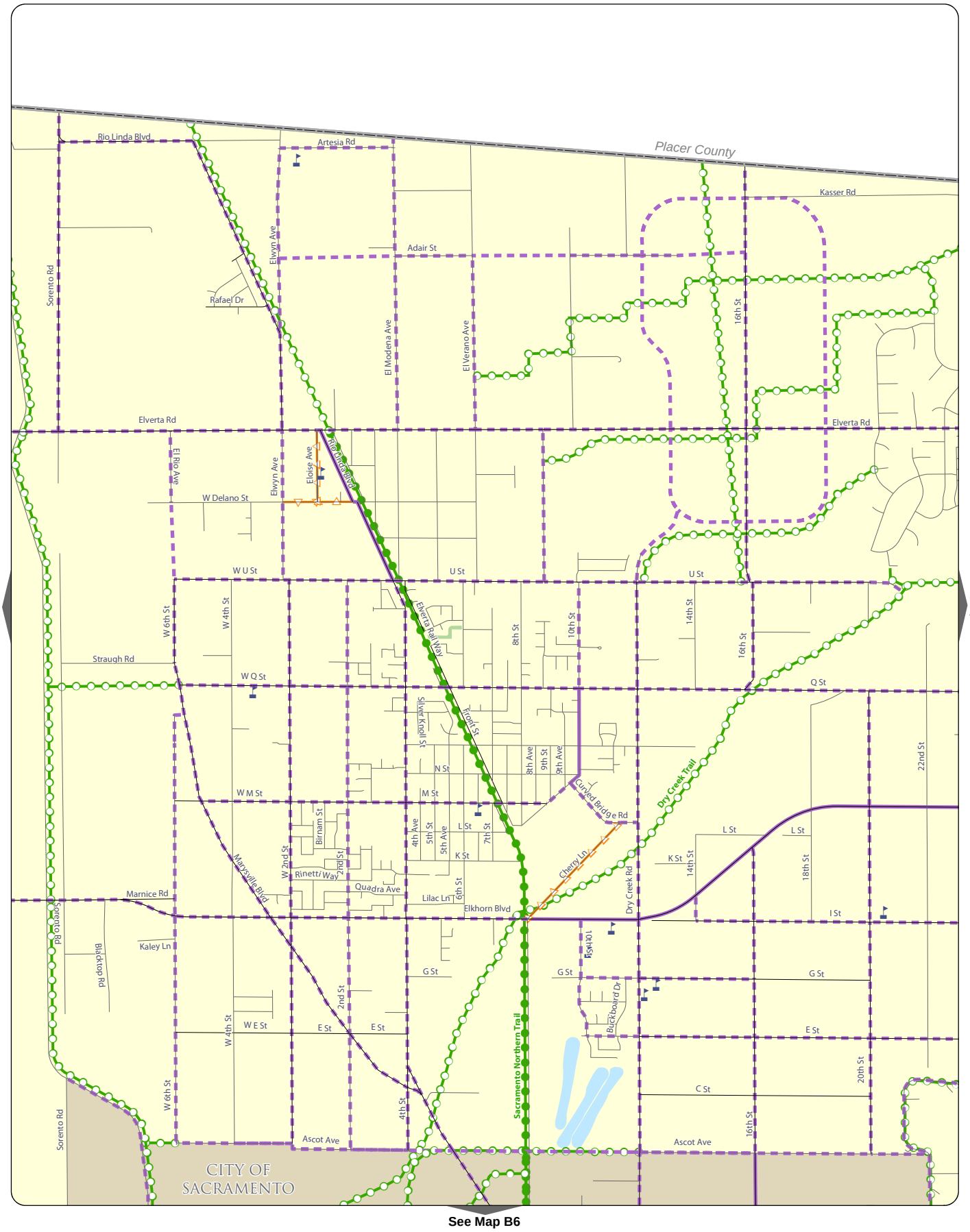


MAP A4
EXISTING AND PLANNED BICYCLE FACILITIES



SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP A5
EXISTING AND PLANNED BICYCLE FACILITIES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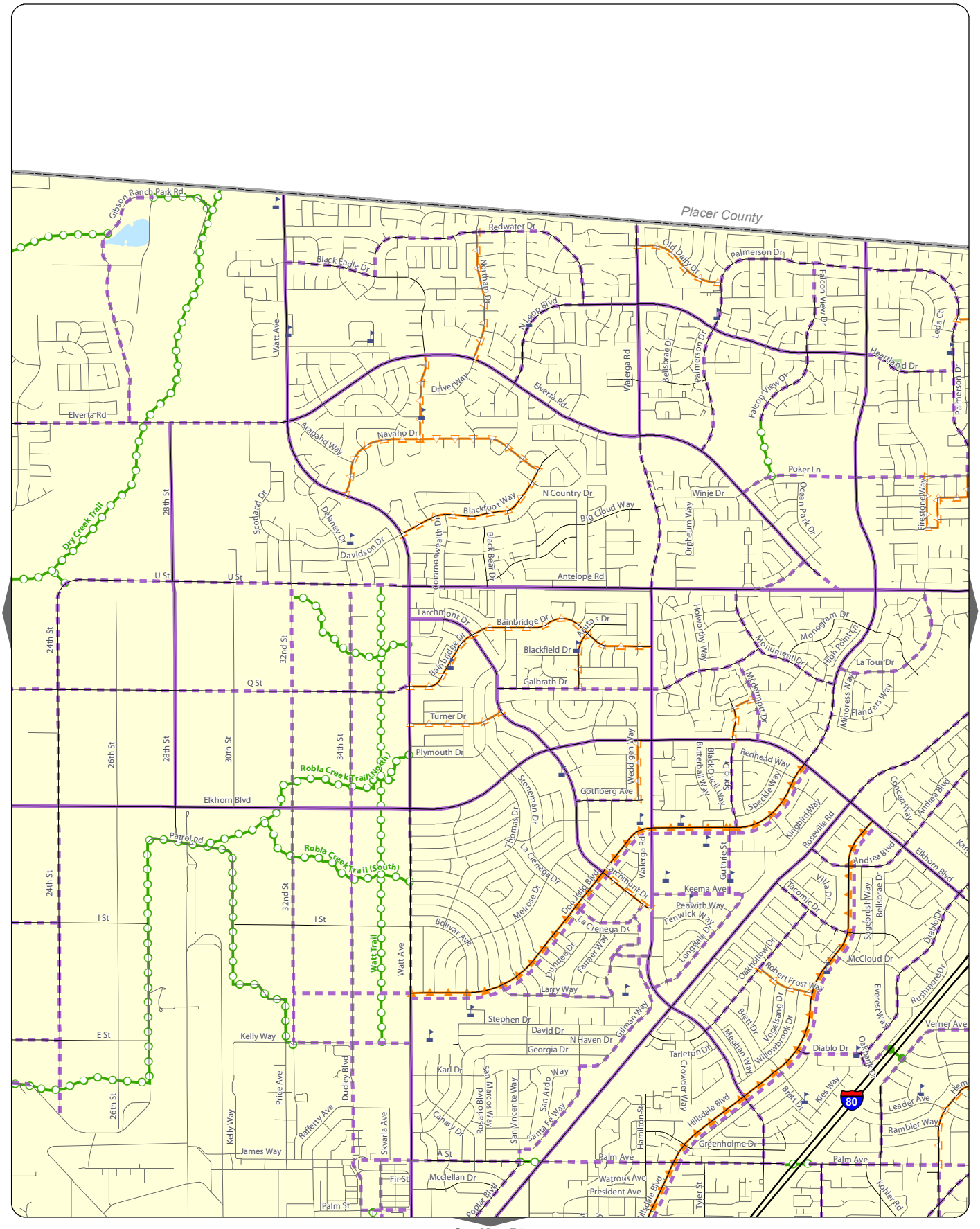
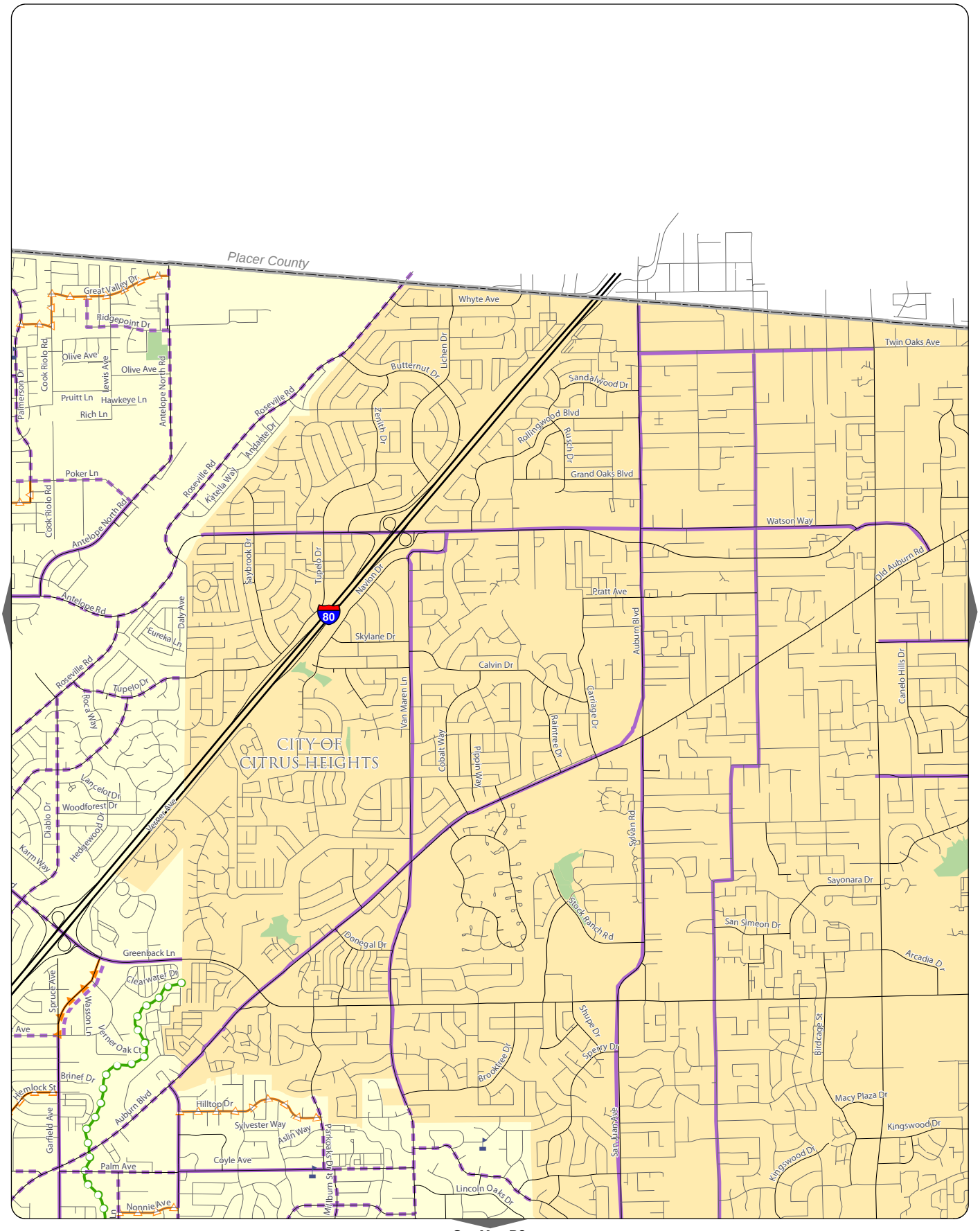
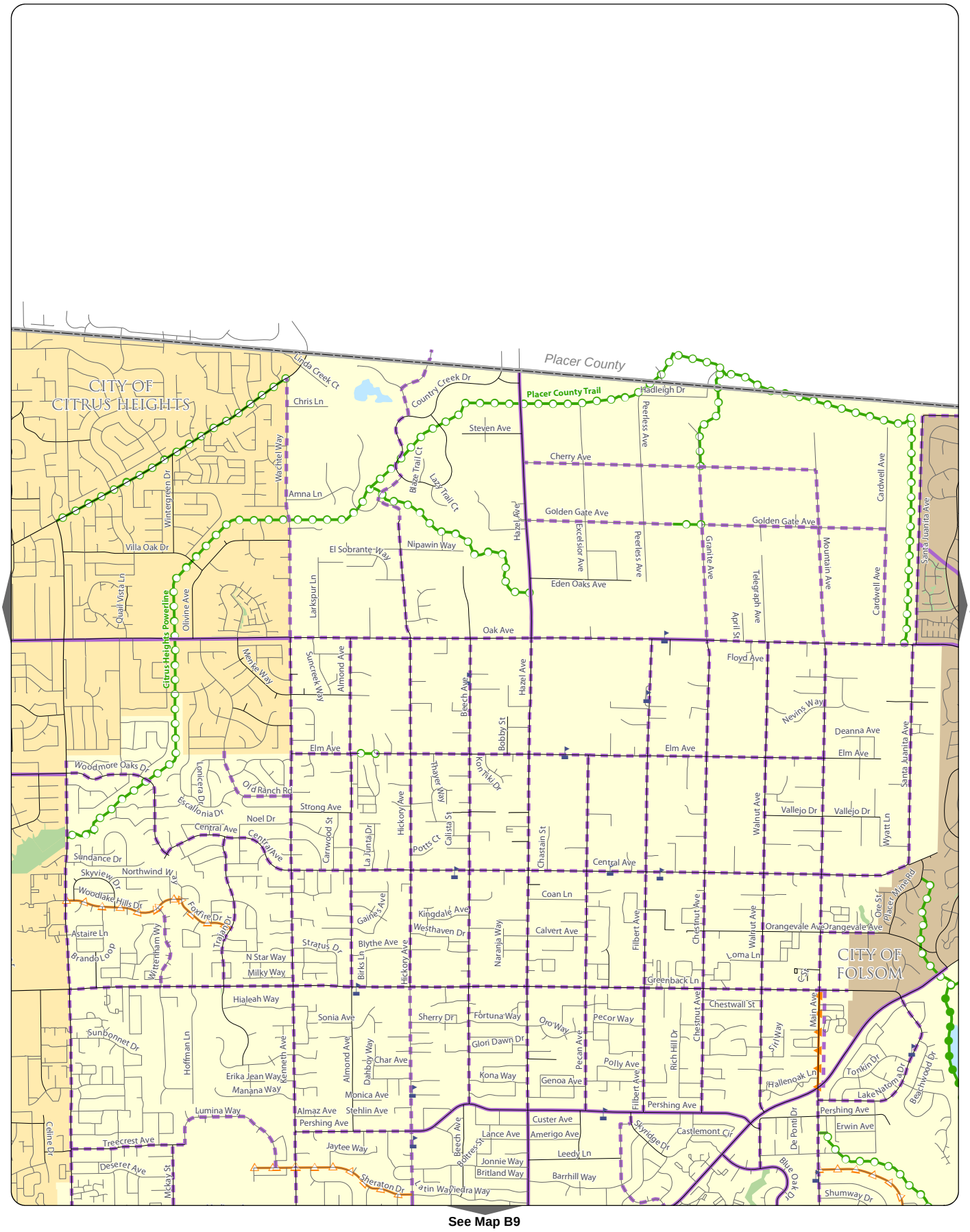
Rio Linda Blvd
Artesia Rd
Kasser Rd
Adair St
Sorento Rd
Elwyn Ave
Rafael Dr
El Modena Ave
El Verano Ave
16th St
Elverta Rd
El Rio Ave
Eloise Ave
Rio Linda Blvd
W Delano St
W U St
U St
W 6th St
W 4th St
Elverta Rail Way
8th St
10th St
14th St
16th St
Straugh Rd
W Q St
Q St
Silverado Knoll St
Front St
N St
8th Ave
9th St
9th Ave
22nd St
W M St
M St
Curved Bridge Rd
Dry Creek Trail
Birnam St
4th Ave
5th St
5th Ave
L St
7th St
K St
W 2nd St
2nd St
Rinetti Way
Marysville Blvd
Quadra Ave
Cherry Ln
Marnice Rd
Lilac Ln
6th St
Elkhorn Blvd
Dry Creek Rd
14th St
18th St
I St
Kaley Ln
Blackton Rd
10th St
G St
2nd St
W E St
E St
W 4th St
Buckboard Dr
Sacramento Northern Trail
20th St
C St
4th St
Ascot Ave
CITY OF SACRAMENTO
See Map A5
See Map A7
See Map B6

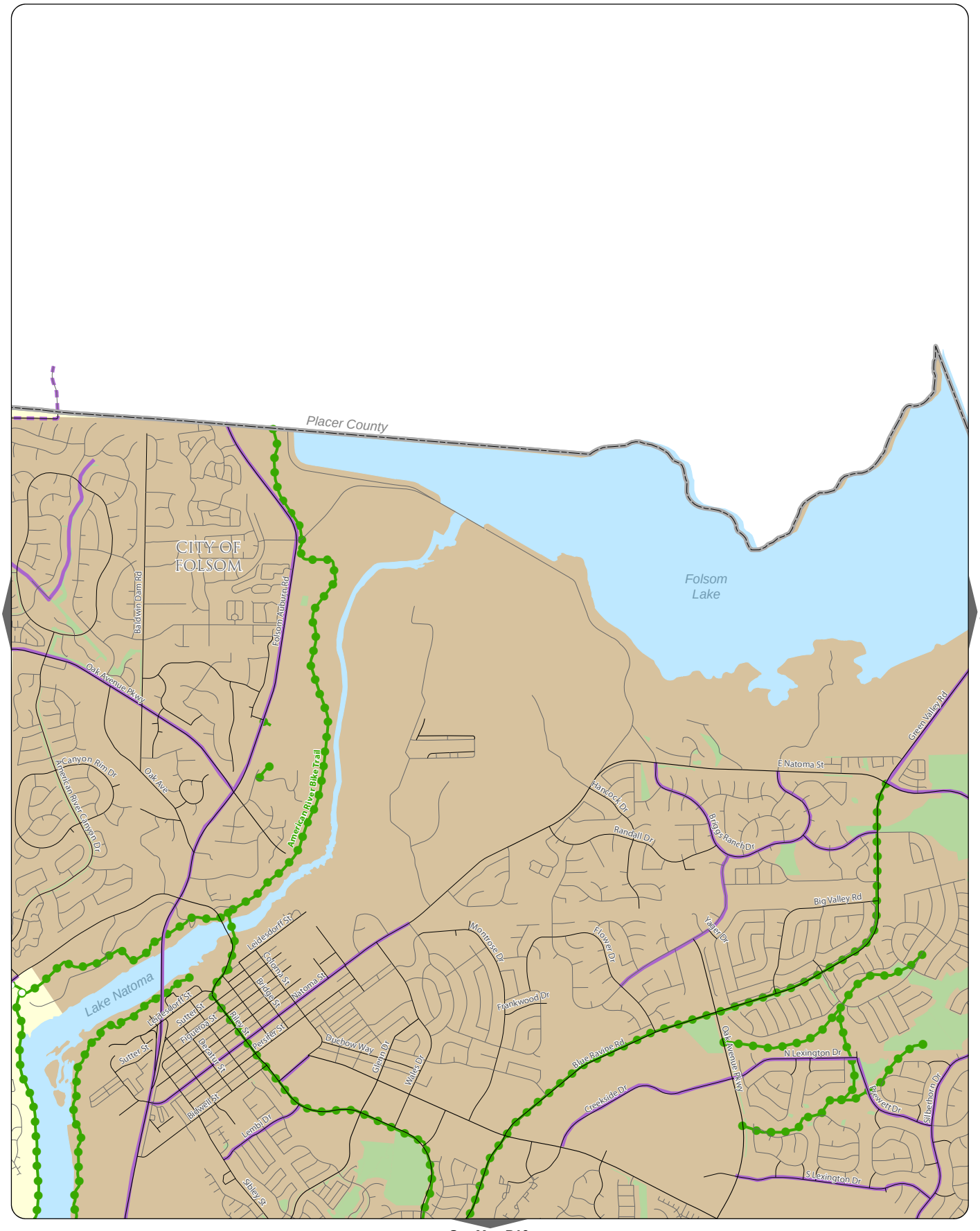


SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP A7
EXISTING AND PLANNED BICYCLE FACILITIES

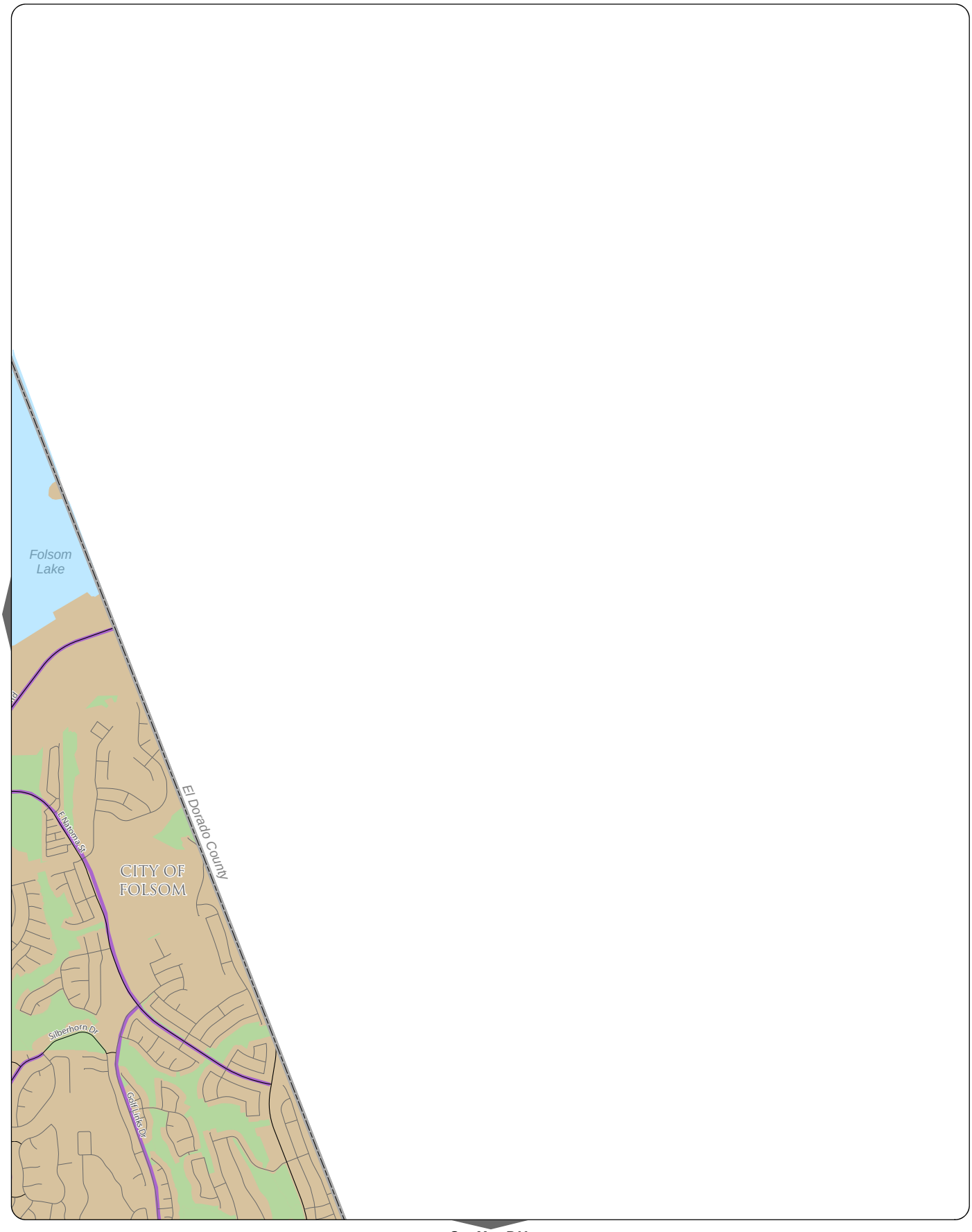

Placer County
Great Valley Dr
Ridgepoint Dr
Olive Ave
Olive Ave
Lewis Ave
Pruitt Ln
Hawkeye Ln
Rich Ln
Palmerson Dr
Cook Riolo Rd
Antelope North Rd
Poker Ln
Cook Riolo Rd
Antelope North Rd
Roseville Rd
Katella Way
Andahlet Dr
Roseville Rd
Whyte Ave
Buttermut Dr
Lichen Dr
Zenith Dr
Sandalwood Dr
Rollingwood Blvd
Rusch Dr
Grand Oaks Blvd
Twin Oaks Ave
Watson Way
Old Auburn Rd
Saybrook Dr
Tupelo Dr
Navion Dr
Pratt Ave
Auburn Blvd
Antelope Rd
Daly Ave
Eureka Ln
80
Skylane Dr
Calvin Dr
Roseville Rd
Tupelo Dr
Roca Way
Van Maren Ln
Carriage Dr
Raintree Dr
Cobalt Way
Pippin Way
Canelo Hills Dr
CITY OF
CITRUS HEIGHTS
Vancelot Dr
Woodforest Dr
Diablo Dr
Hedgewood Dr
Karm Way
Fletcher Ave
Sylvan Rd
Sayonara Dr
Stock Ranch Rd
San Simeon Dr
Donegal Dr
Arcadia Dr
Greenback Ln
Clearwater Dr
Spruce Ave
Wasson Ln
Verner Oak Ct
Ave
Shupe Dr
Speary Dr
Brooktree Dr
Bird Cage St
Brinef Dr
Hemlock St
Garfield Ave
Auburn Blvd
Hilltop Dr
Sylvester Way
Aslin Way
Oakcrest Dr
Coyle Ave
Palm Ave
Nonnie Ave
Mulburn St
Lincoln Oaks Dr
San Juan Ave
Macy Plaza Dr
Kingswood Dr
Kingswood Dr
See Map A7
See Map A9
See Map B8


Placer County
CITY OF CITRUS HEIGHTS
CITY OF FOLSOM
Placer County Trail
Linda Creek Ct
Chris Ln
Country Creek Dr
Steven Ave
Hadleigh Dr
Peerless Ave
Cherry Ave
Cardwell Ave
Santa Juanita Ave
Wachtel Way
Wintergreen Dr
Amna Ln
Blaze Trail Ct
Lazy Trail Ct
Hazel Ave
Golden Gate Ave
Excelsior Ave
Granite Ave
Mountain Ave
Villa Oak Dr
El Sobrante Way
Nipawin Way
Eden Oaks Ave
Telegraph Ave
April St
Quail Vista Ln
Olivine Ave
Larkspur Ln
Citrus Heights Powerline
Oak Ave
Floyd Ave
Merike Way
Suncreek Way
Almond Ave
Beech Ave
Bobby St
Nevins Way
Deanna Ave
Elm Ave
Woodmore Oaks Dr
Old Ranch Rd
Strong Ave
Noel Dr
Central Ave
Carriewood St
La Junta Dr
Hickory Ave
Thayer Way
Potts Ct
Calista St
Kon Tiki Dr
Chastain St
Walnut Ave
Vallejo Dr
Wyatt Ln
Sundance Dr
Northwind Way
Skyview Dr
Woodlake Hills Dr
Foxfire Dr
Trailside Dr
Astaire Ln
Brando Loop
Wittenham Way
N Star Way
Milky Way
Stratus Dr
Blythe Ave
Birks Ln
Gaines Ave
Kingsdale Ave
Westhaven Dr
Naranja Way
Coan Ln
Calvert Ave
Filbert Ave
Chestnut Ave
Orangevale Ave
Placer Mine Rd
Ore St
Loma Ln
Greenback Ln
Chestwall St
Main Ave
Oro Way
Pecor Way
Polly Ave
Rich Hill Dr
Hialeah Way
Sonia Ave
Sherry Dr
Fortuna Way
Glori Dawn Dr
Kona Way
Genoa Ave
Pecan Ave
Sunbonnet Dr
Hoffman Ln
Kenneth Ave
Erika Jean Way
Manana Way
Dahboy Way
Char Ave
Monica Ave
Almaz Ave
Stehlin Ave
Pershing Ave
Lumina Way
Celine Dr
Treecrest Ave
Deseret Ave
McKay St
Jaytee Way
Sheraton Dr
Latin Way
Riviera Way
Beech Ave
Robres St
Lance Ave
Jonnie Way
Britland Way
Custer Ave
Amerigo Ave
Leedy Ln
Barrhill Way
Skyridge Dr
Castlemont Cir
De Pontil Dr
Blue Oak Dr
Hallenoak Ln
Tonkin Dr
Lake Natoma Dr
Beachwood Dr
Erwin Ave
Shumway Dr
See Map A8
See Map A10
See Map B9



SACRAMENTO COUNTY BICYCLE MASTER PLAN

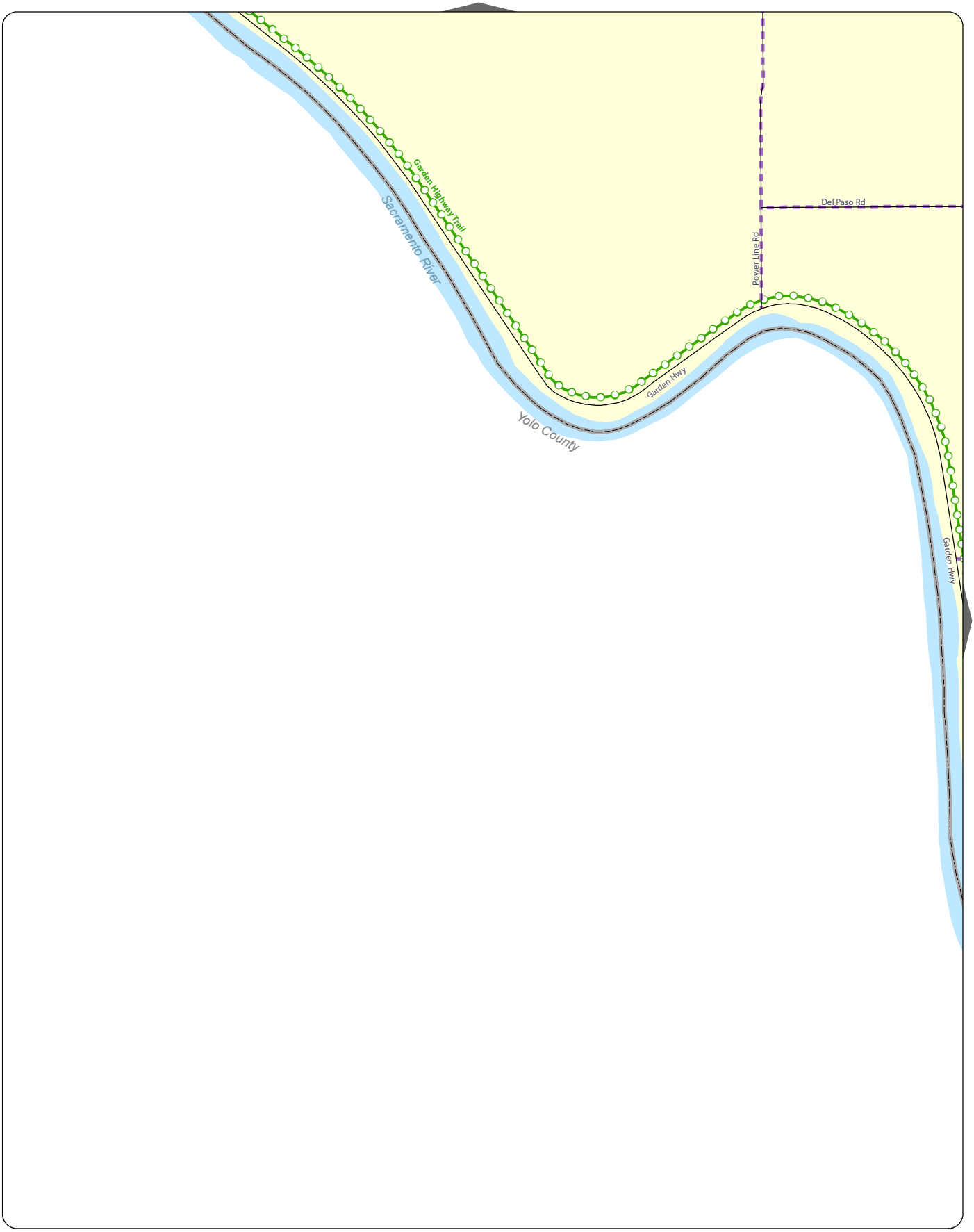
MAP A10
EXISTING AND PLANNED BICYCLE FACILITIES



SACRAMENTO COUNTY BICYCLE MASTER PLAN

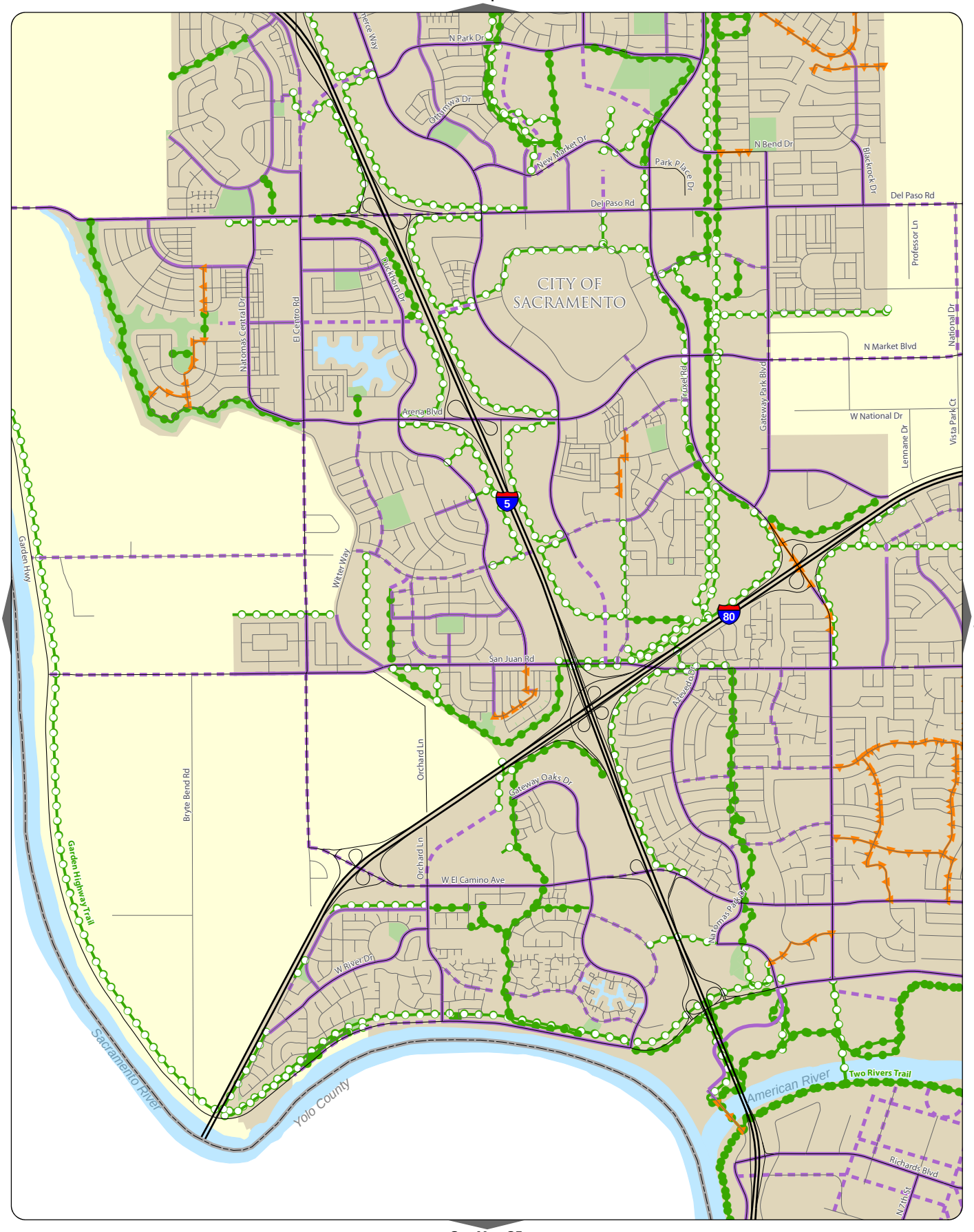
MAP A11
EXISTING AND PLANNED BICYCLE FACILITIES

See Map A4



See Map B5

See Map A5

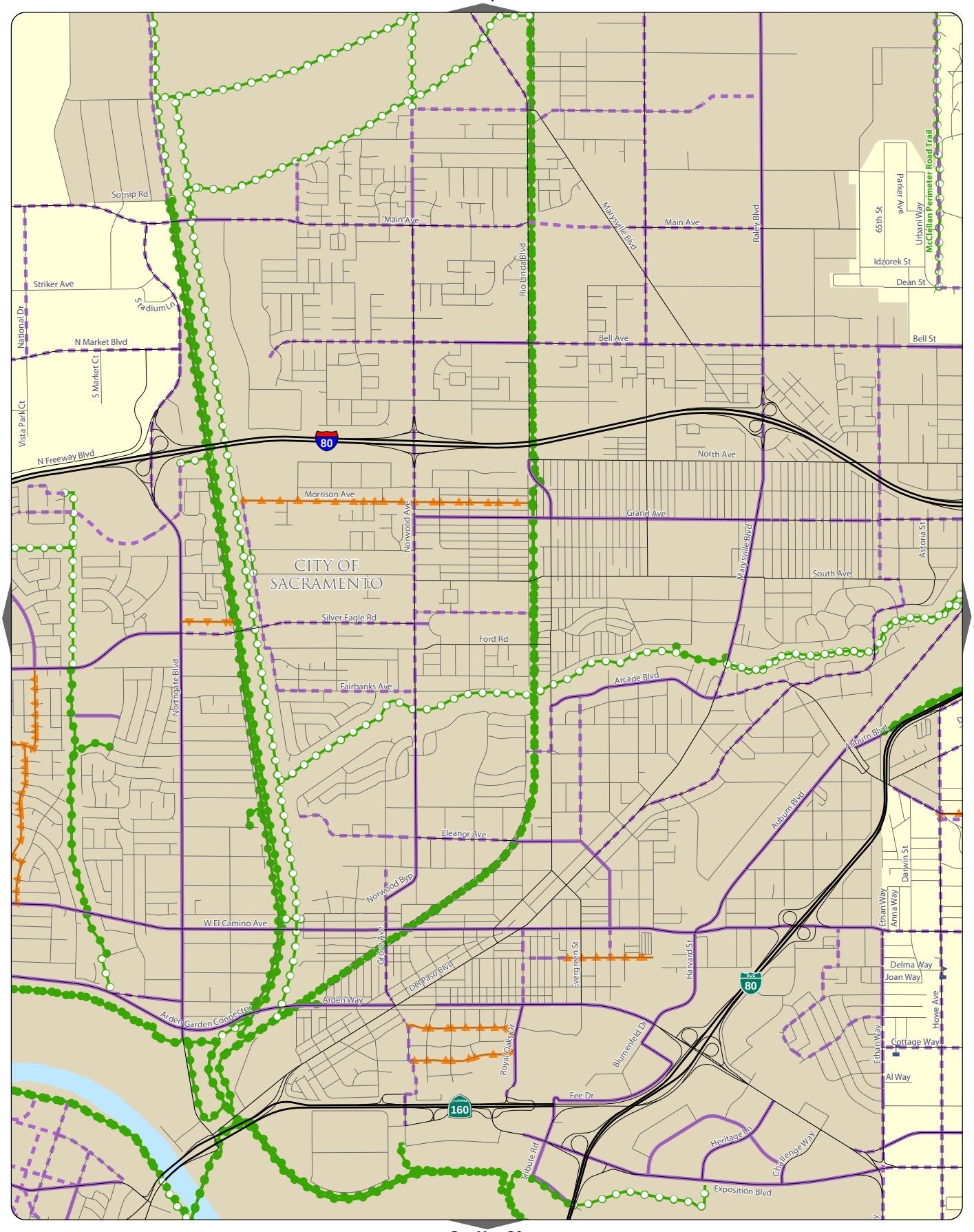


See Map B4

See Map B6

See Map C5

See Map A6



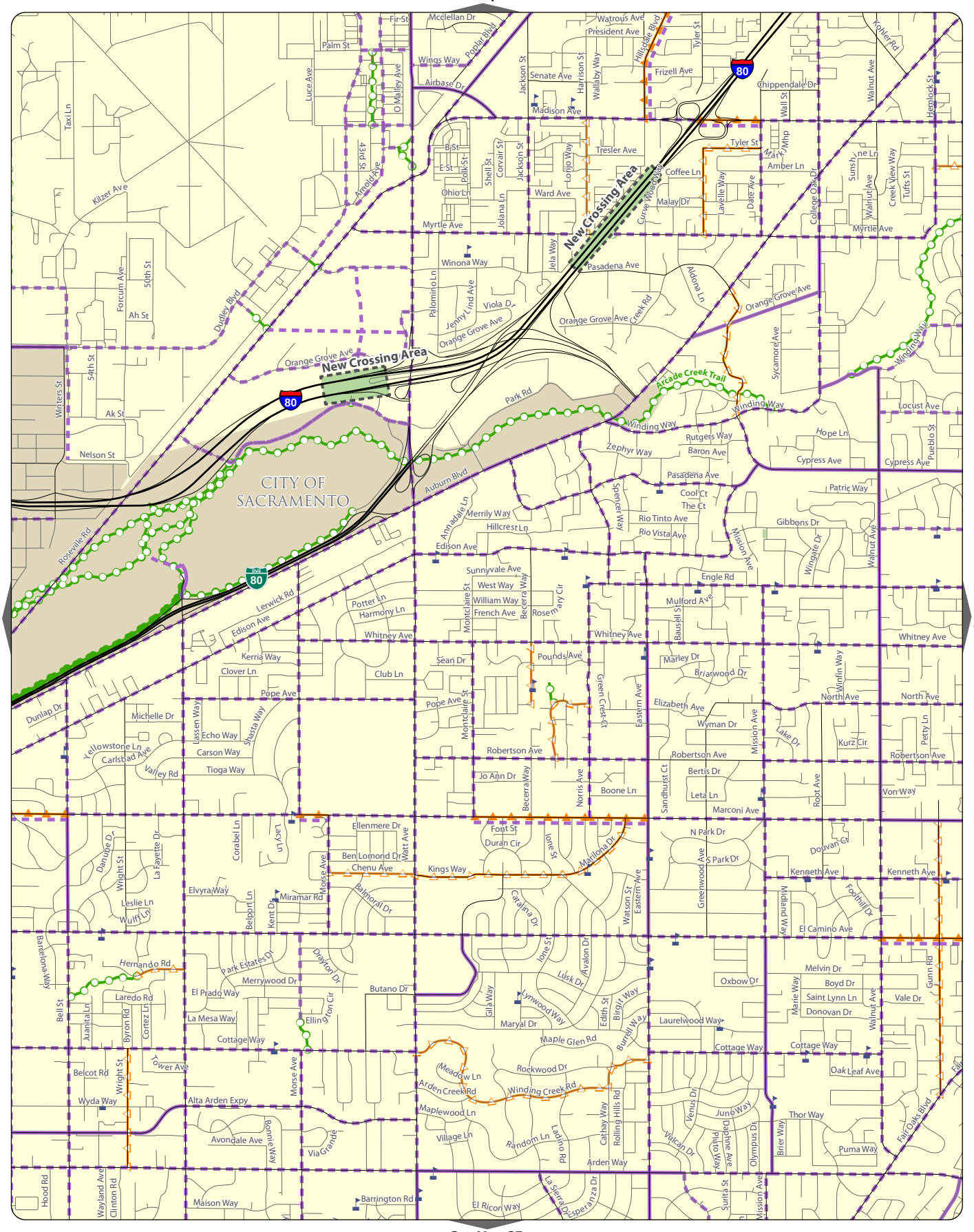
See Map B5

See Map B7

See Map C6

MAP B6
EXISTING AND PLANNED BICYCLE FACILITIES

See Map A7

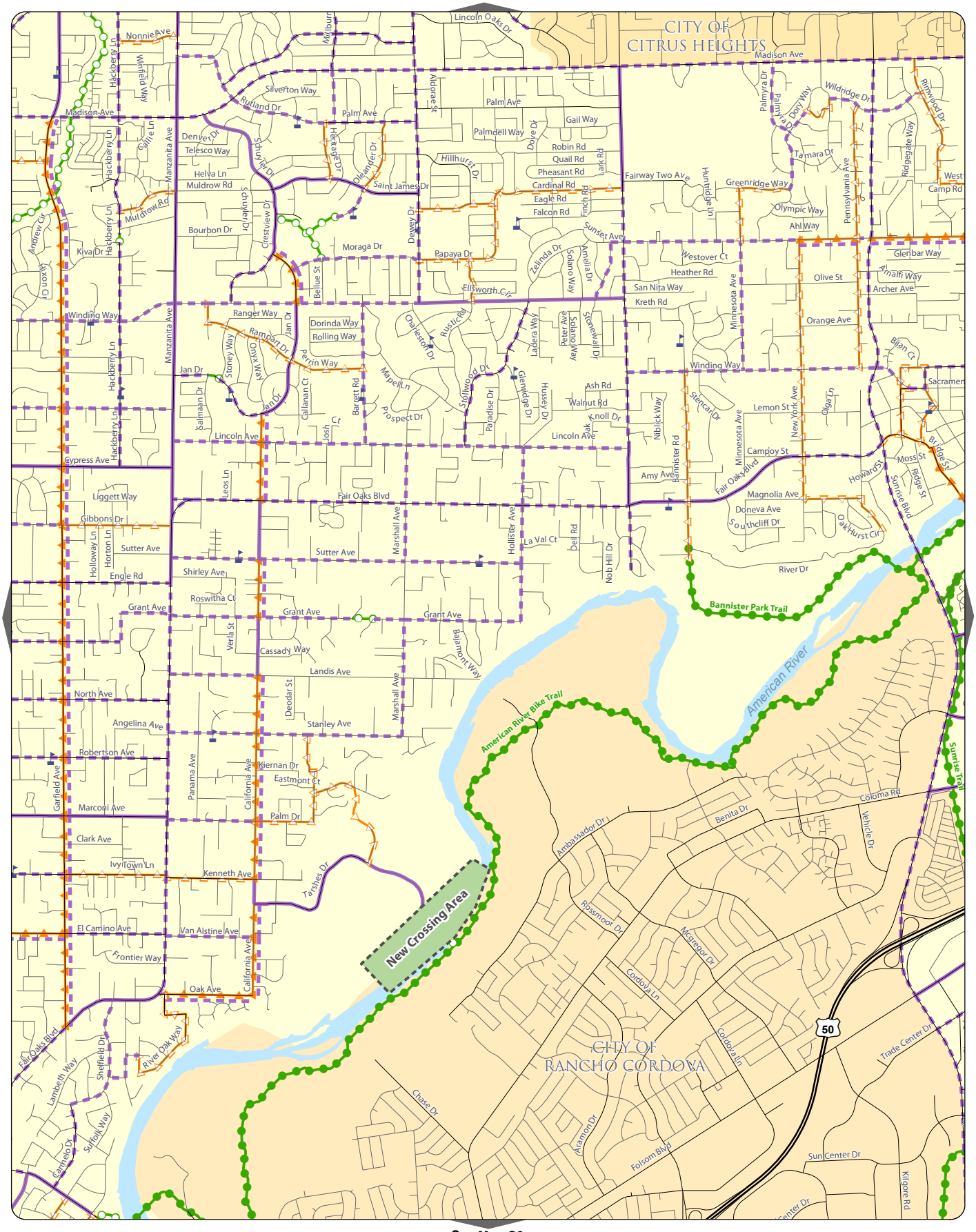


See Map B6

See Map B8

See Map C7

See Map A8



See Map B7

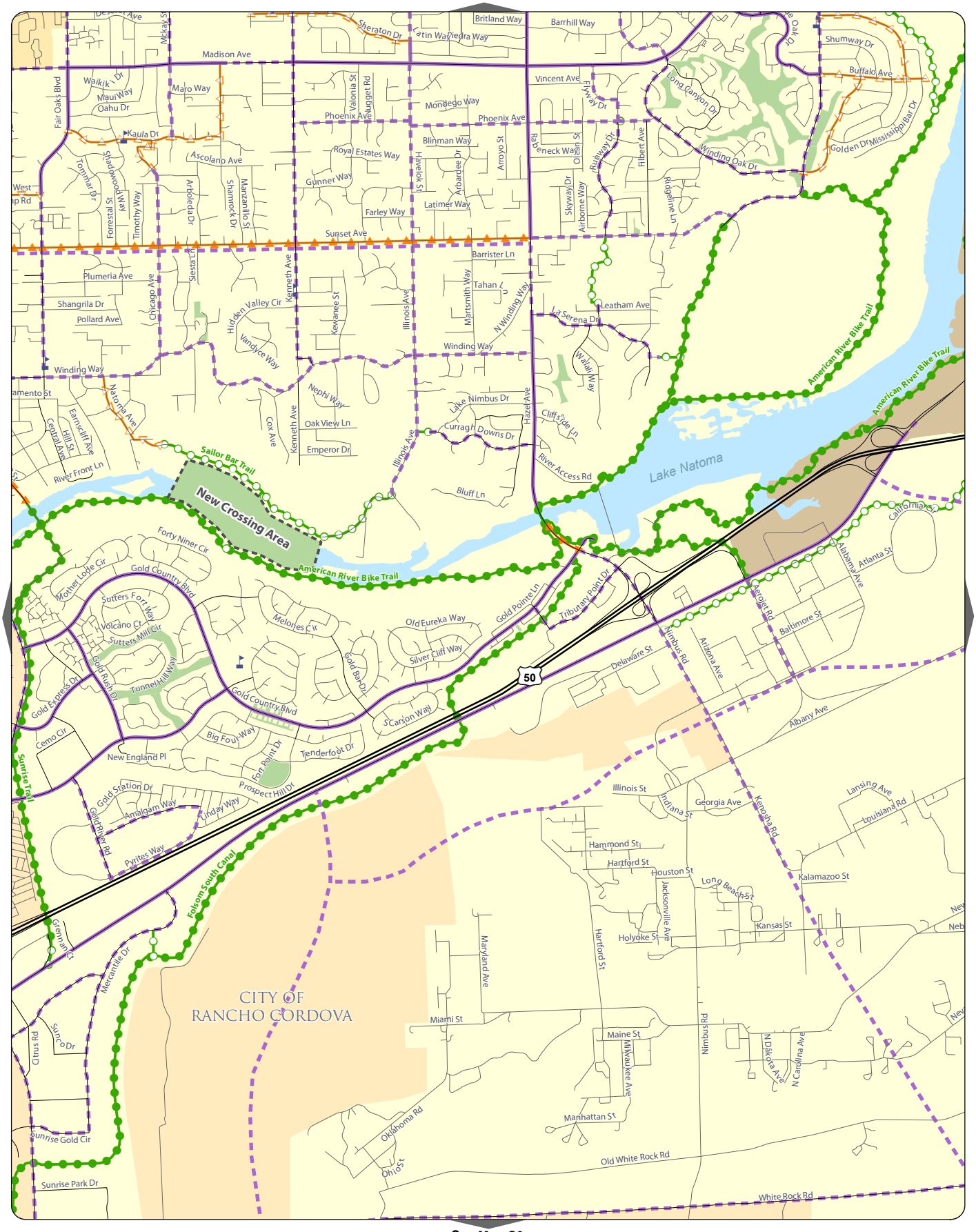
See Map B9

See Map C8

SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP B8
EXISTING AND PLANNED BICYCLE FACILITIES

See Map A9



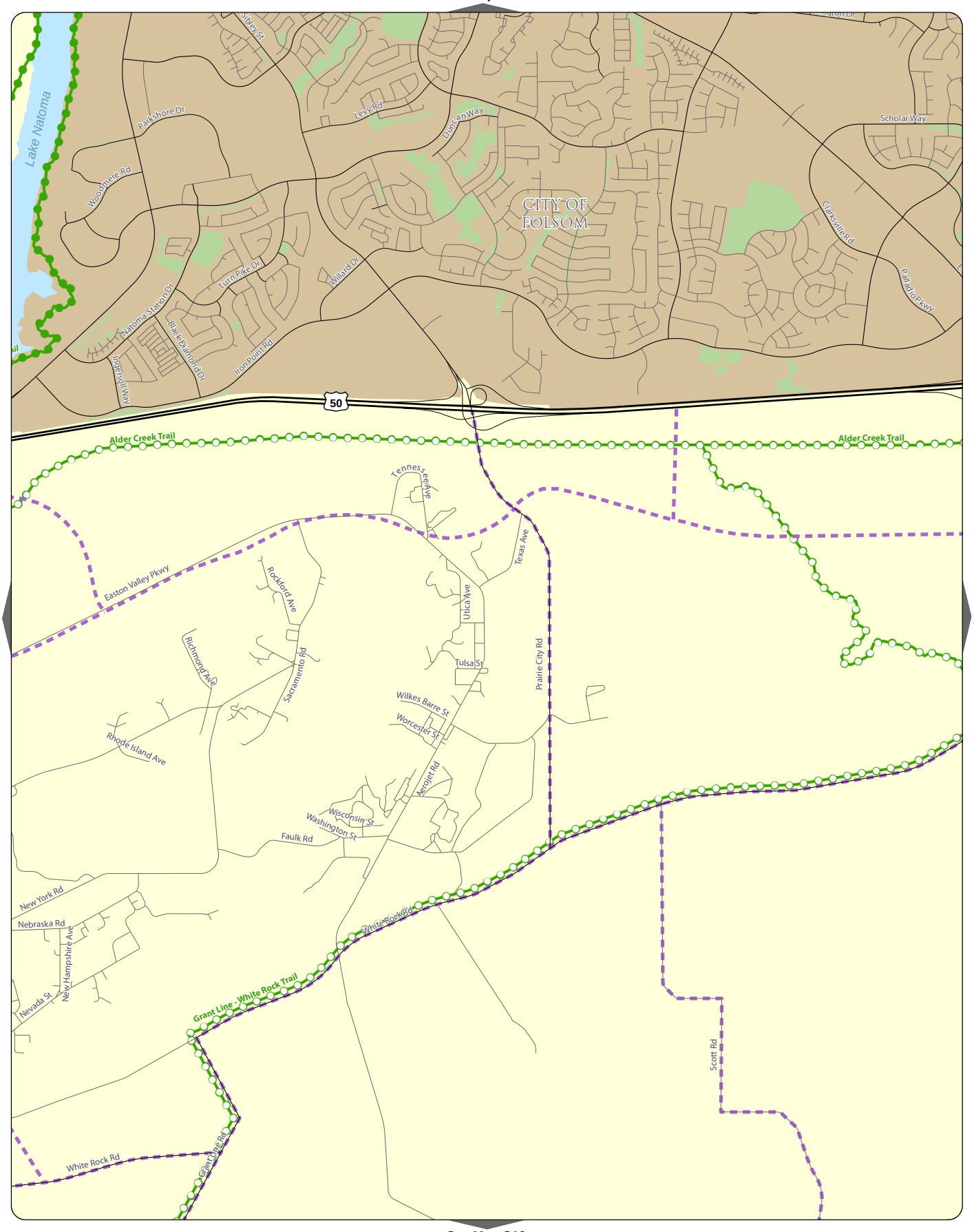
See Map B8

See Map B10

See Map C9

MAP B9
EXISTING AND PLANNED BICYCLE FACILITIES

See Map A10



See Map B9

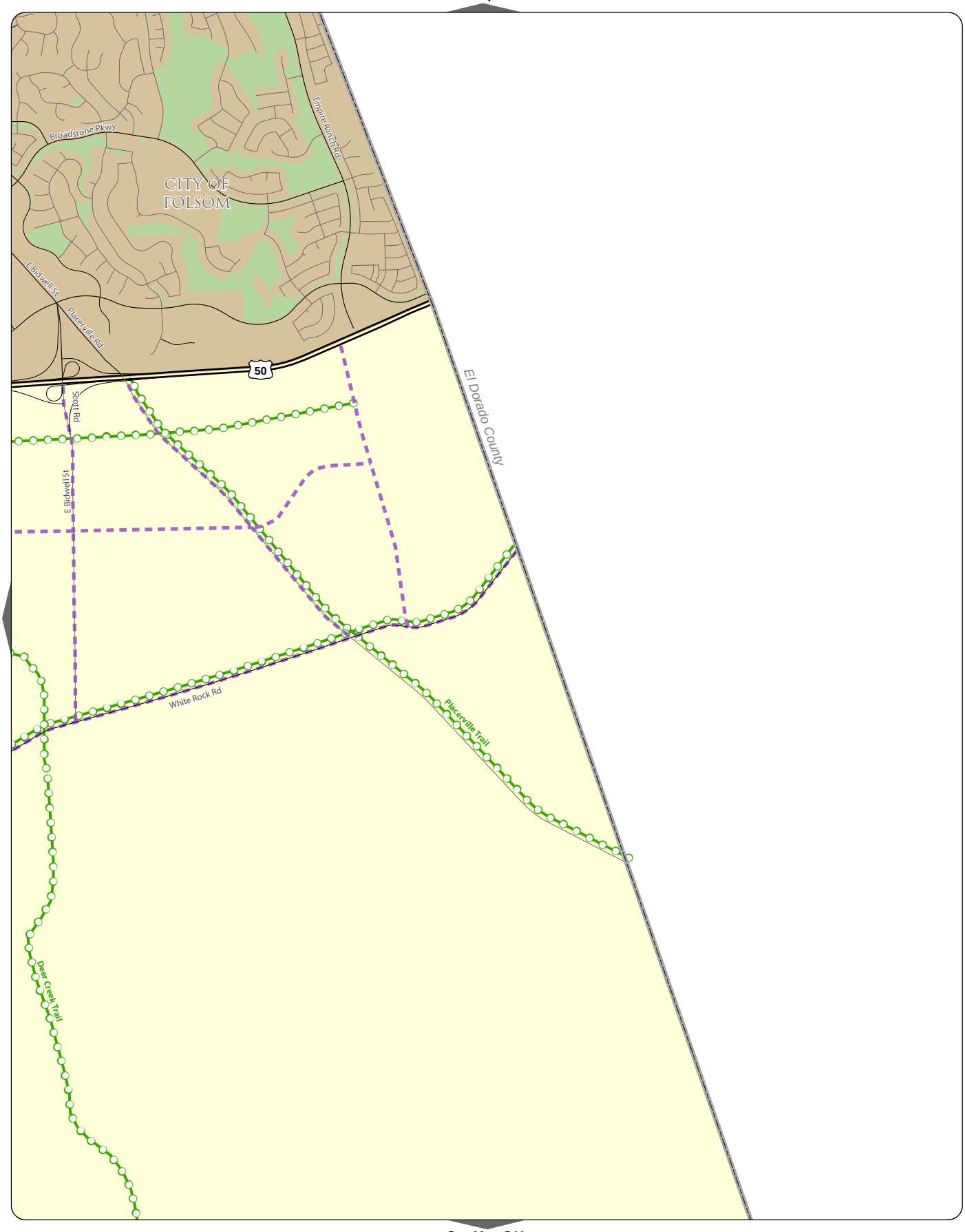
See Map B11

See Map C10

SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP B10
EXISTING AND PLANNED BICYCLE FACILITIES

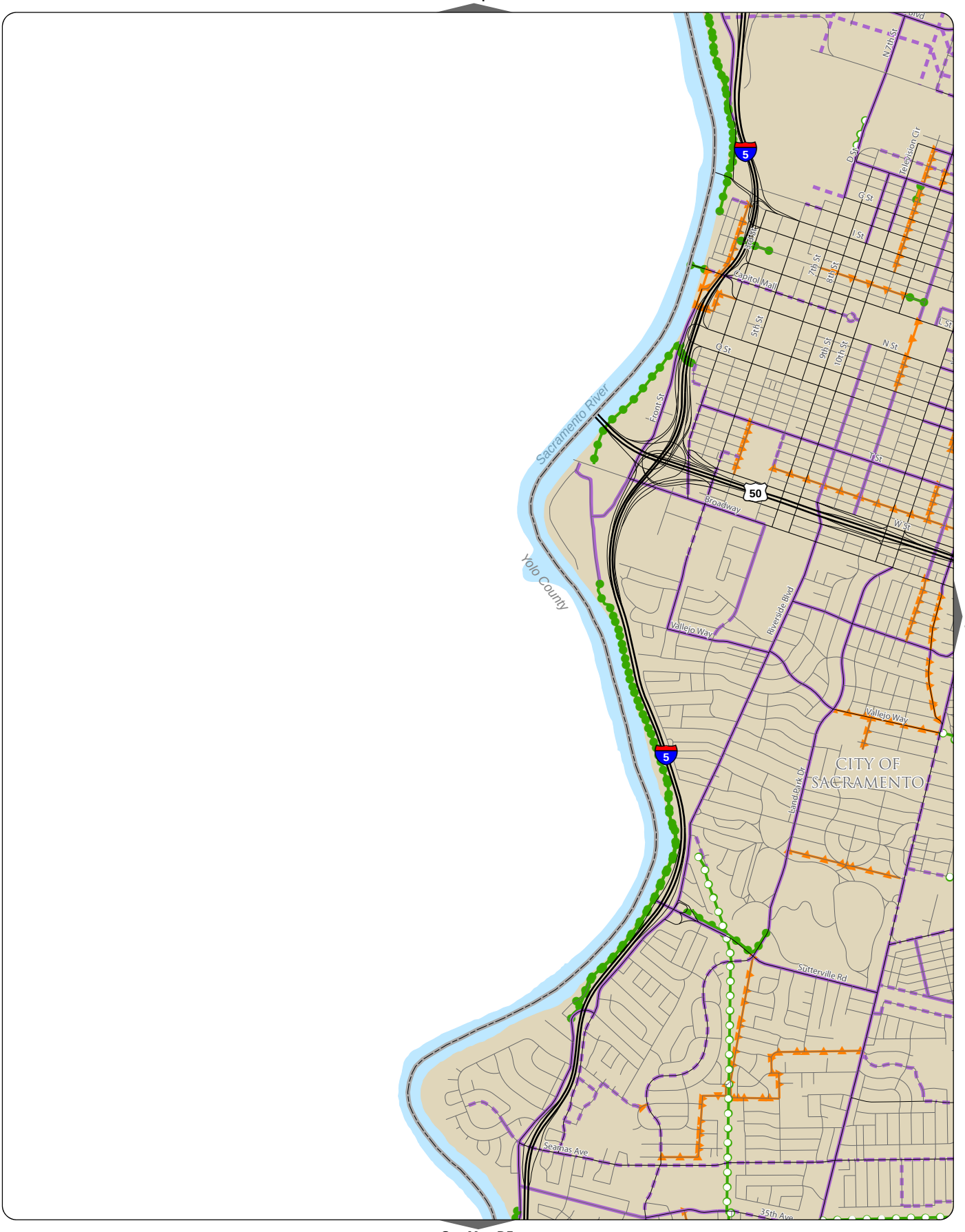
See Map A11



See Map B10

See Map C11

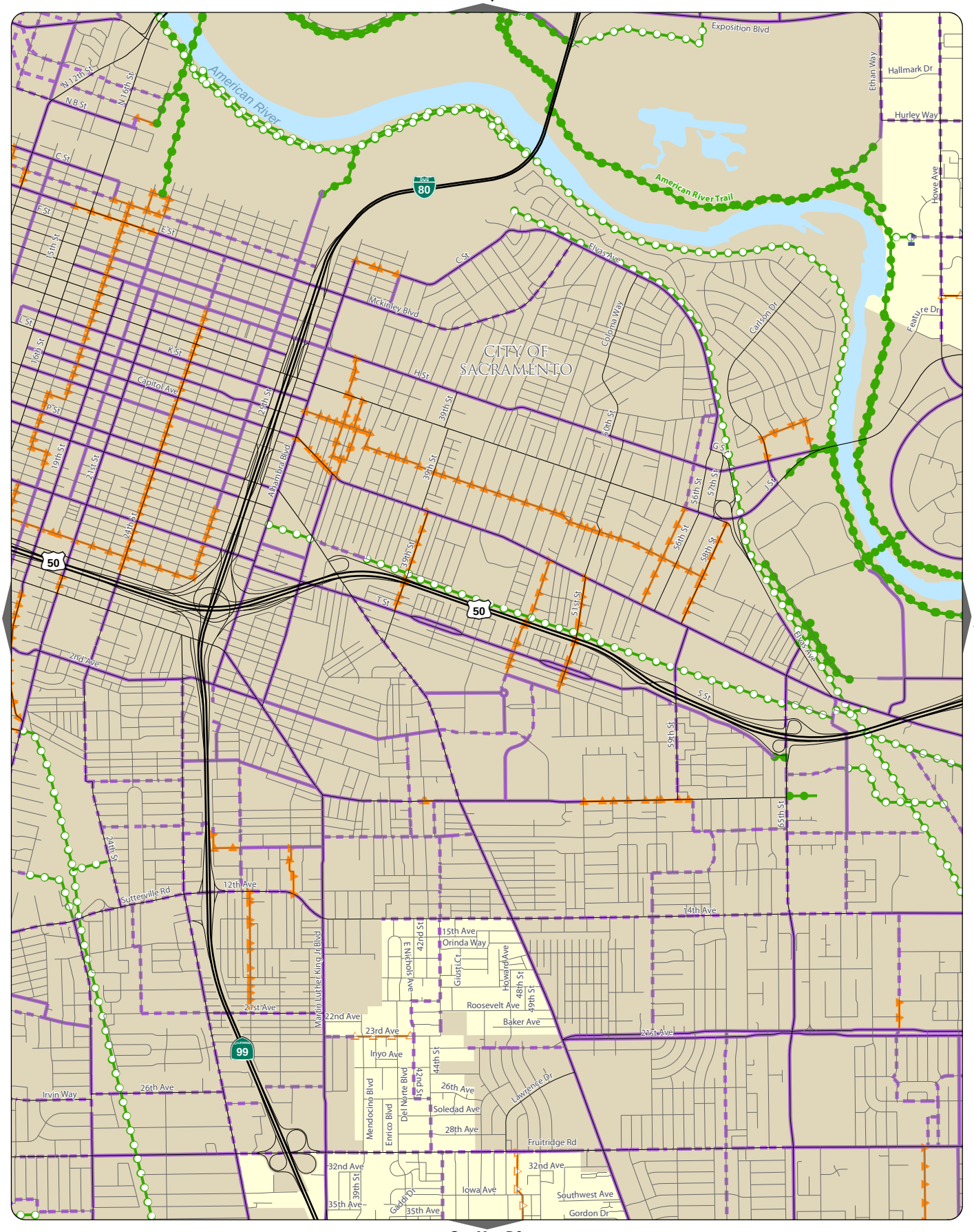
See Map B5



See Map C6

See Map D5

See Map B6

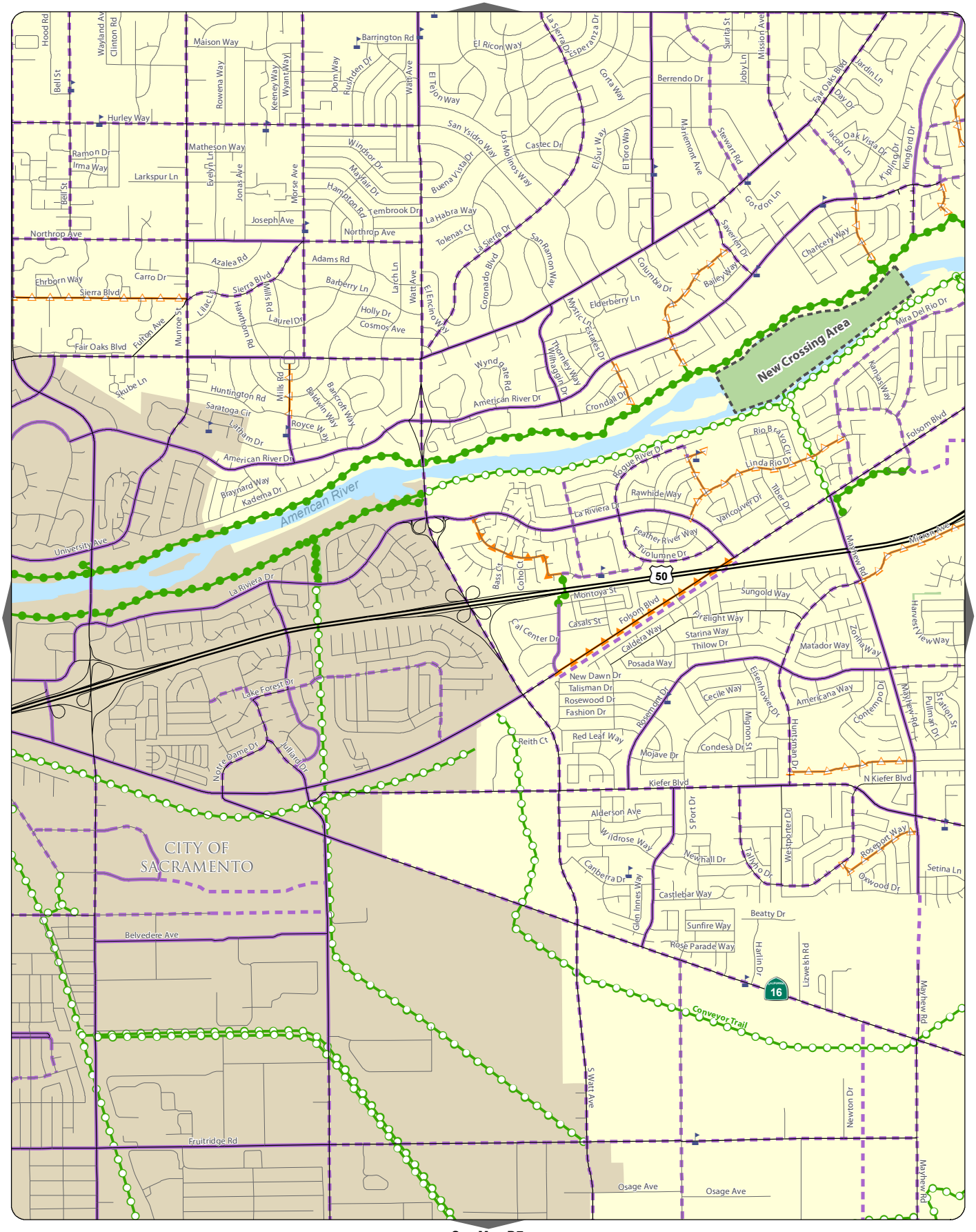


See Map C5

See Map C7

See Map D6

See Map B7



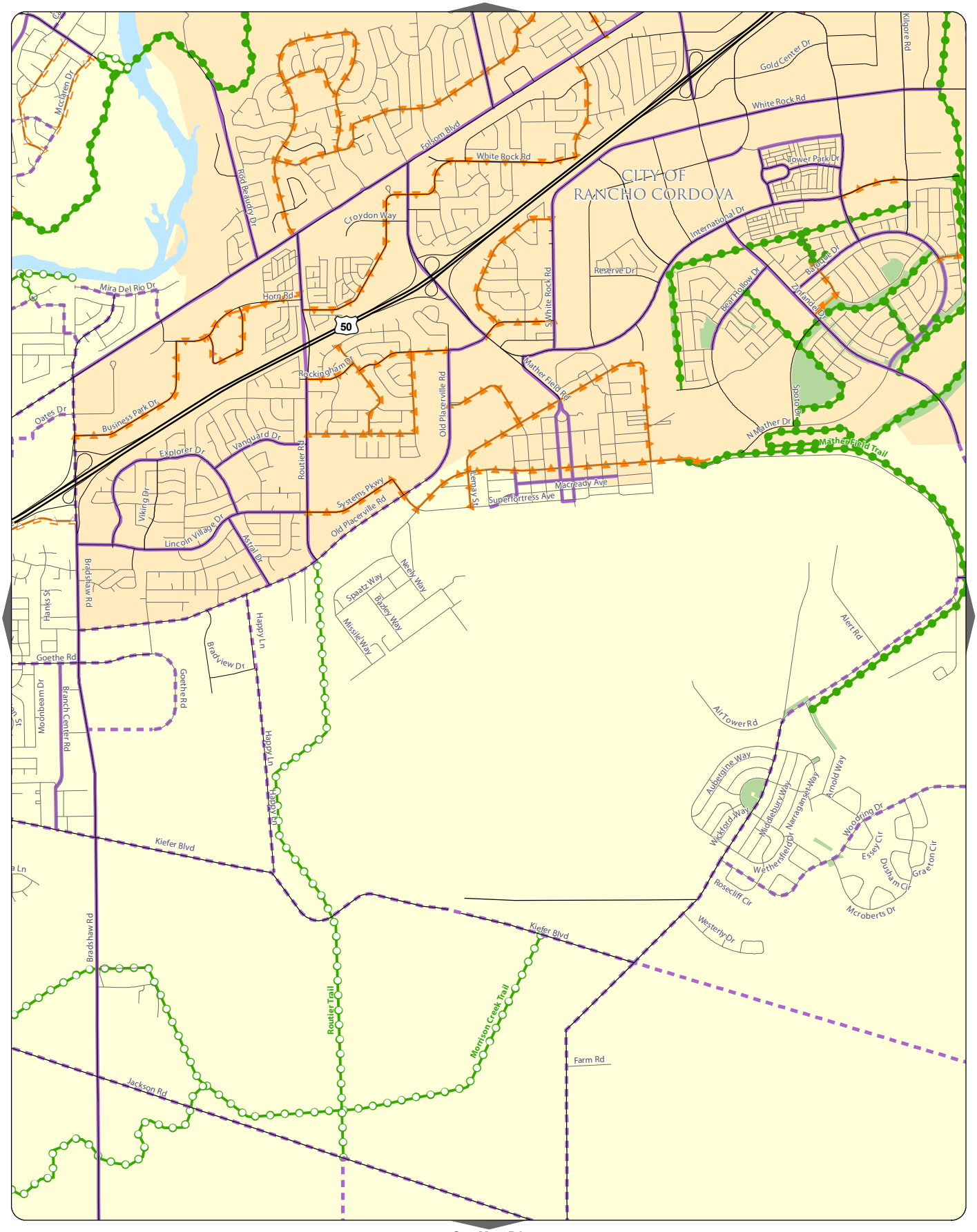
See Map C6

See Map C8

See Map D7

MAP C7
EXISTING AND PLANNED BICYCLE FACILITIES

See Map B8

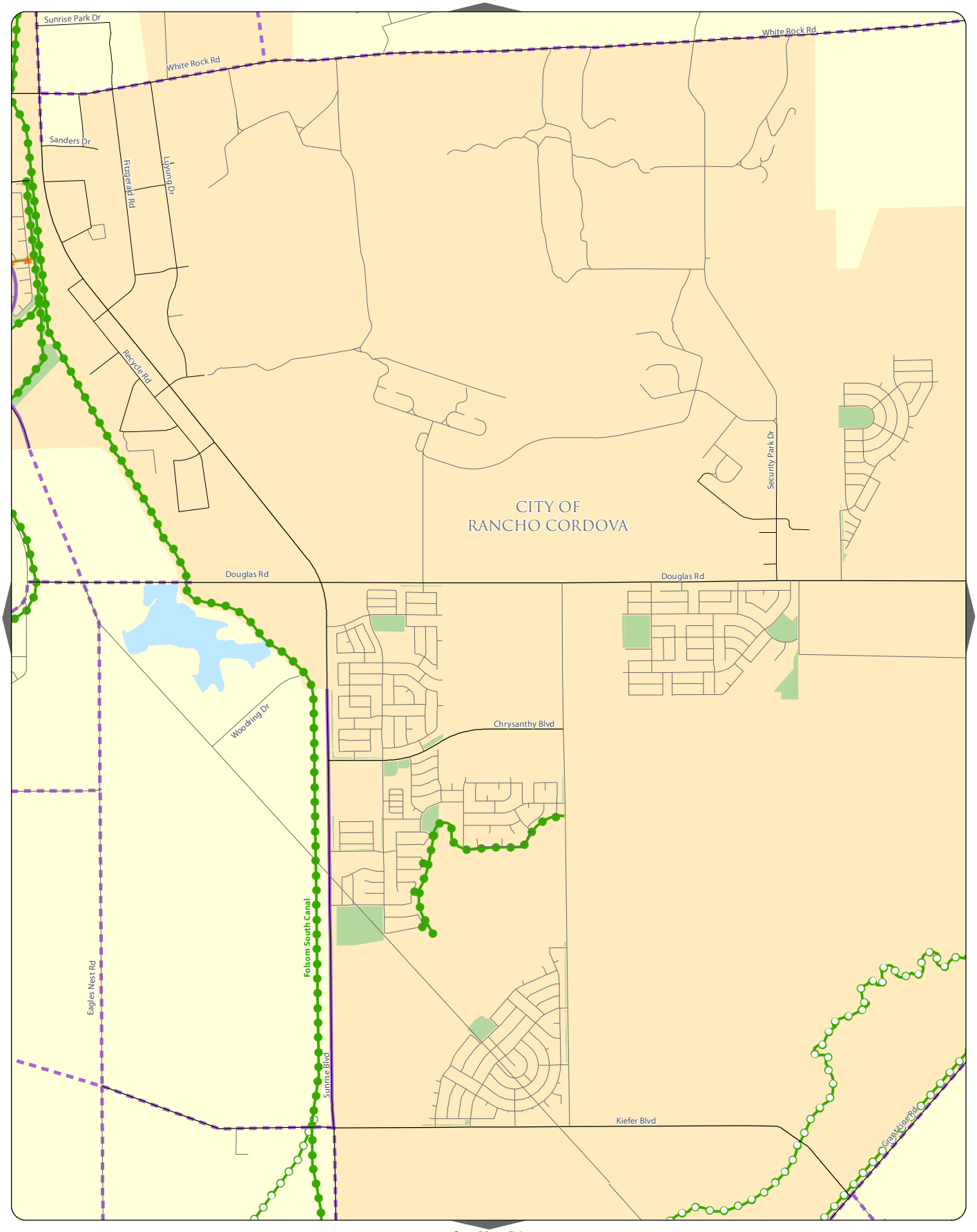


See Map C7

See Map C9

See Map D8

See Map B9



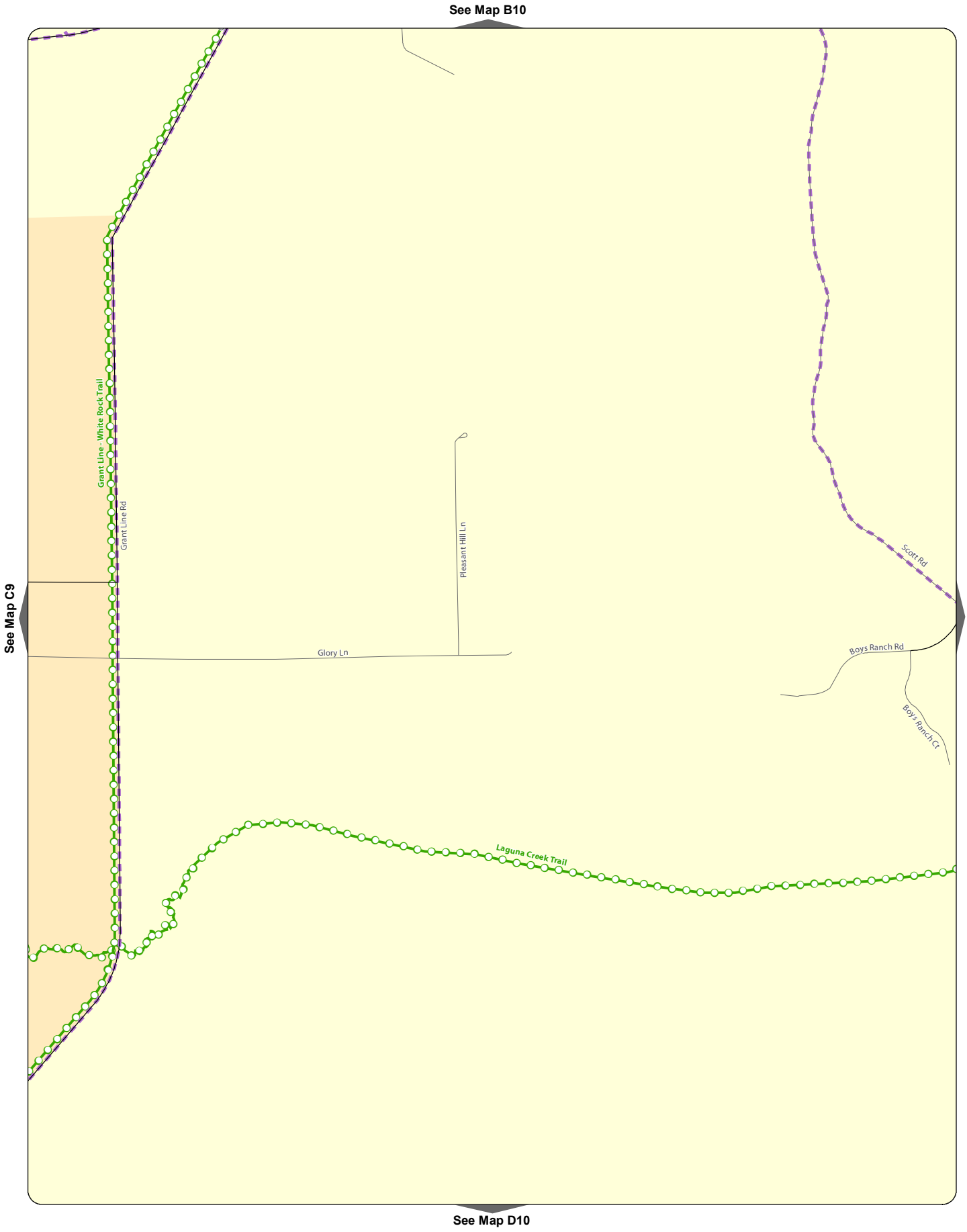
See Map C8

See Map C10

See Map D9

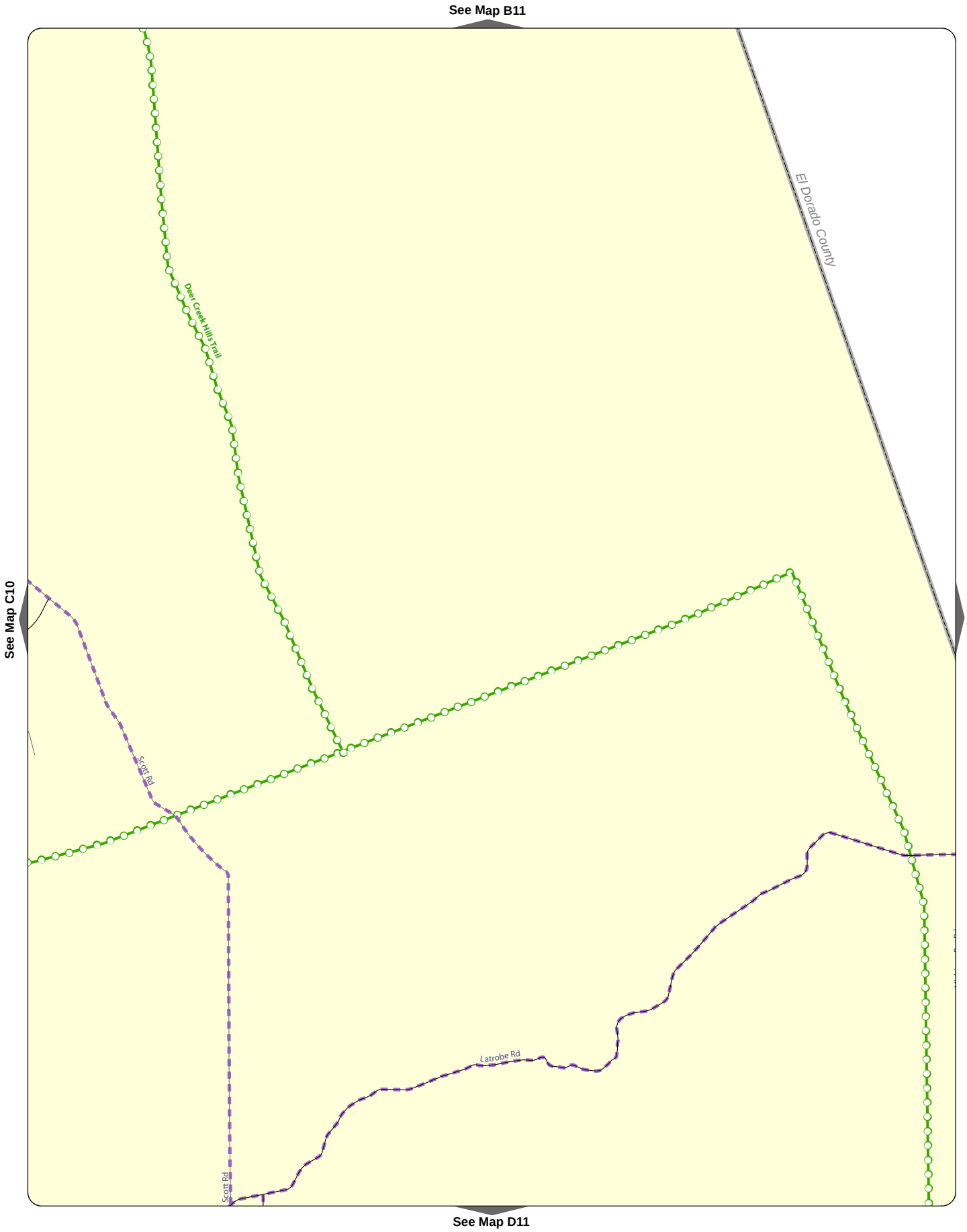
SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP C9
EXISTING AND PLANNED BICYCLE FACILITIES



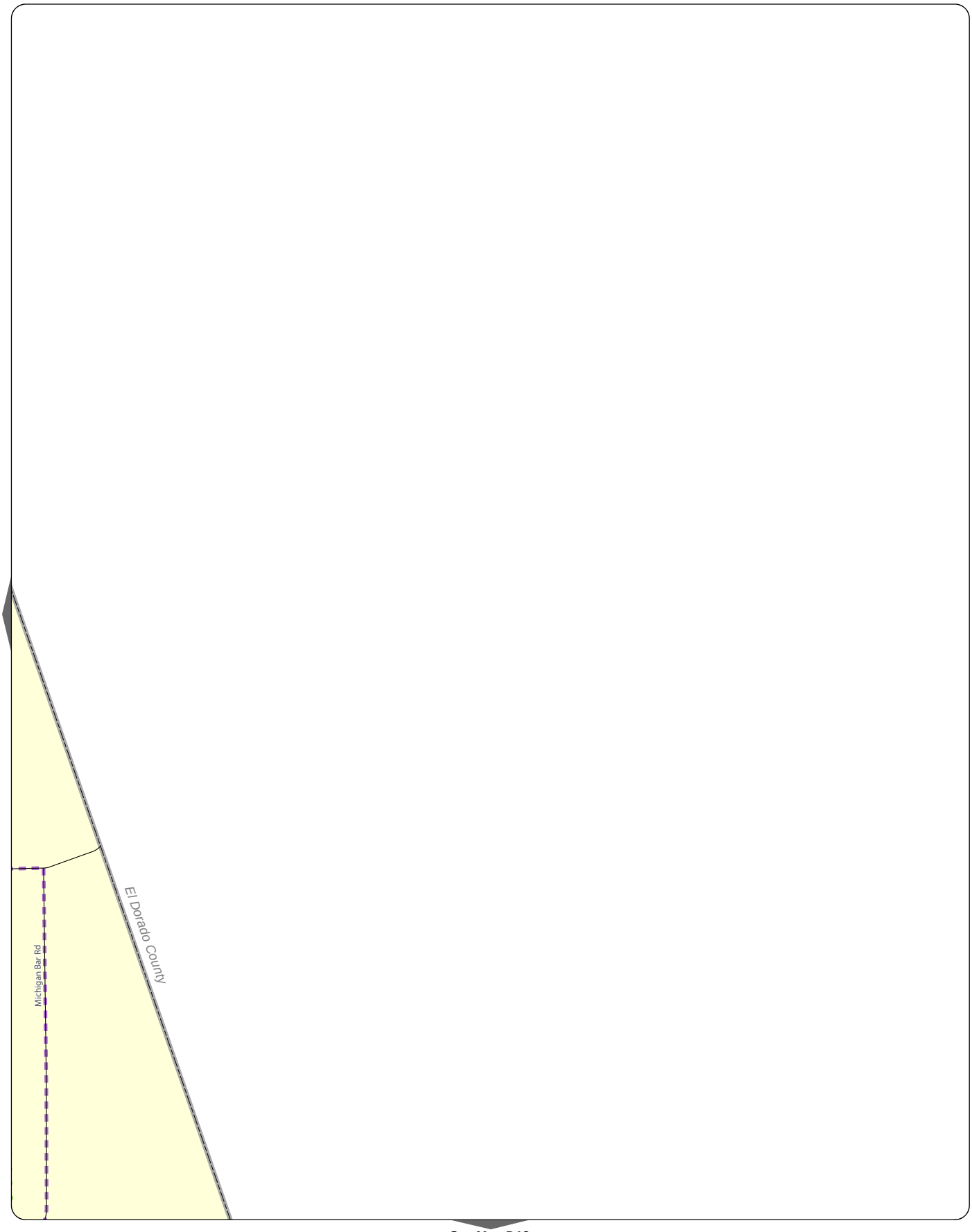
SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP C10
EXISTING AND PLANNED BICYCLE FACILITIES



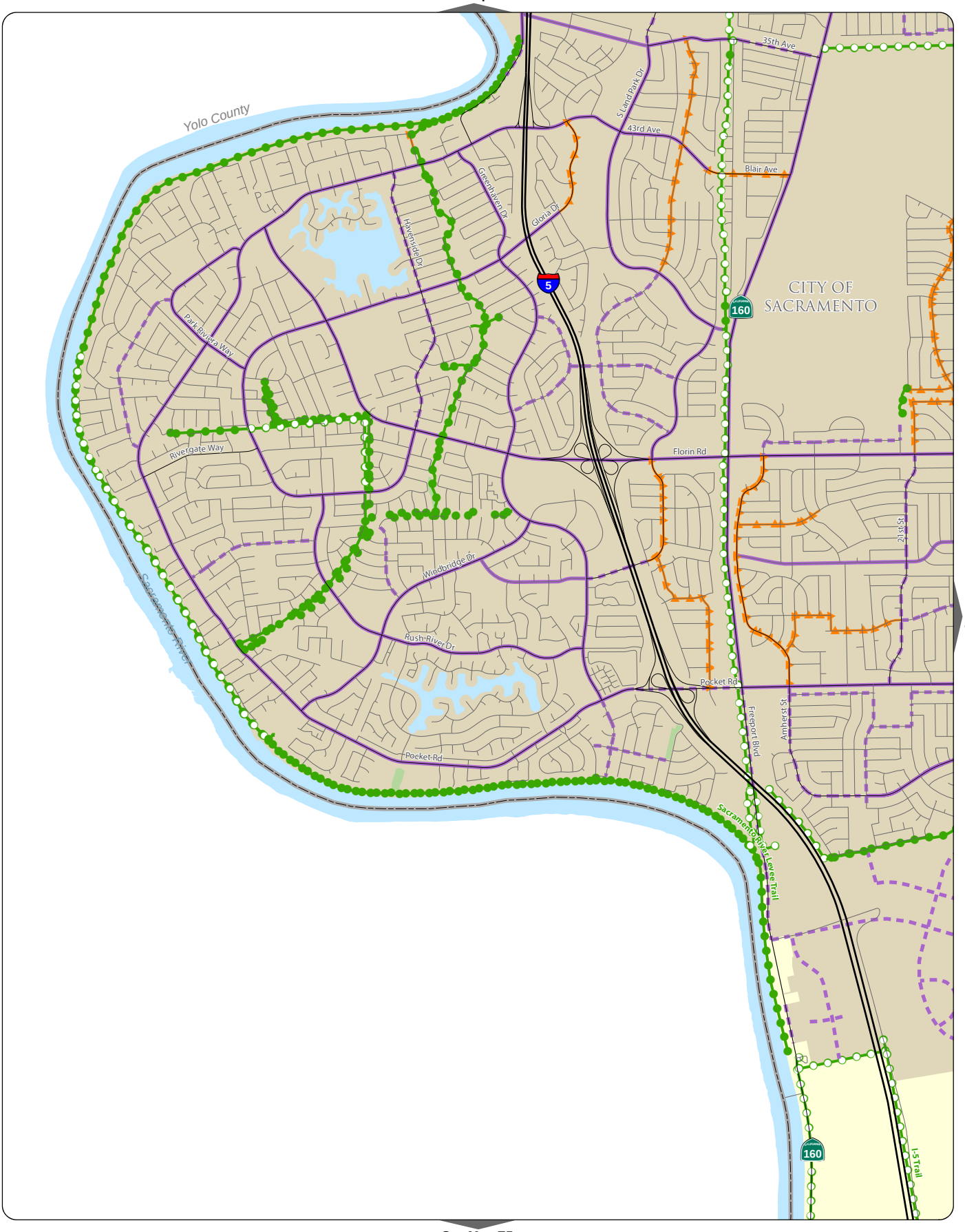
SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP C11
EXISTING AND PLANNED BICYCLE FACILITIES



MAP C12
EXISTING AND PLANNED BICYCLE FACILITIES

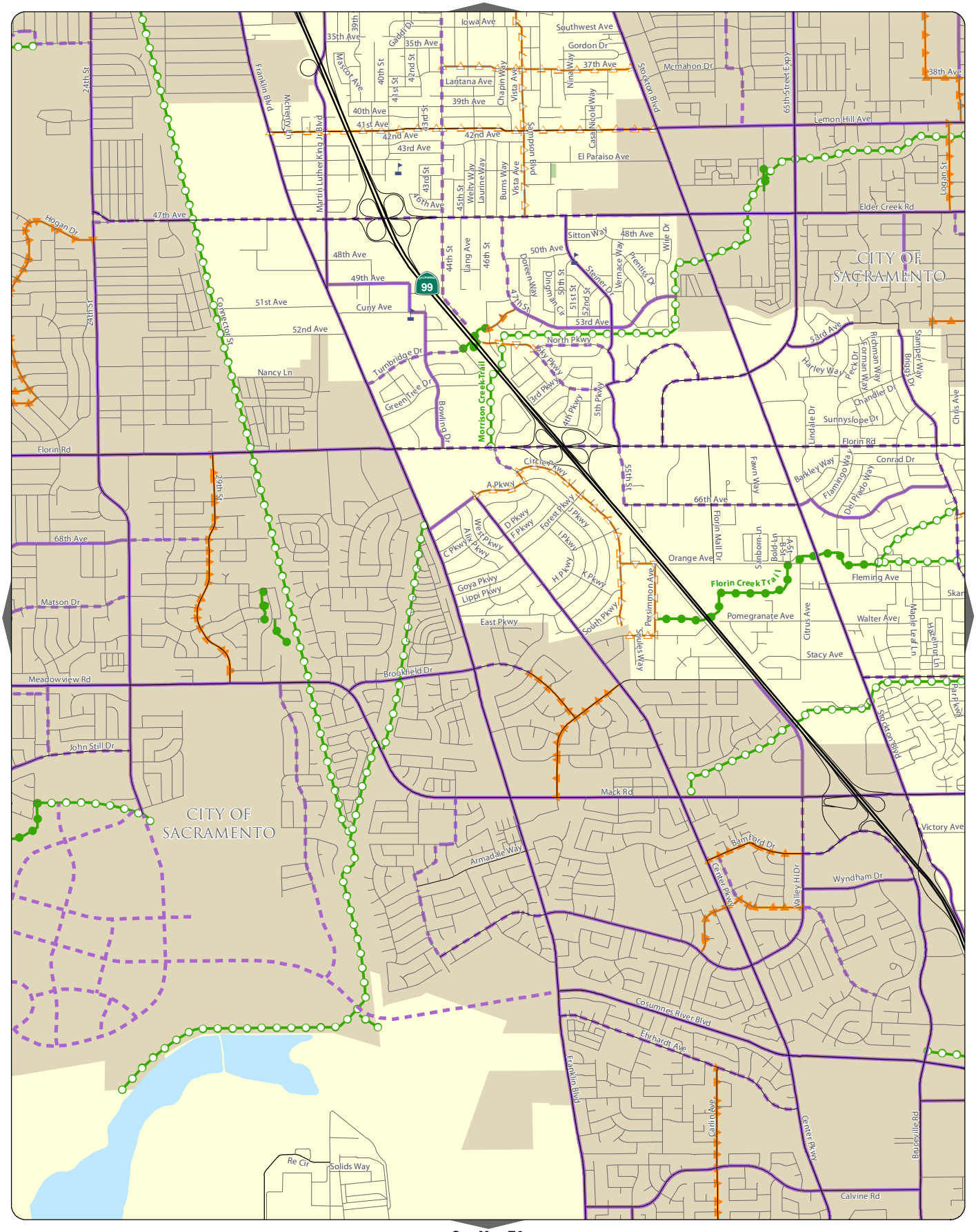
See Map C5



See Map D6

See Map E5

See Map C6



See Map D5

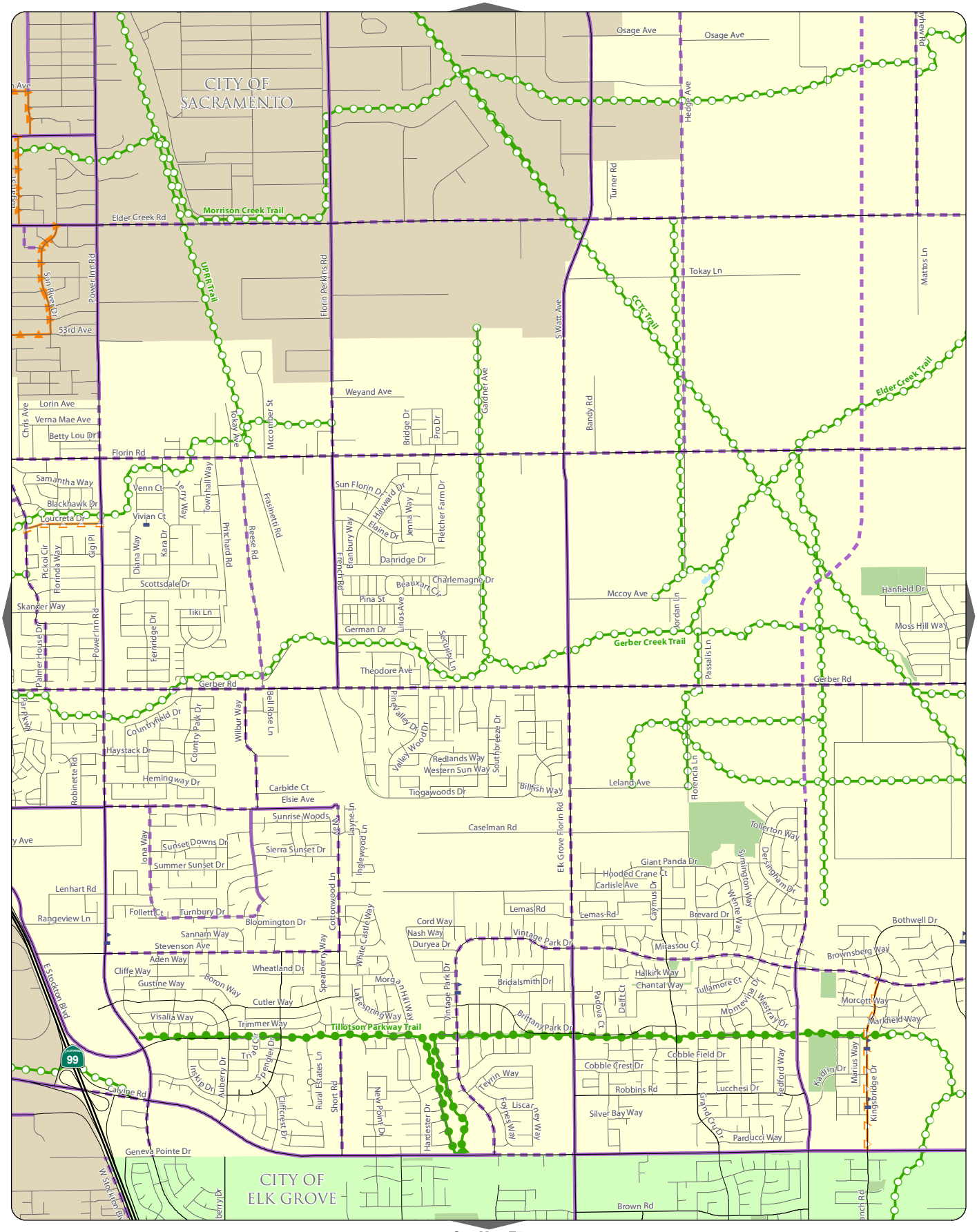
See Map D7

See Map E6

SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP D6
EXISTING AND PLANNED BICYCLE FACILITIES

See Map C7



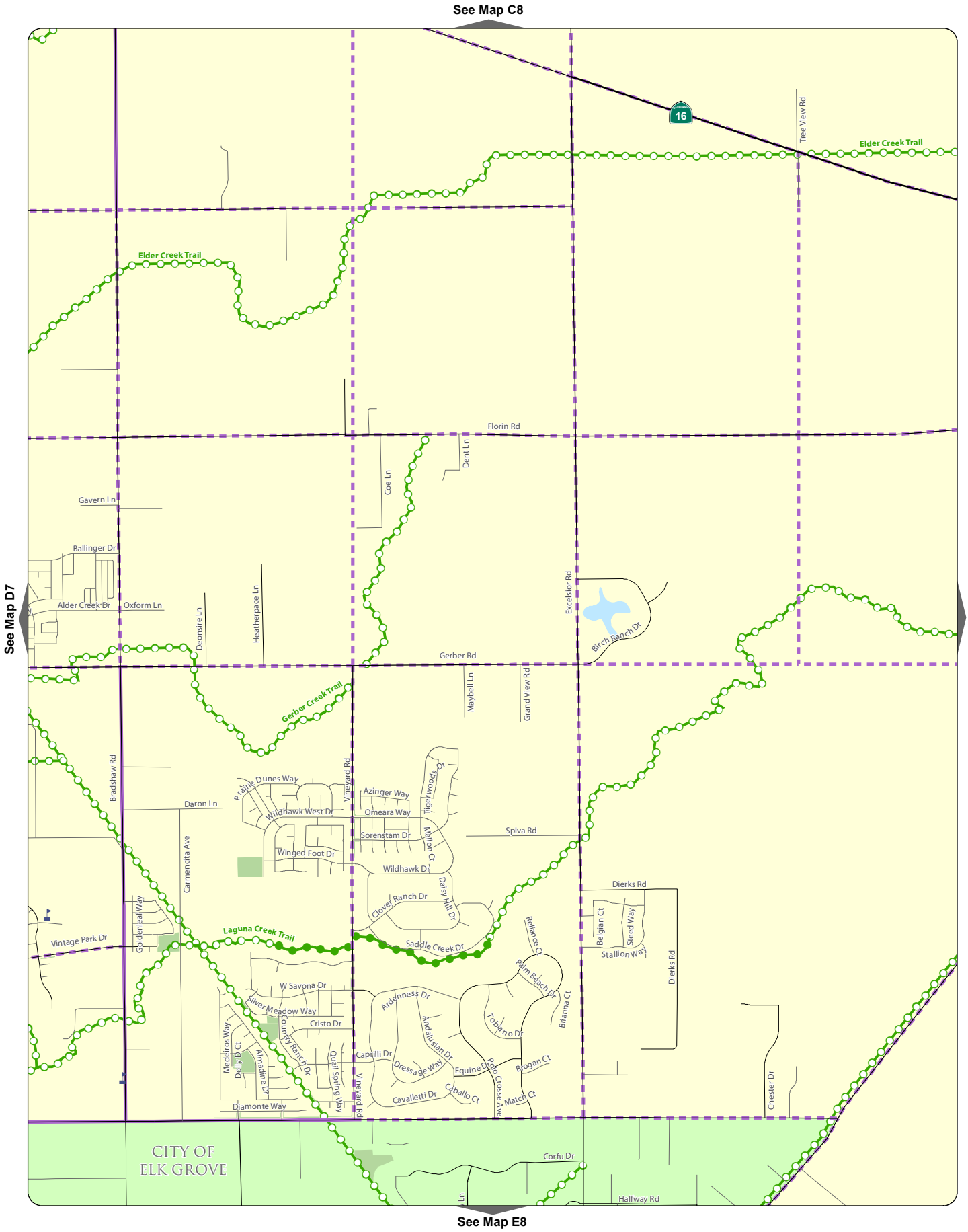
See Map D6

See Map D8

See Map E7

SACRAMENTO COUNTY BICYCLE MASTER PLAN

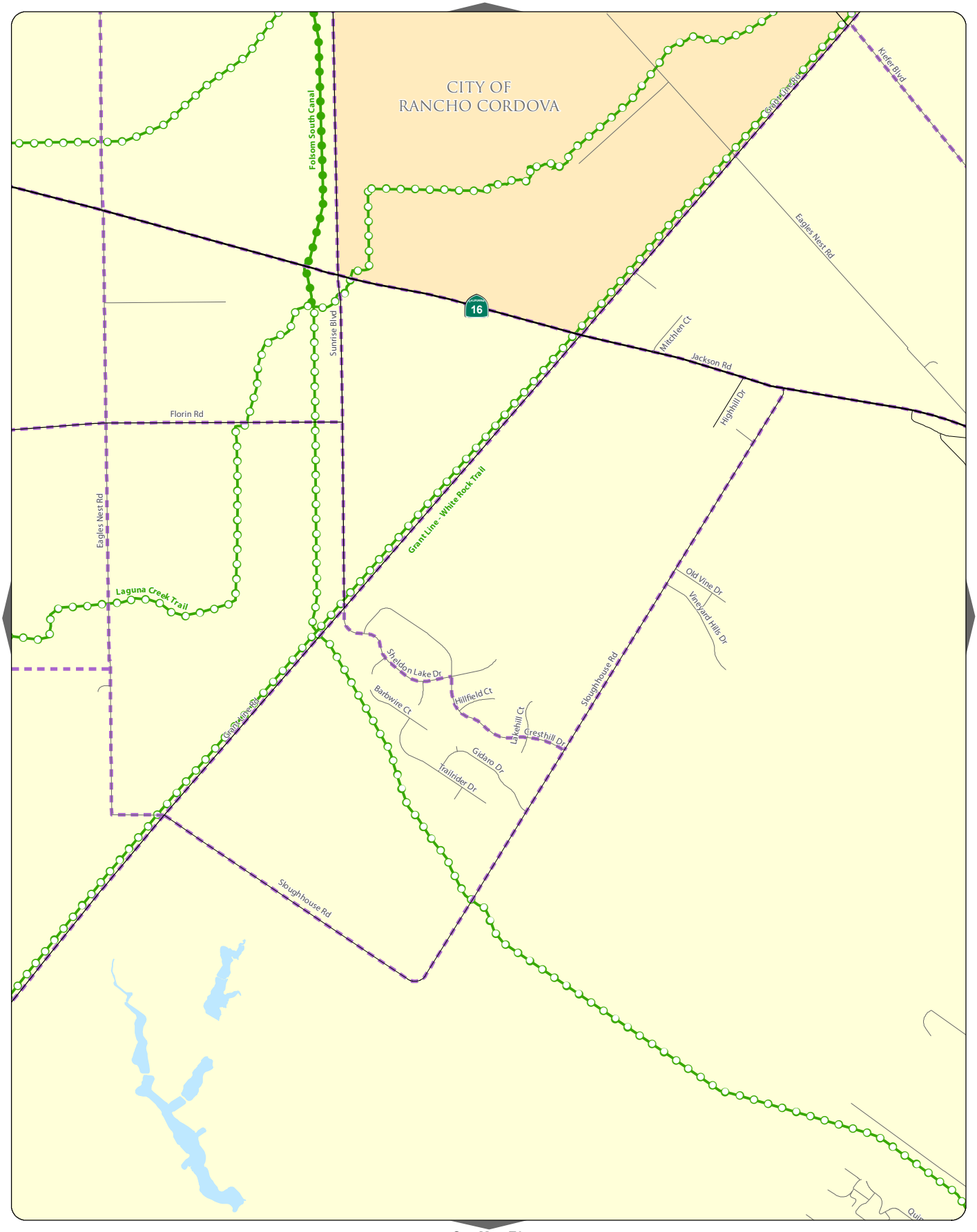
MAP D7
EXISTING AND PLANNED BICYCLE FACILITIES



SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP D8
EXISTING AND PLANNED BICYCLE FACILITIES

See Map C9



See Map D8

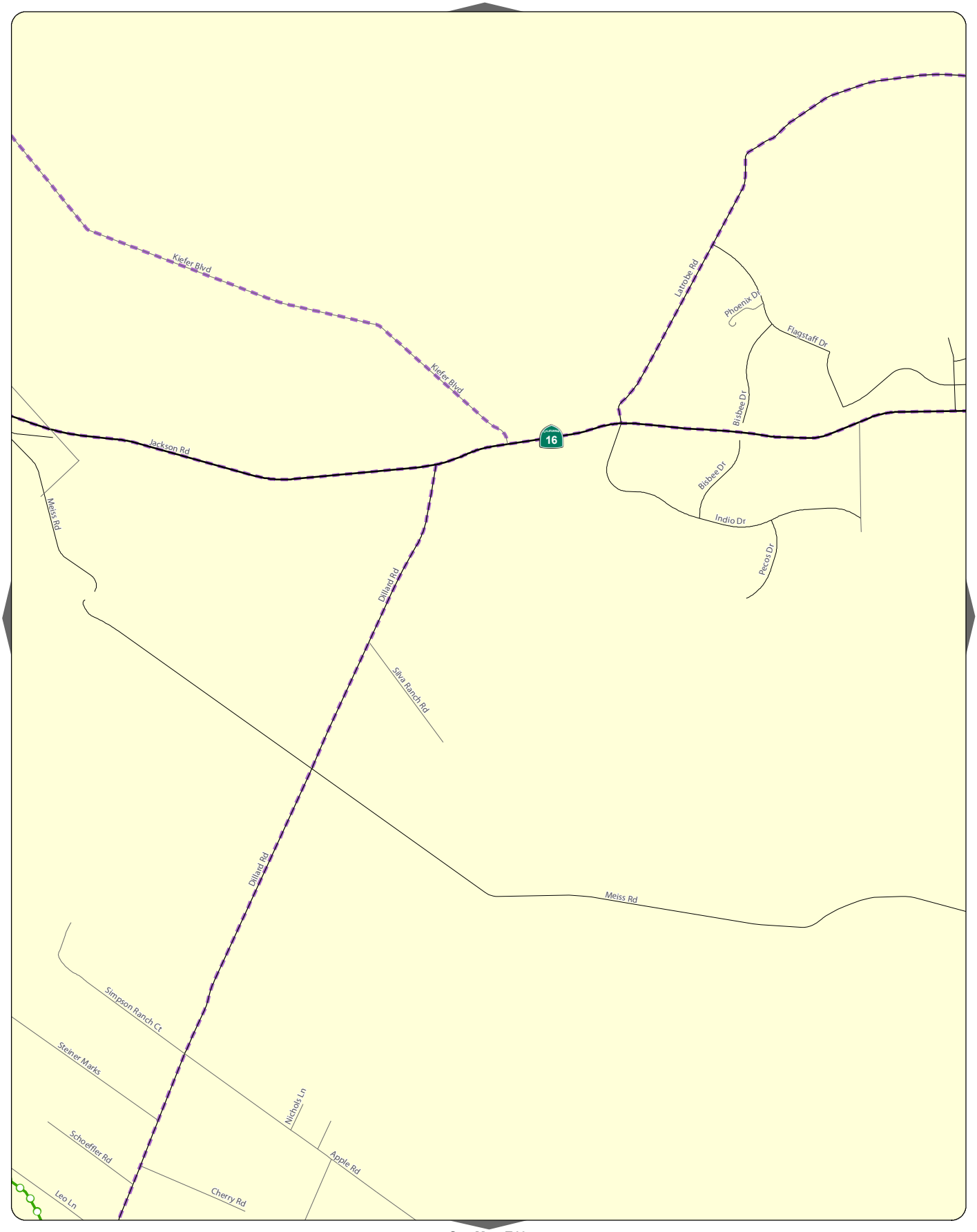
See Map D10

See Map E9

SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP D9
EXISTING AND PLANNED BICYCLE FACILITIES

See Map C10

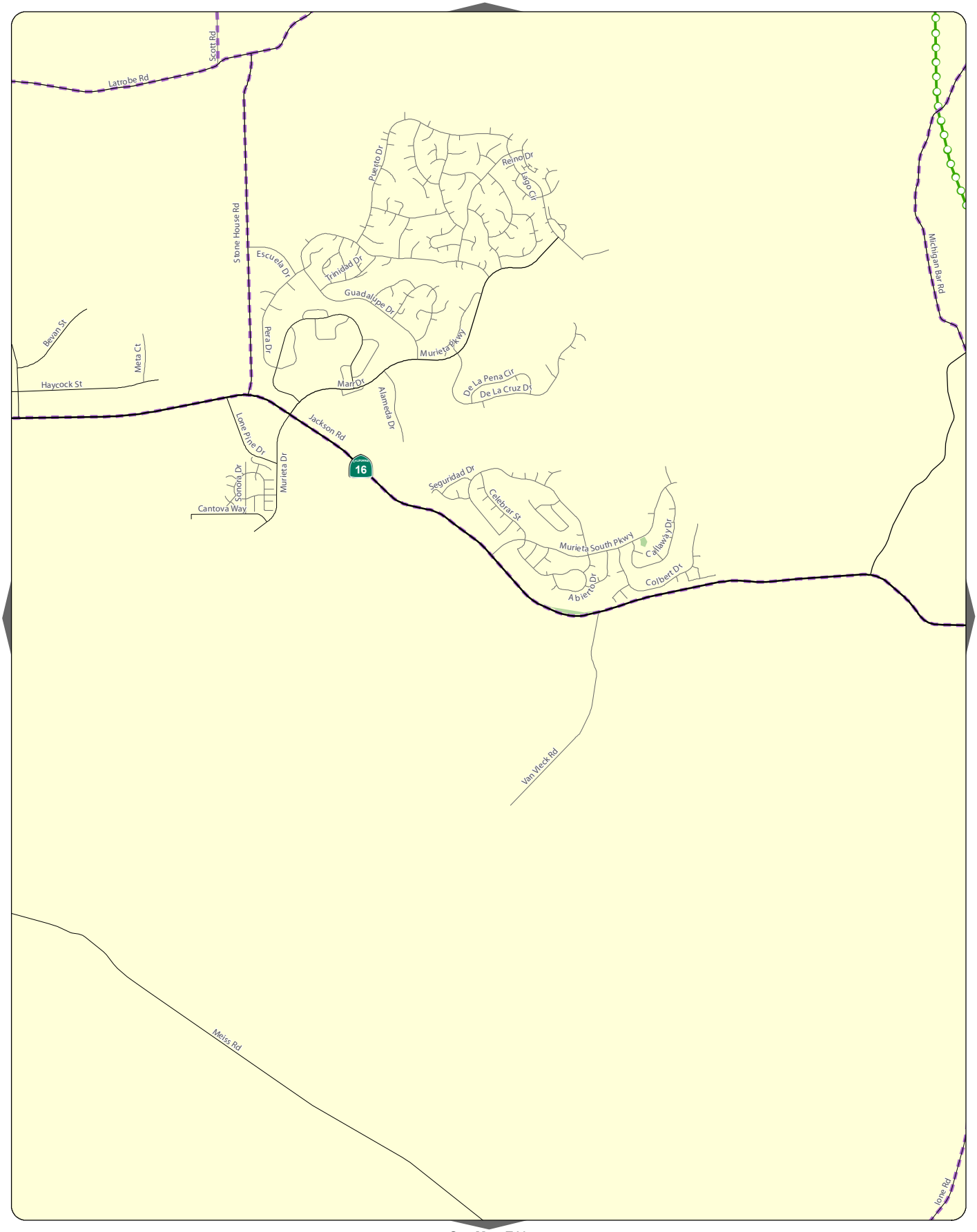


See Map D9

See Map D11

See Map E10

See Map C11

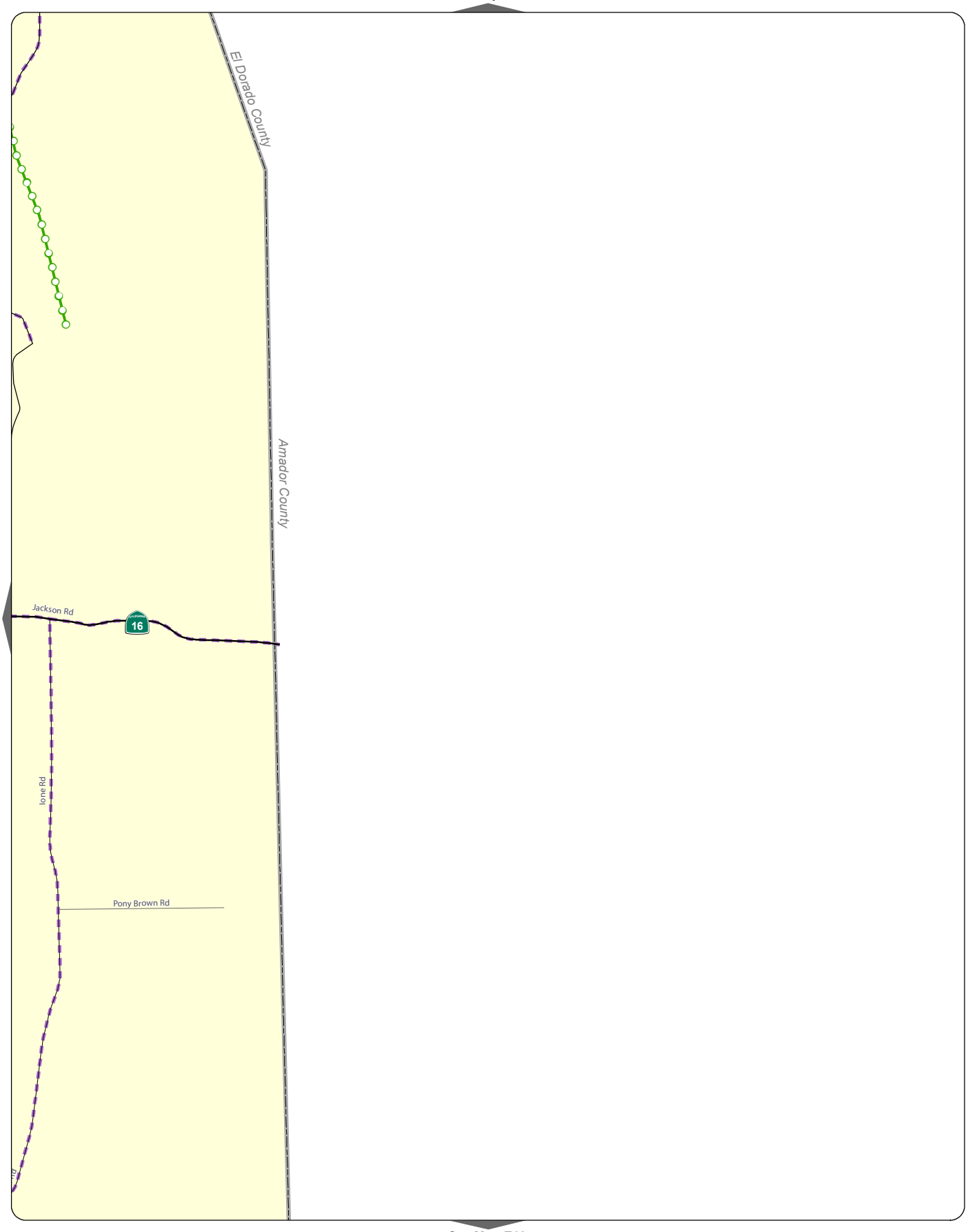


See Map D10

See Map D12

See Map E11

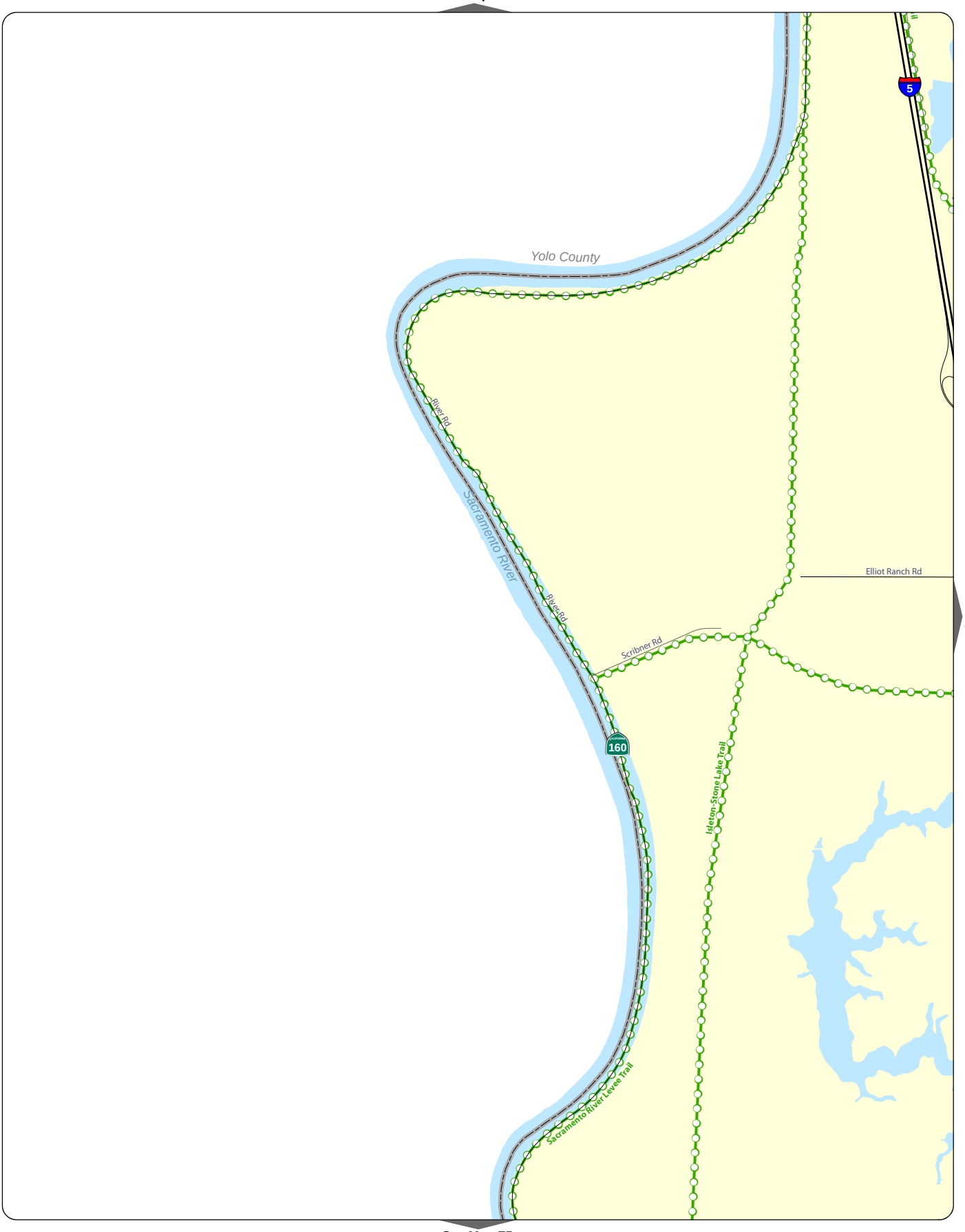
See Map C12



See Map D11

See Map E12

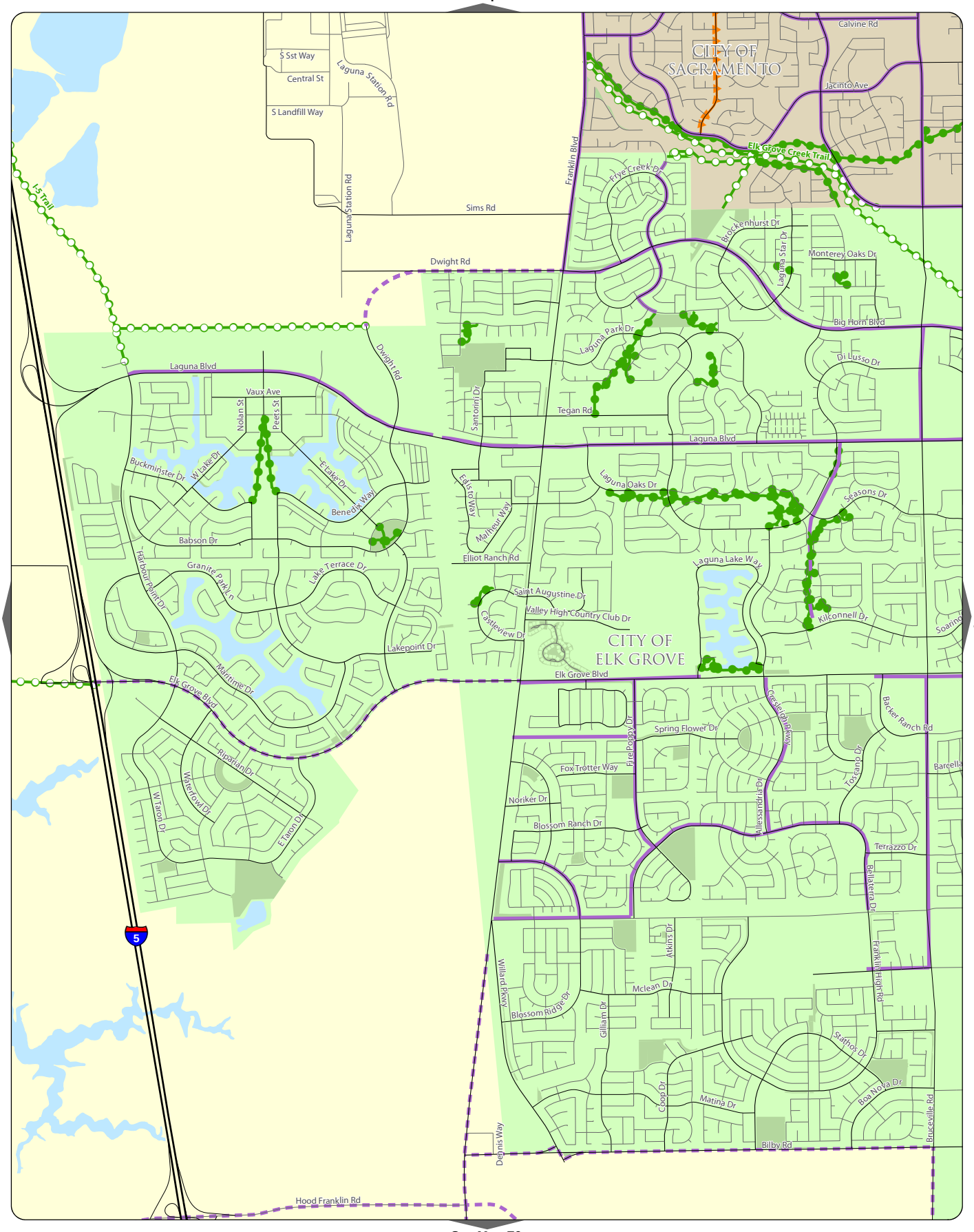
See Map D5



See Map E6

See Map F5

See Map D6



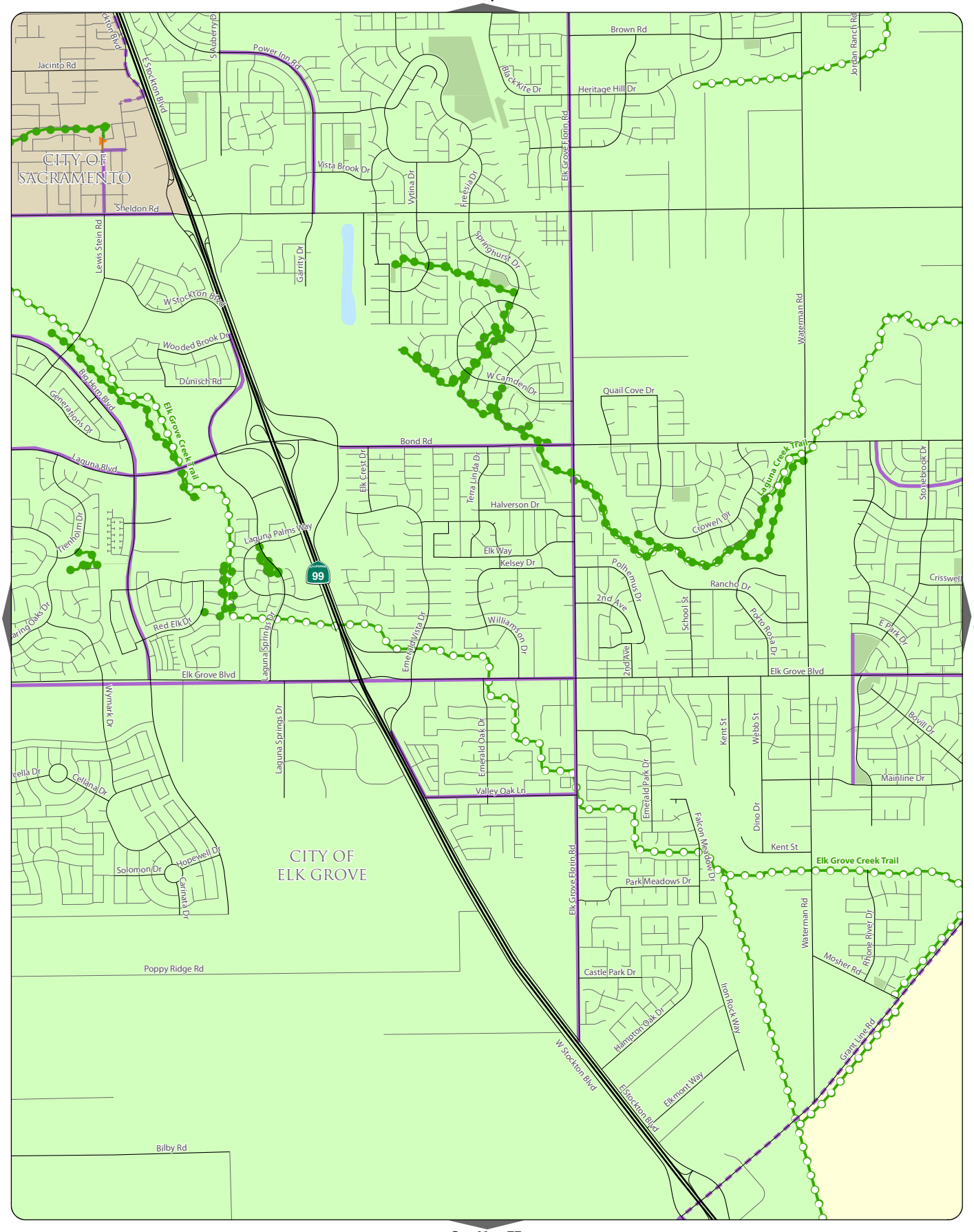
See Map E5

See Map E7

See Map F6

MAP E6
EXISTING AND PLANNED BICYCLE FACILITIES

See Map D7



See Map E6

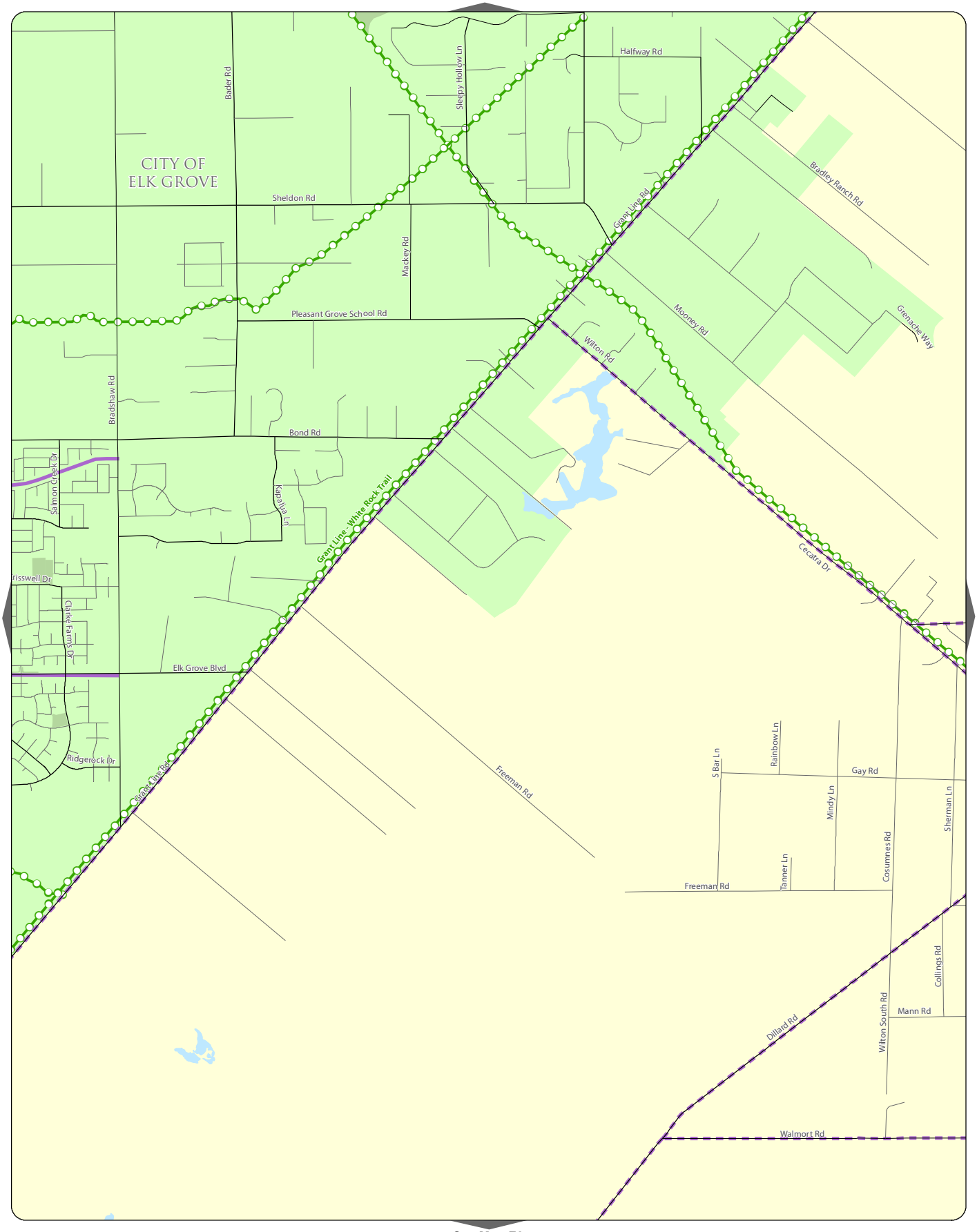
See Map E8

See Map F7

SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP E7
EXISTING AND PLANNED BICYCLE FACILITIES

See Map D8

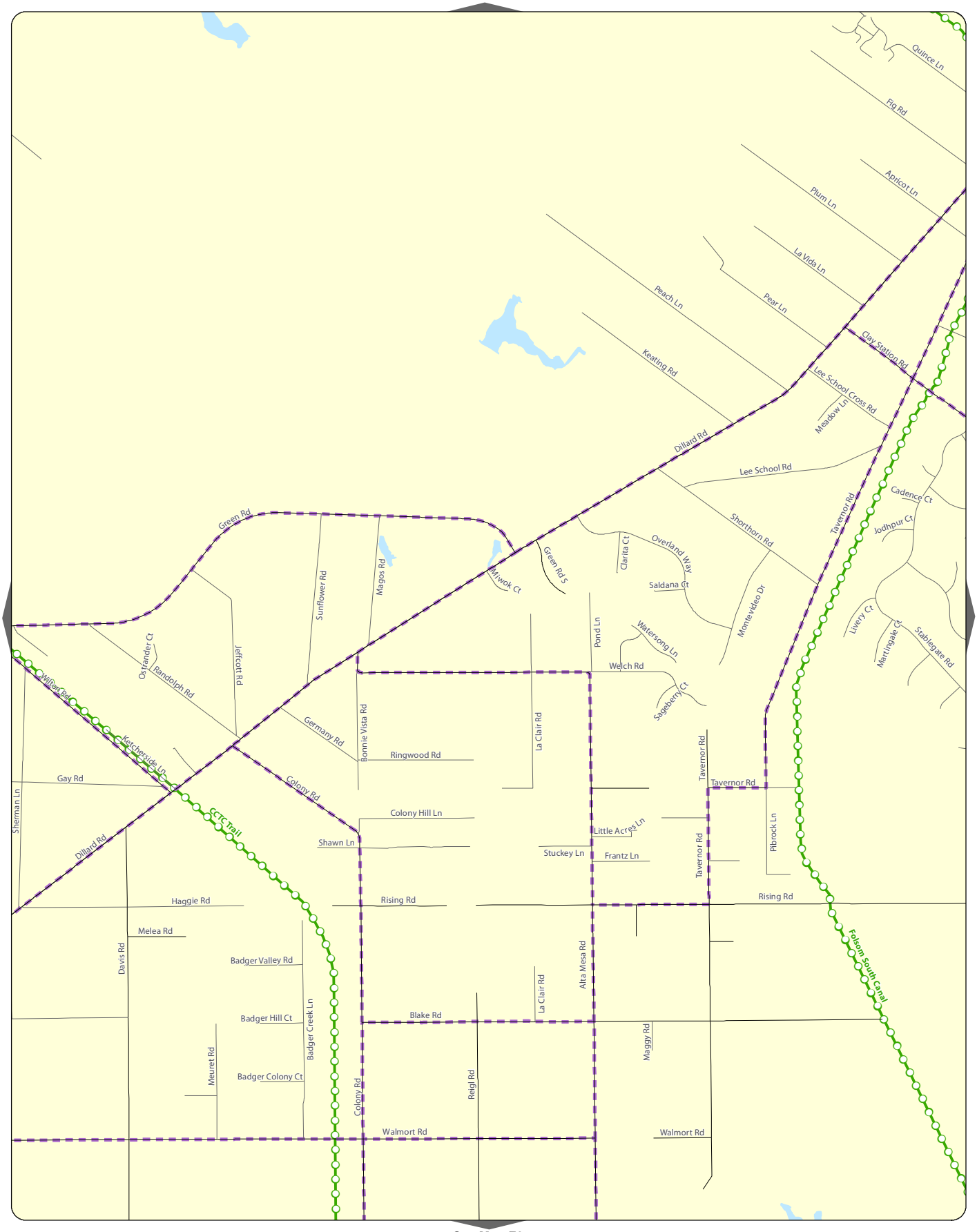


See Map E7

See Map E9

See Map F8

See Map D9



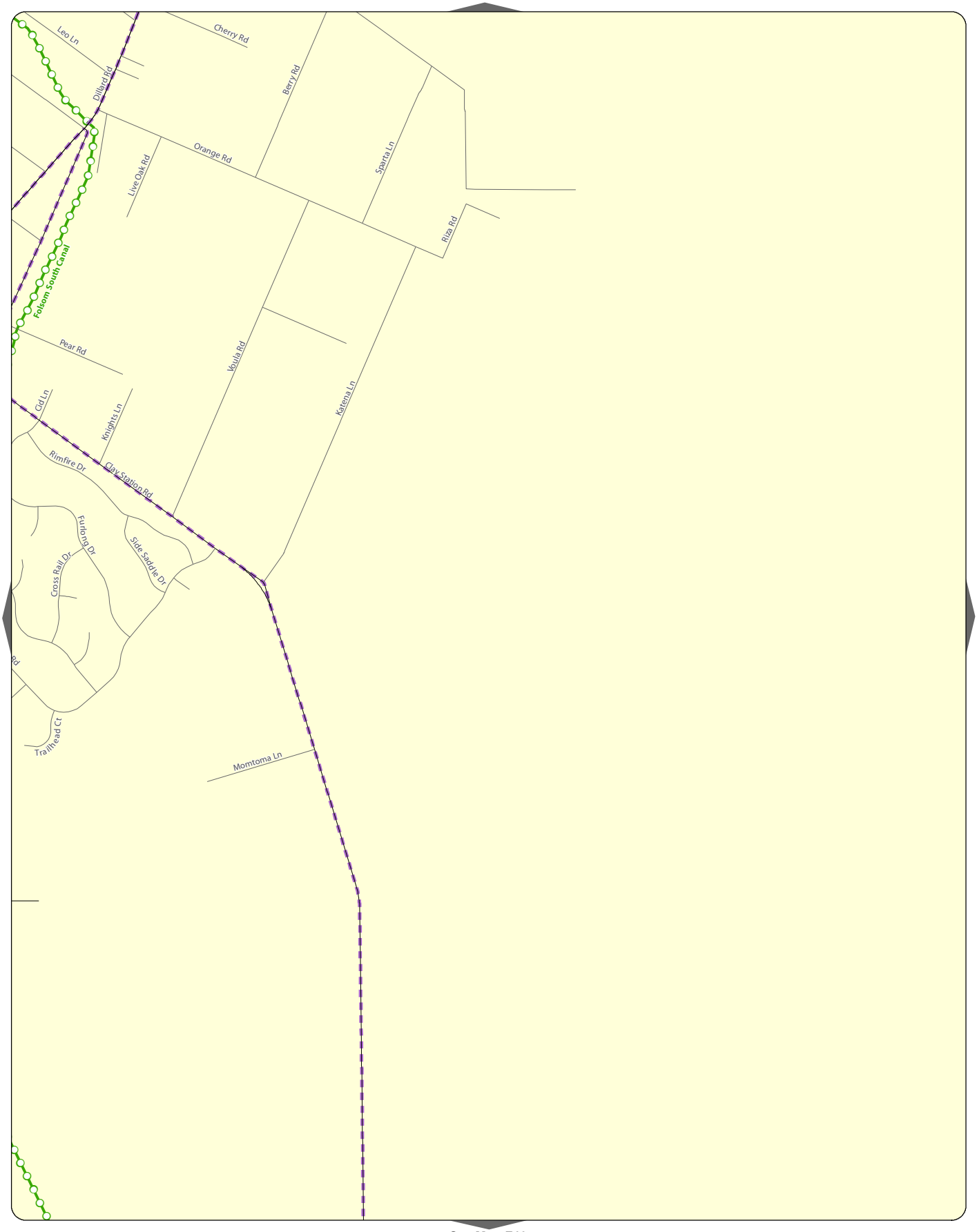
See Map E8

See Map E10

See Map F9

MAP E9
EXISTING AND PLANNED BICYCLE FACILITIES

See Map D10



See Map E9

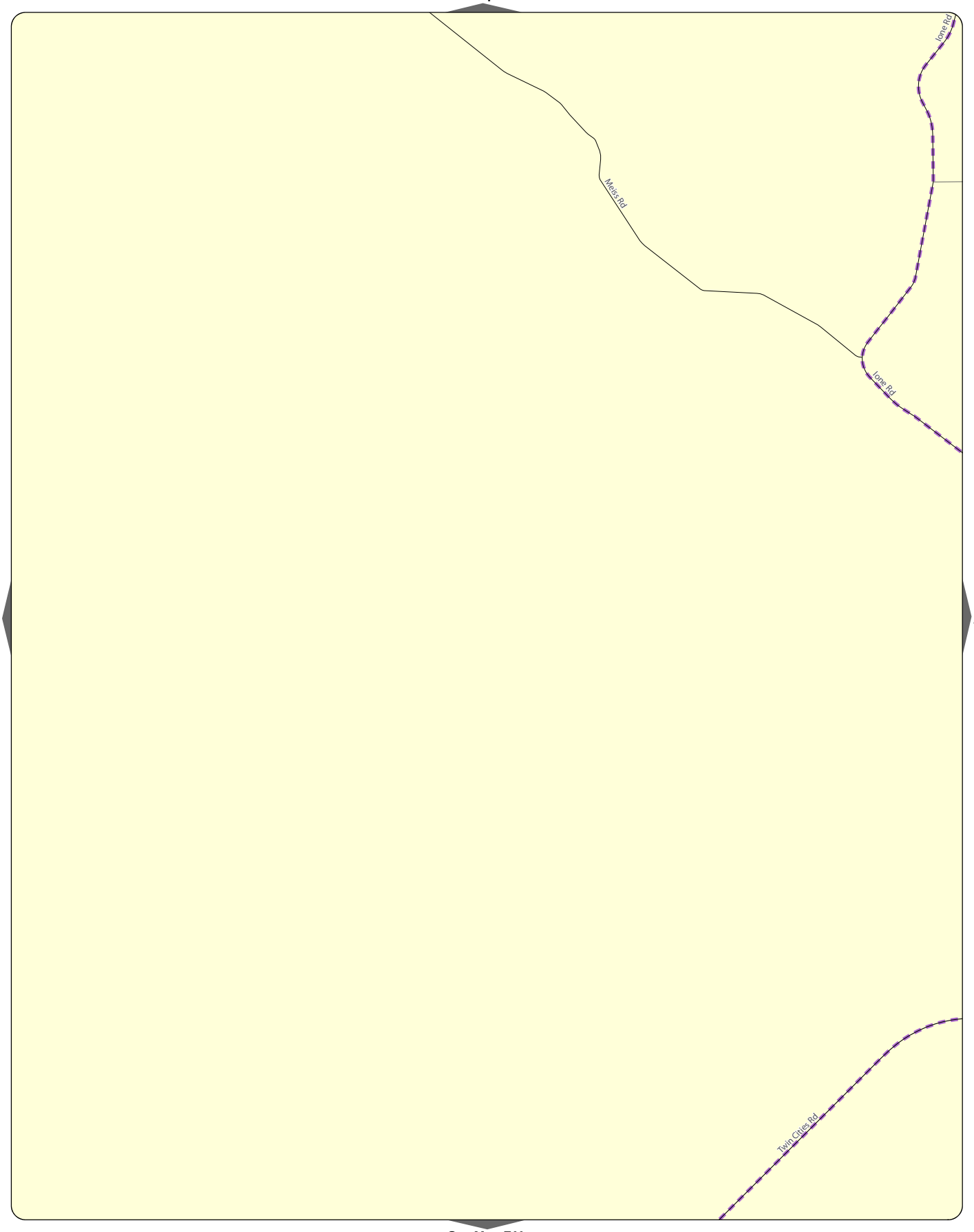
See Map E11

See Map F10

SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP E10
EXISTING AND PLANNED BICYCLE FACILITIES

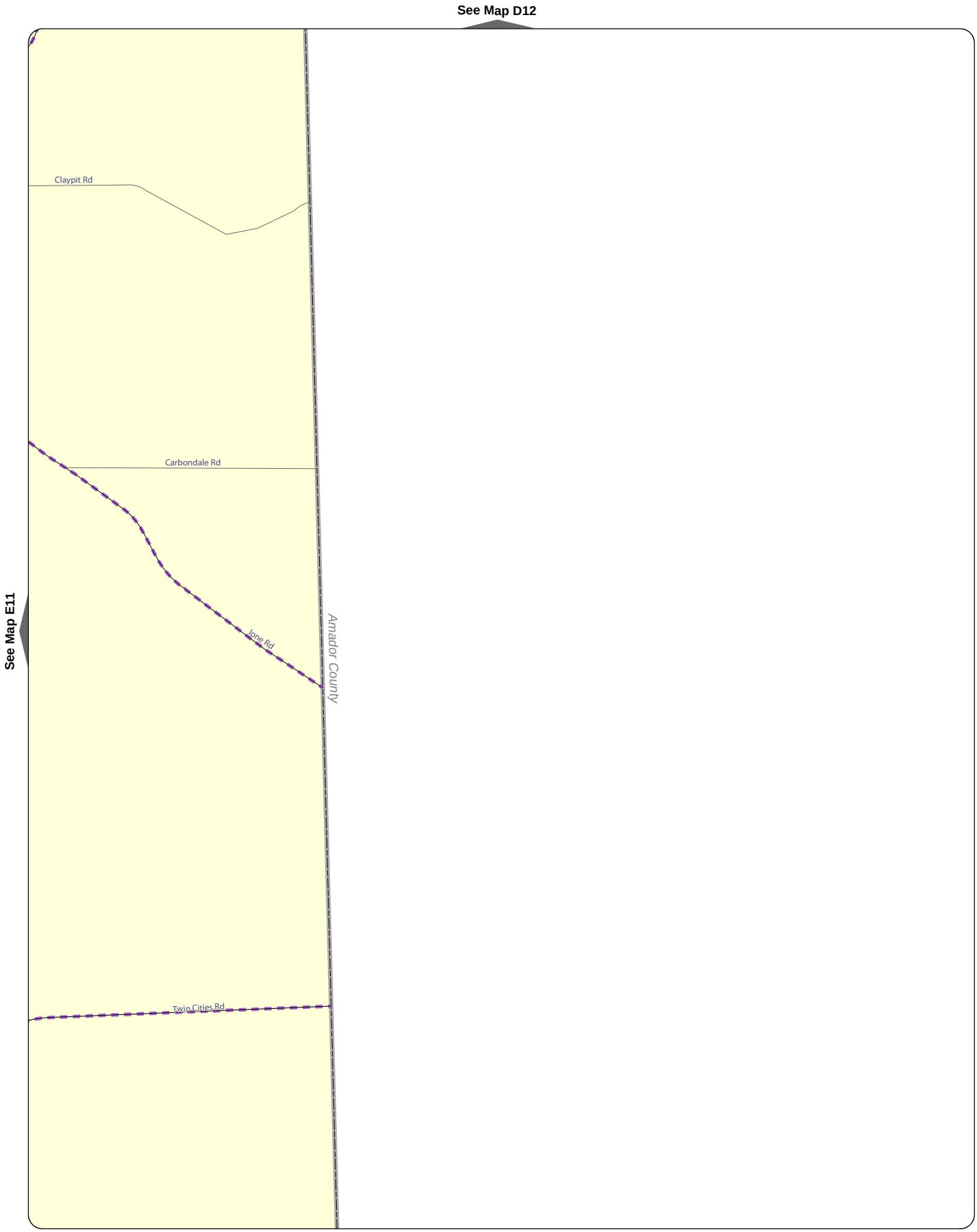
See Map D11



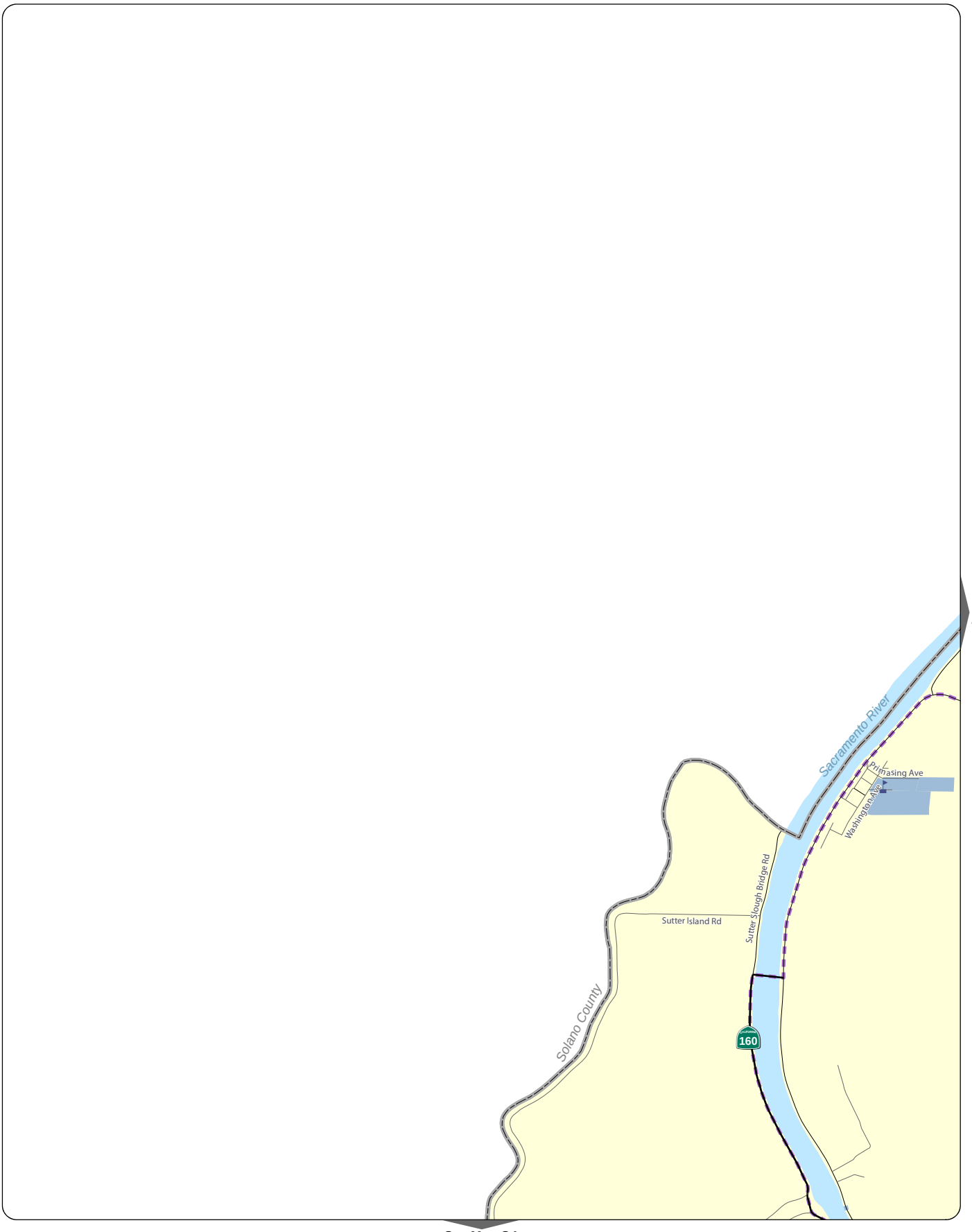
See Map E10

See Map E12

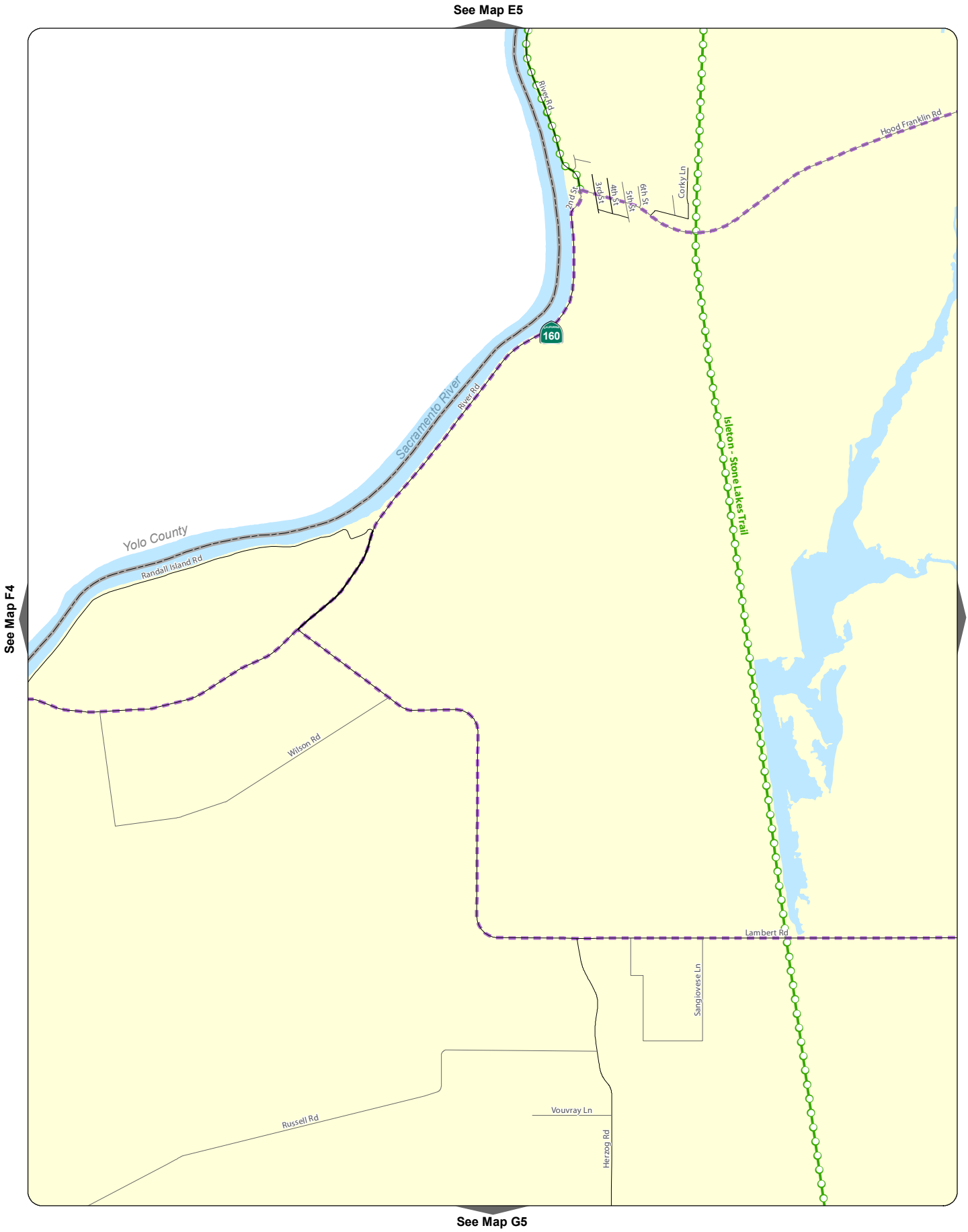
See Map F11



MAP E12
EXISTING AND PLANNED BICYCLE FACILITIES

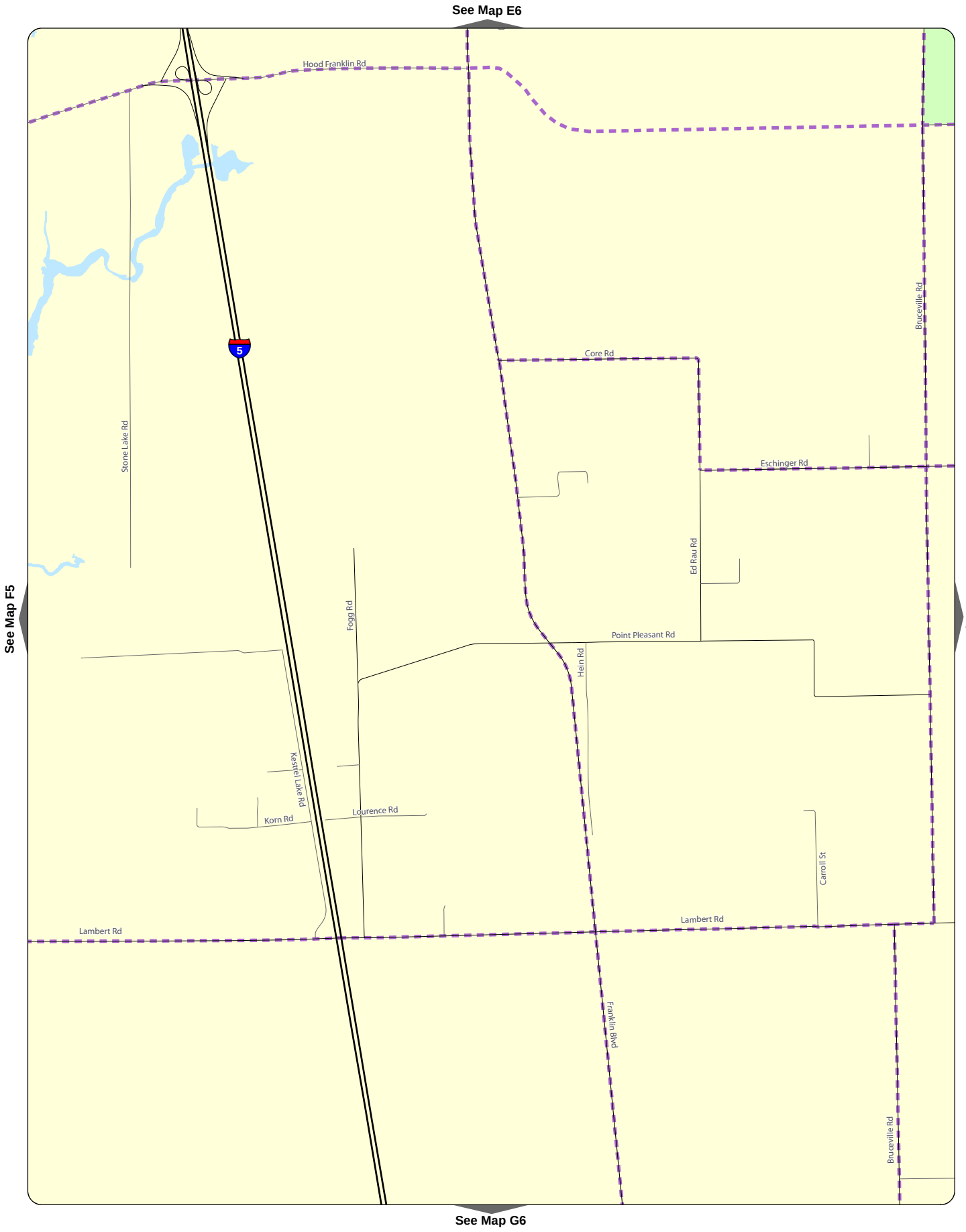


MAP F4
EXISTING AND PLANNED BICYCLE FACILITIES

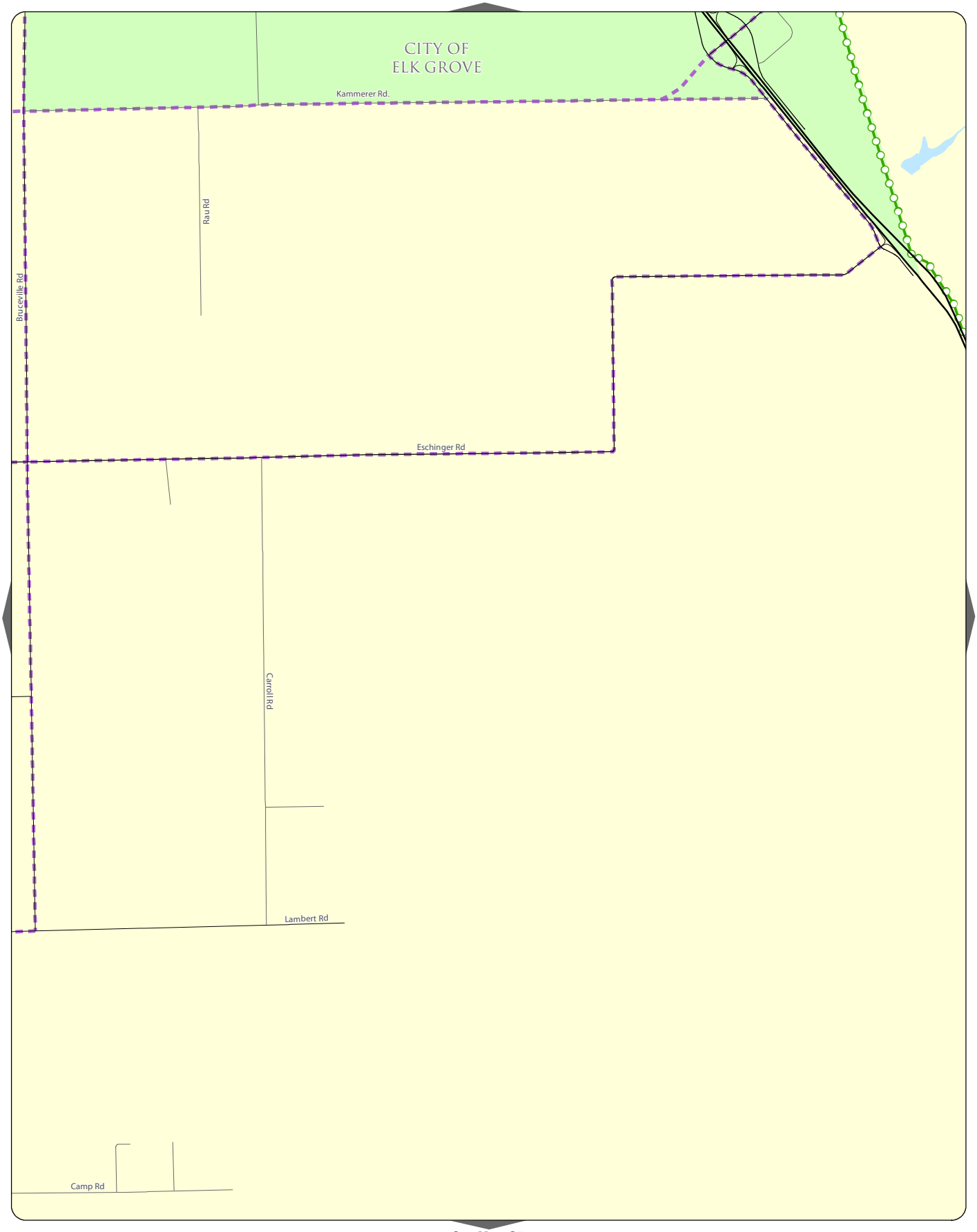


SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP F5
EXISTING AND PLANNED BICYCLE FACILITIES


See Map E6
Hood Franklin Rd
5
Stone Lake Rd
Core Rd
Bruceville Rd
Eschinger Rd
Ed Rau Rd
Fogg Rd
Point Pleasant Rd
Hein Rd
See Map F5
See Map F7
Kestrel Lake Rd
Korn Rd
Lourence Rd
Carroll St
Lambert Rd
Lambert Rd
Franklin Blvd
Bruceville Rd
See Map G6

See Map E7

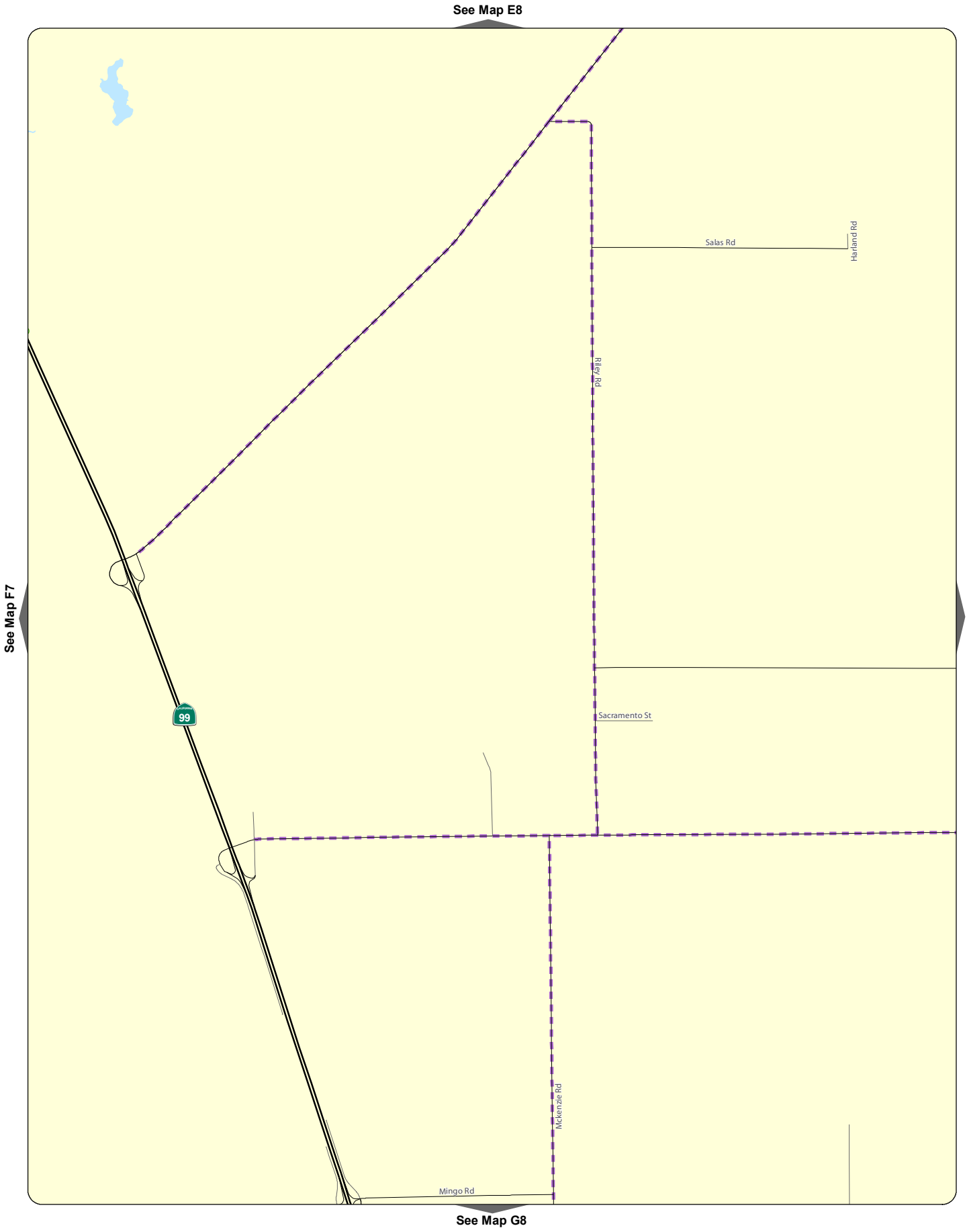


See Map F6

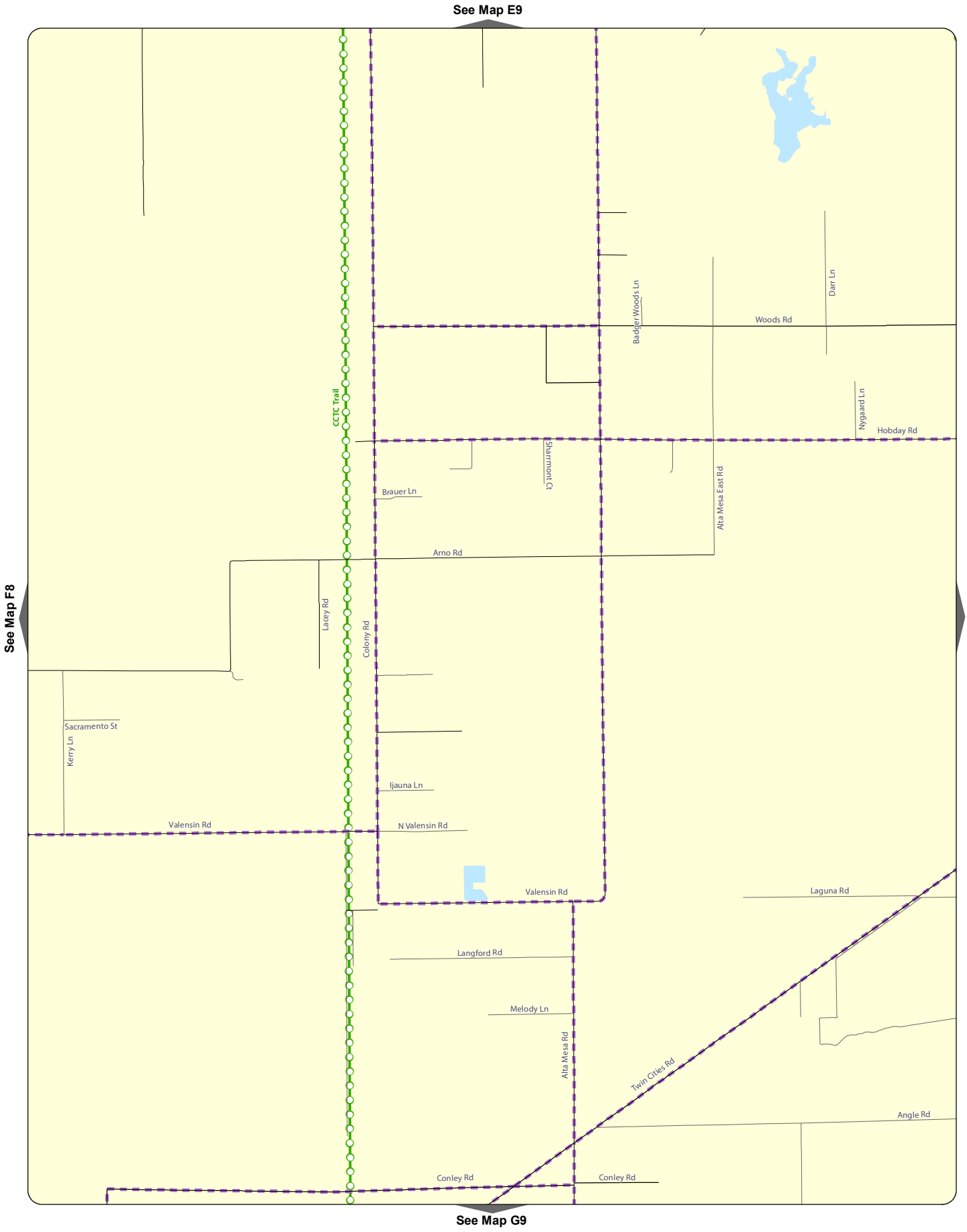
See Map F8

See Map G7

MAP F7
EXISTING AND PLANNED BICYCLE FACILITIES

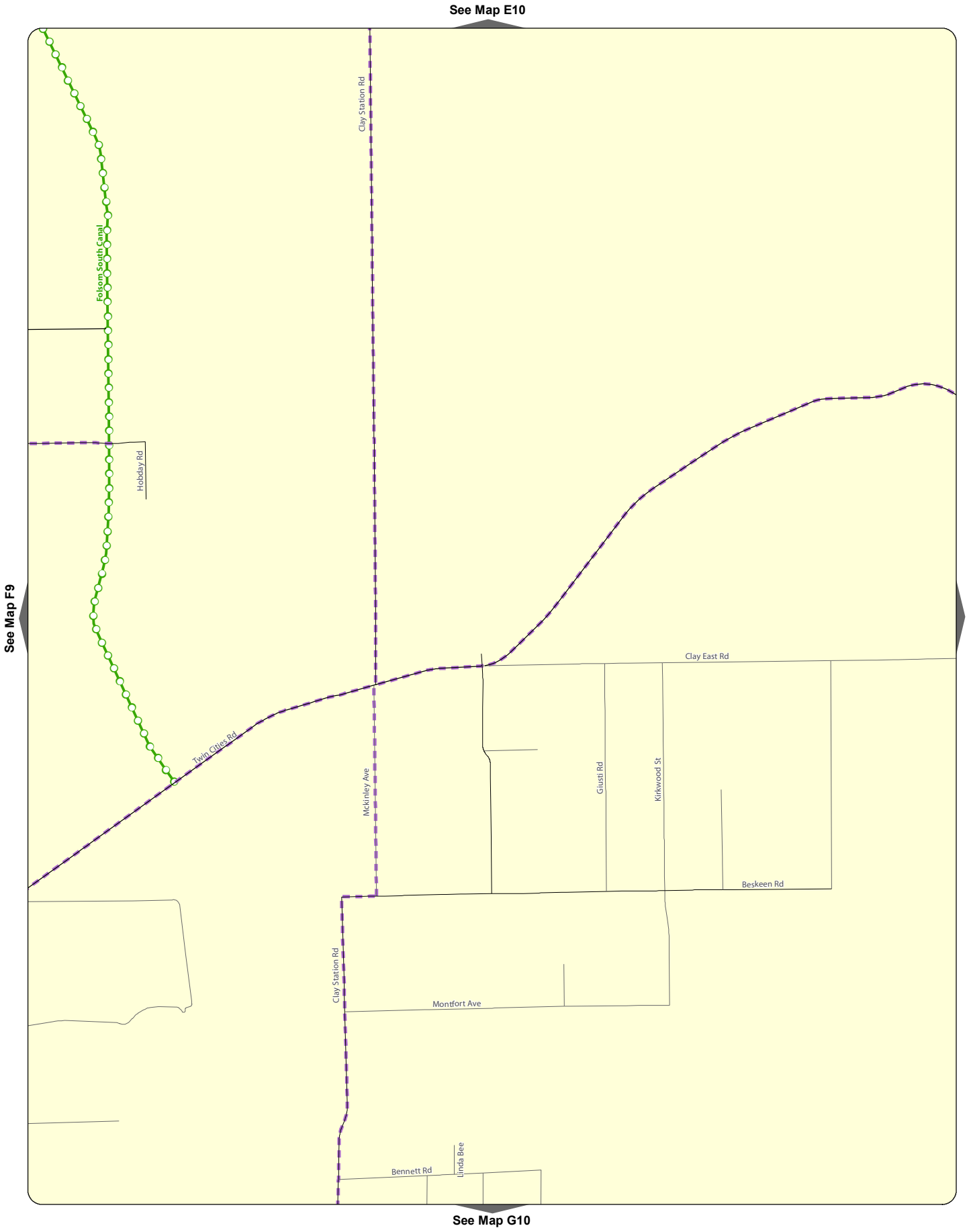


MAP F8
EXISTING AND PLANNED BICYCLE FACILITIES



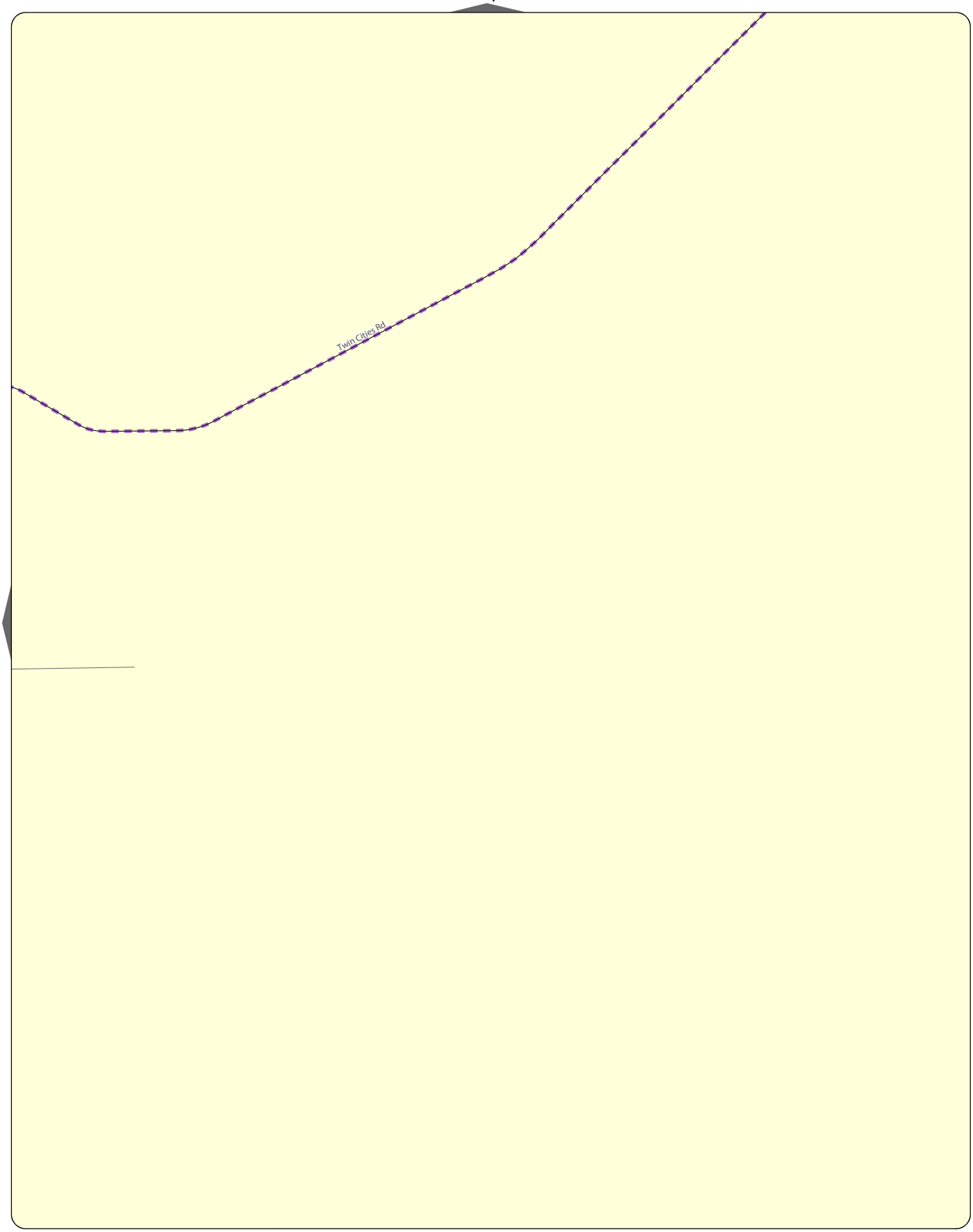
SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP F9
EXISTING AND PLANNED BICYCLE FACILITIES



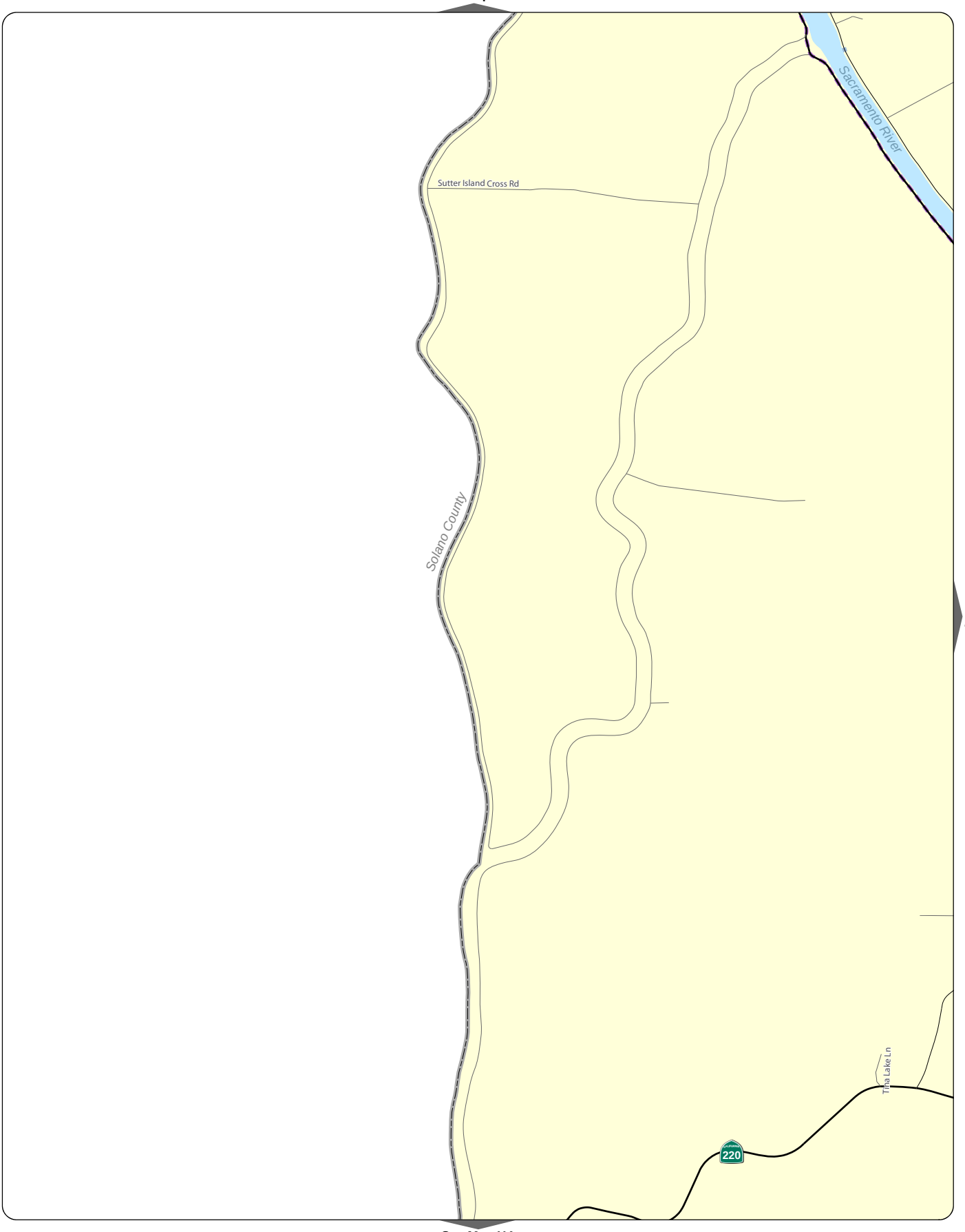
MAP F10
EXISTING AND PLANNED BICYCLE FACILITIES

See Map E11



See Map F10

See Map F4



See Map G5

See Map H4

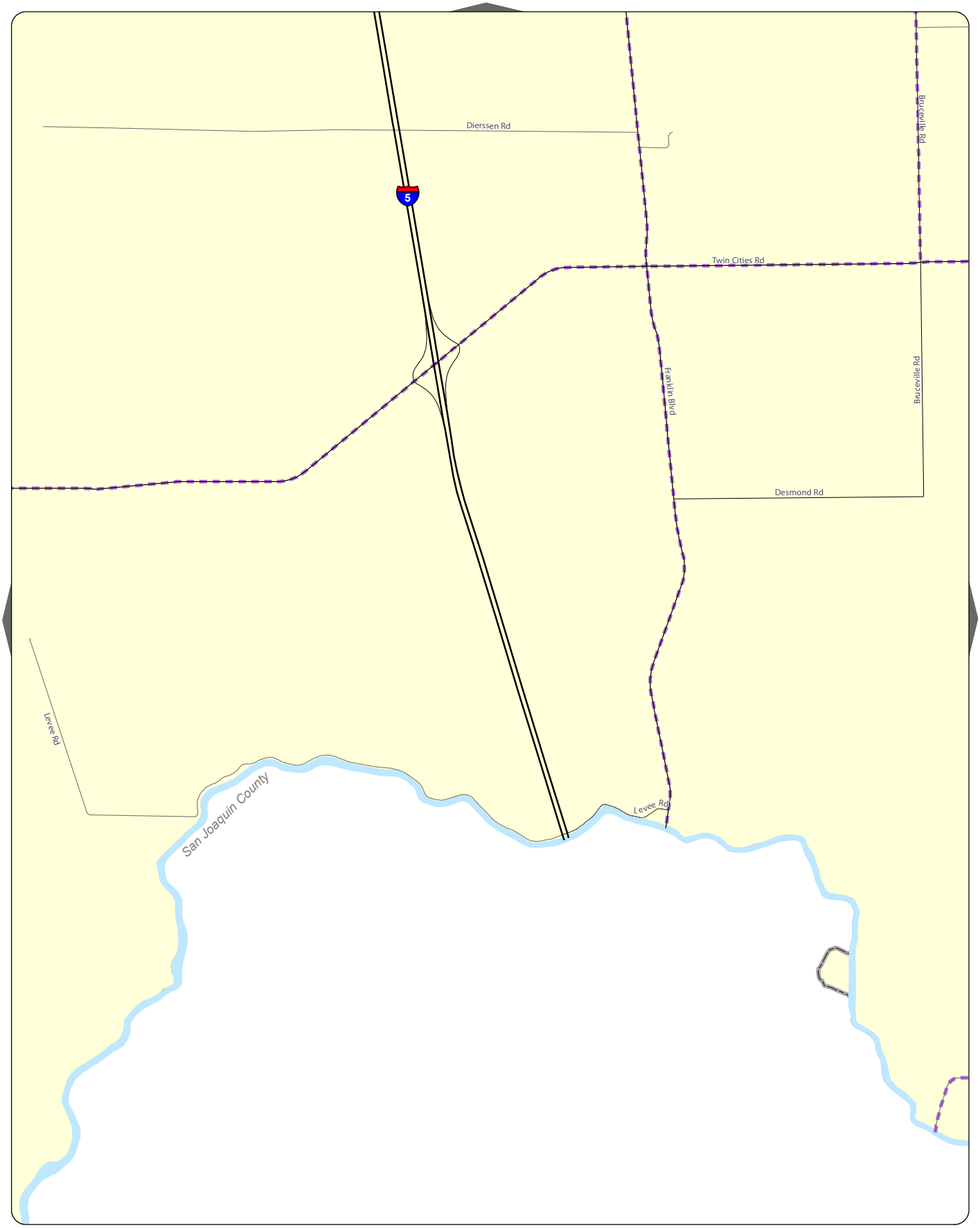
See Map F5

See Map G4

See Map G6

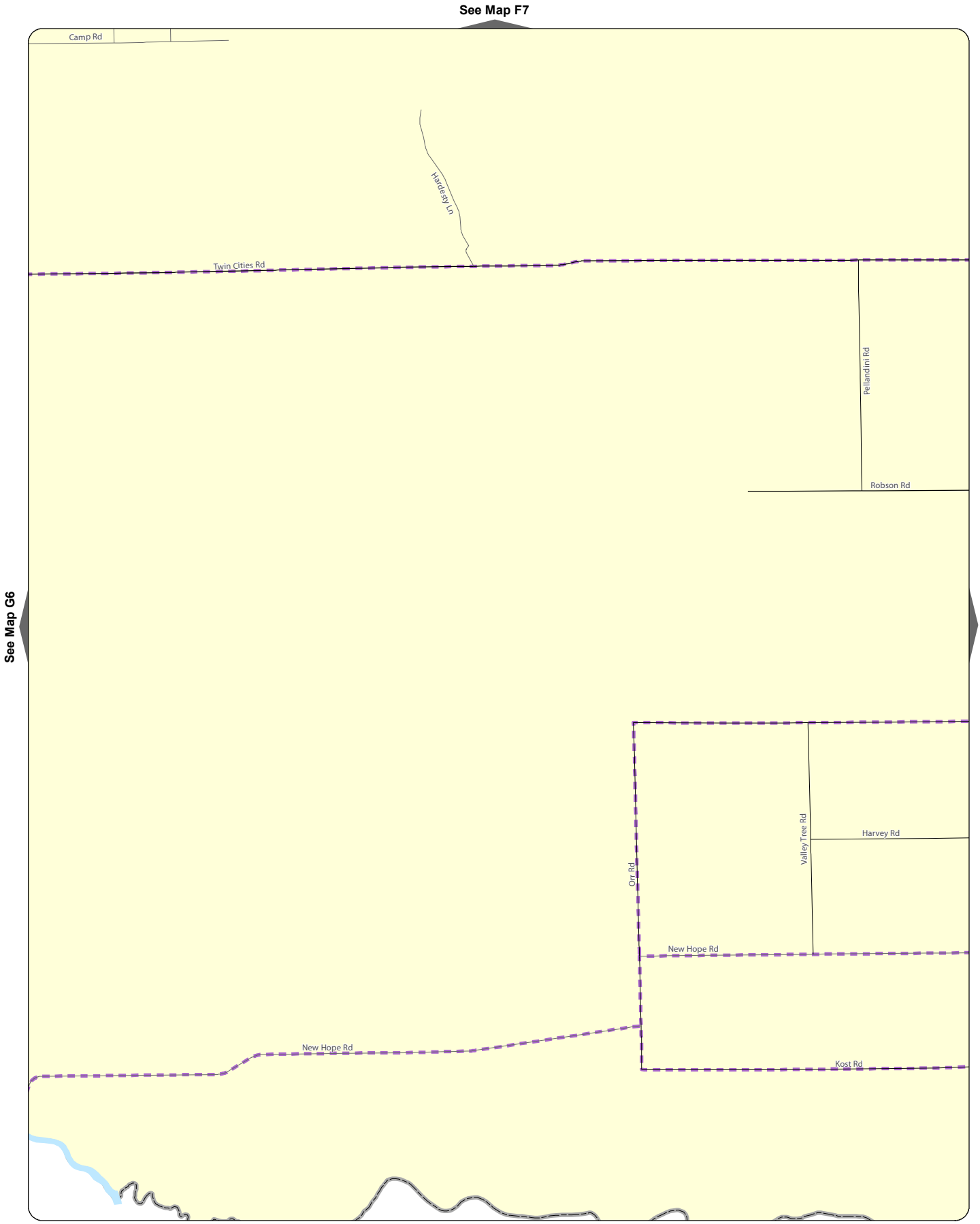
See Map H5

See Map F6



See Map G5

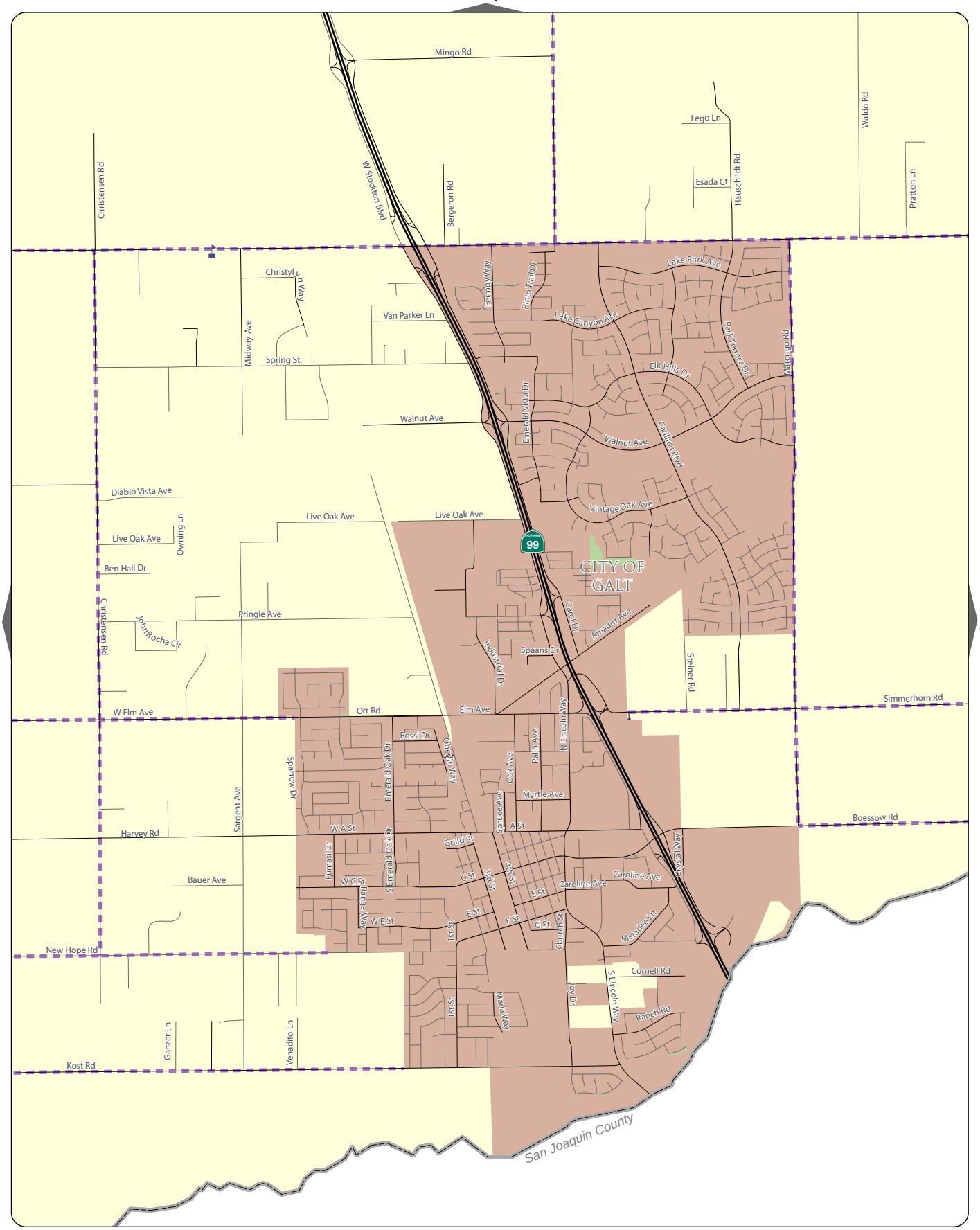
See Map G7



SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP G7
EXISTING AND PLANNED BICYCLE FACILITIES

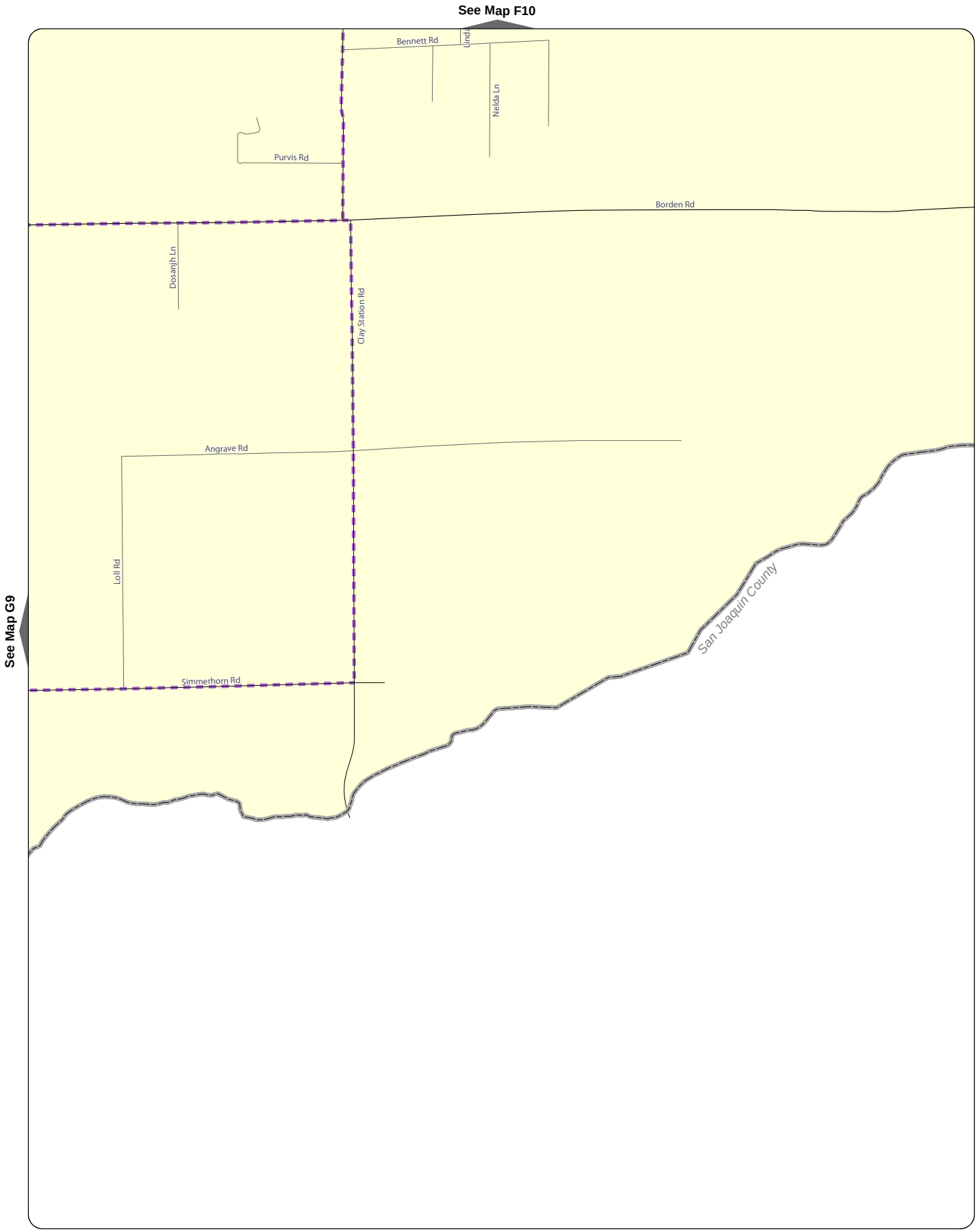
See Map F8

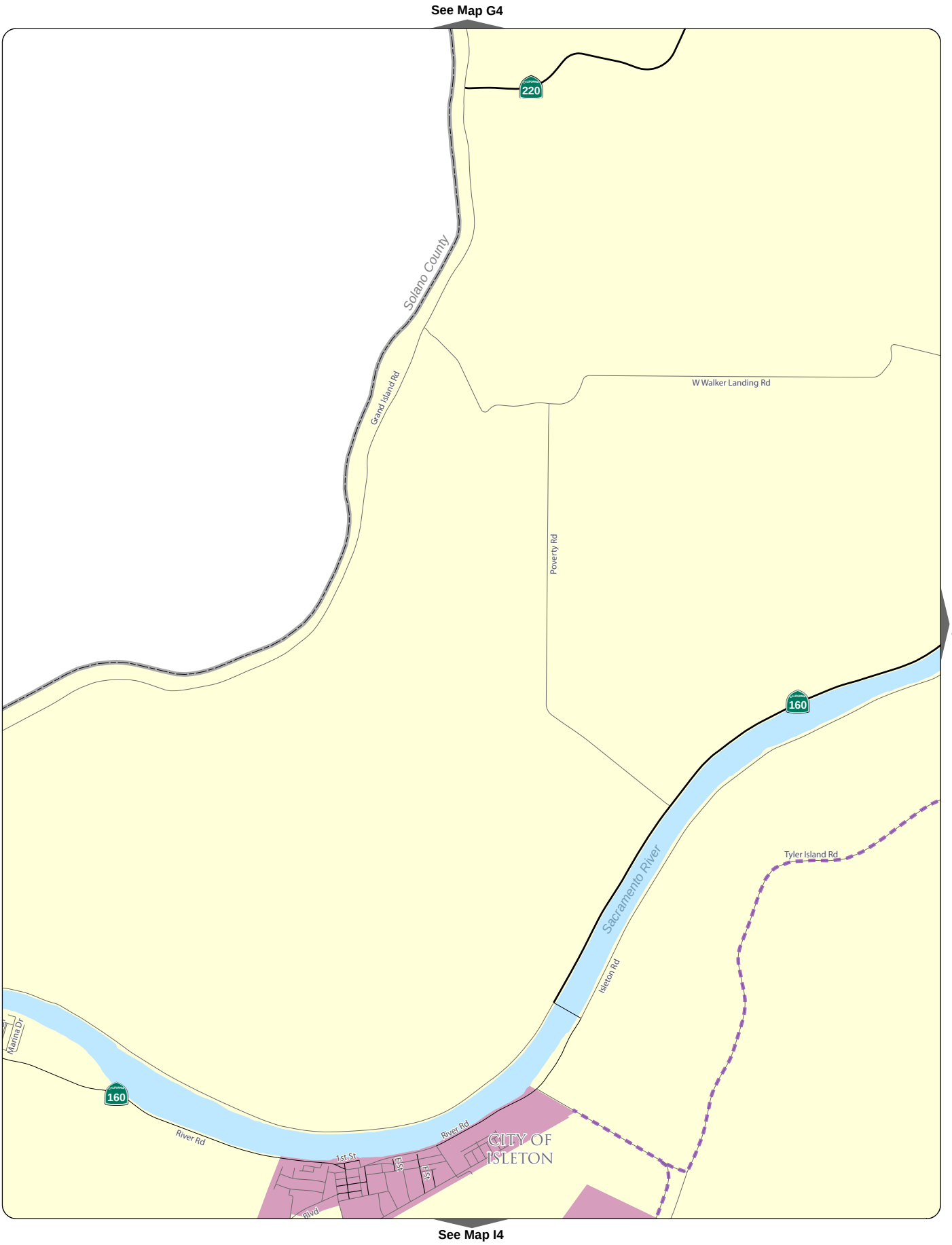


See Map G7

See Map G9


See Map F9
Conley Rd
Conley Rd
Cherokee Ln
Walkerville Rd
Arabian Ln
Schulz Rd
West Ln
Herald Rd
Ivie Rd
Alabama Rd
Borden Rd
Borden Rd
Shaylynn Ln
Sarayah Ln
Madi Ln
Ivie Acres Ln
Ivie Rd
Ness Rd
Herald Rd
Quiggle Rd
Cherokee Ln
CCTC Trail
Renke Rd
Harness Ln
See Map G8
See Map G10
Simmerhorn Rd
Boessow Rd
San Joaquin County
Alta Mesa Rd

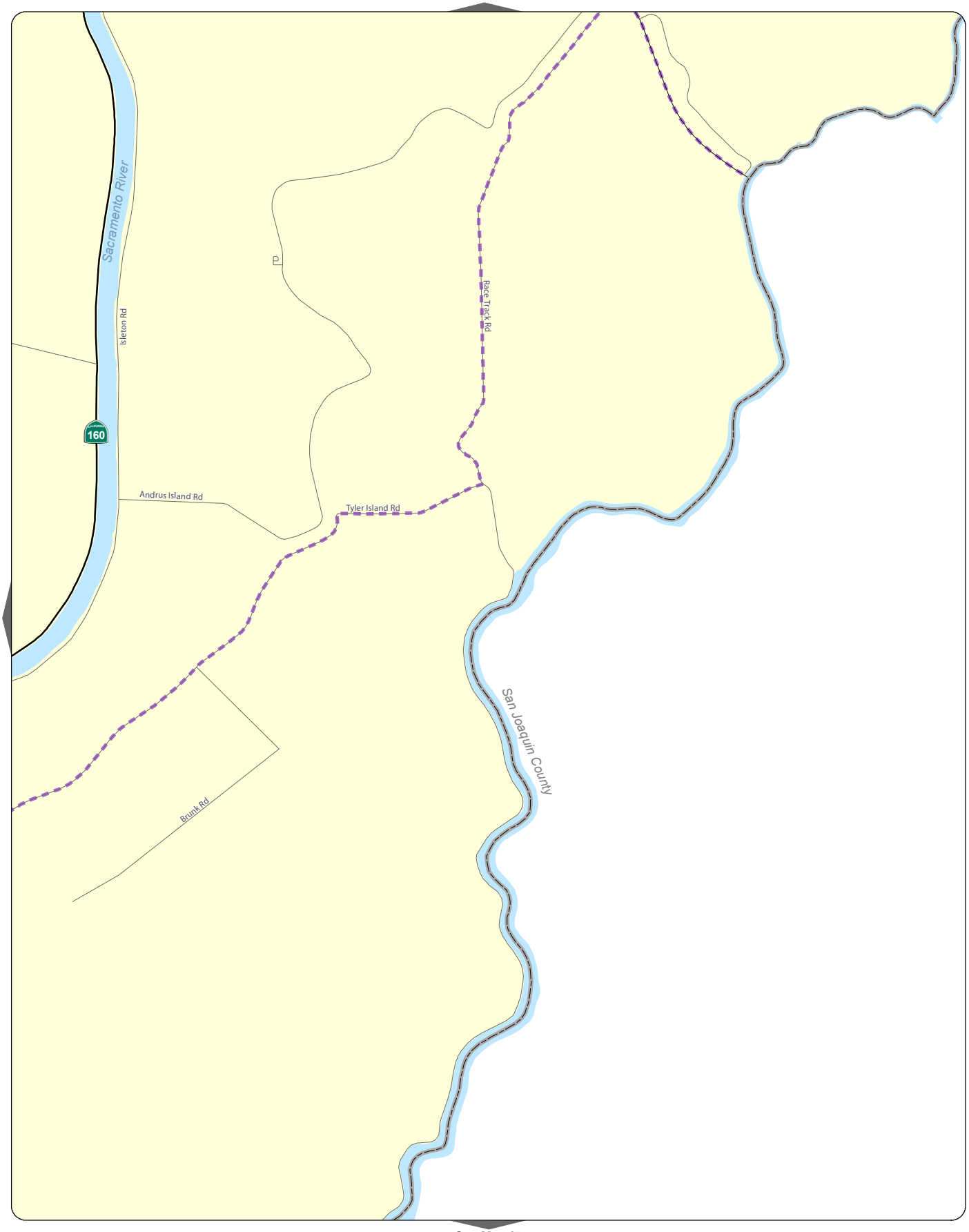

See Map F10
Bennett Rd
Linda
Nelda Ln
Purvis Rd
Borden Rd
Dosanjh Ln
Clay Station Rd
Angrave Rd
Loll Rd
San Joaquin County
Simmerhorn Rd
See Map G9



SACRAMENTO COUNTY BICYCLE MASTER PLAN

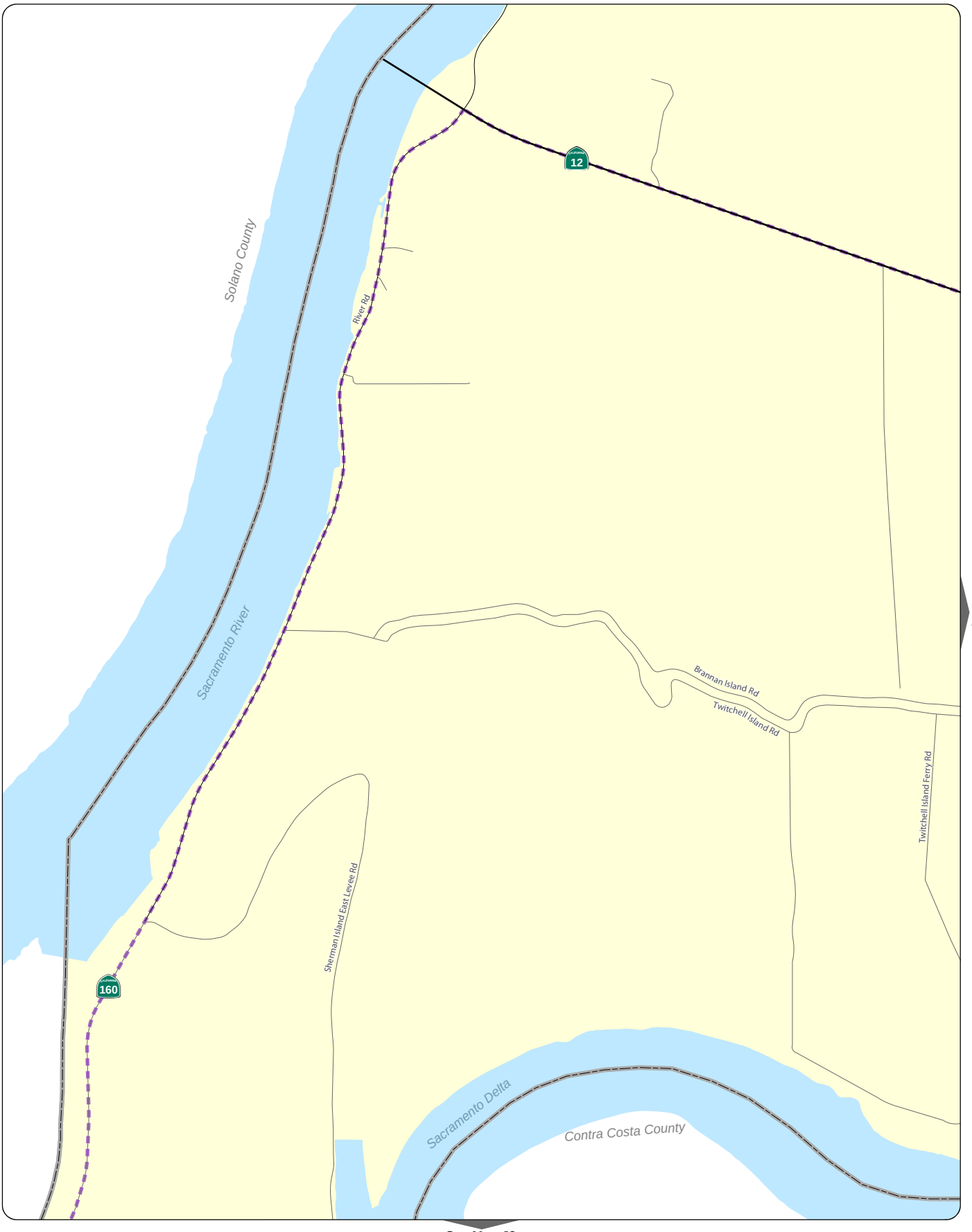
MAP H4
EXISTING AND PLANNED BICYCLE FACILITIES

See Map G5



See Map H4

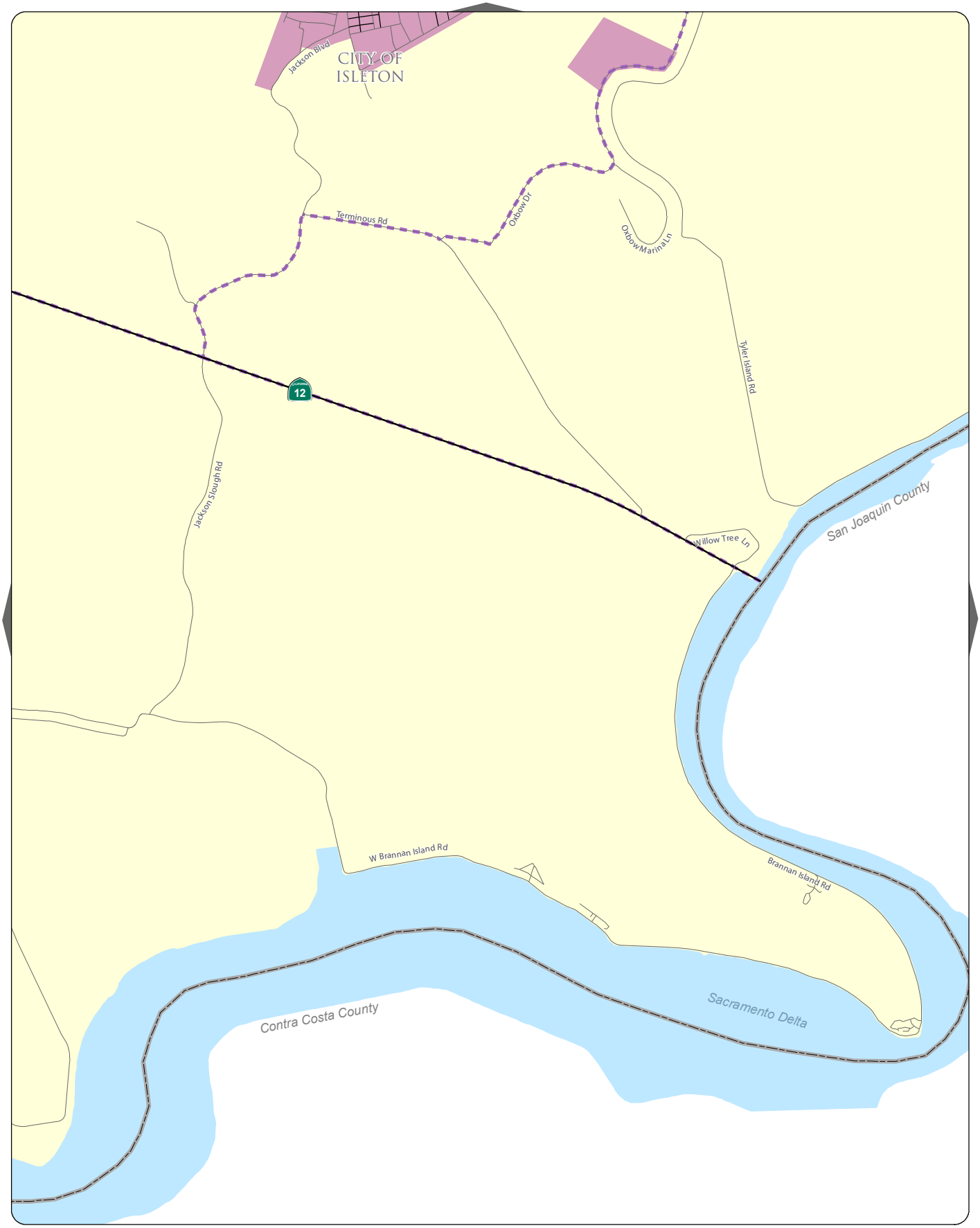
See Map I5



SACRAMENTO COUNTY BICYCLE MASTER PLAN

MAP I3
EXISTING AND PLANNED BICYCLE FACILITIES

See Map H4



See Map I3

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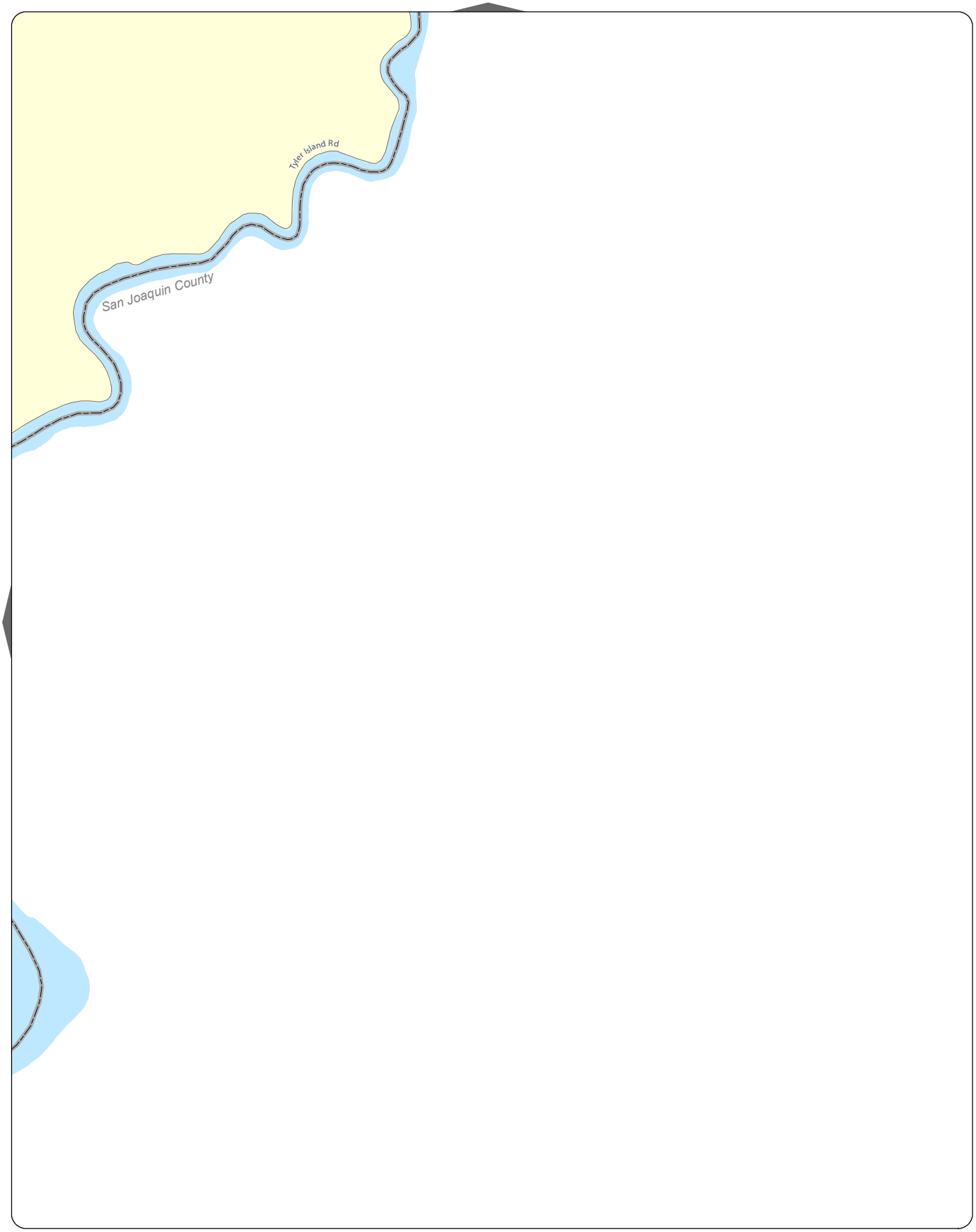

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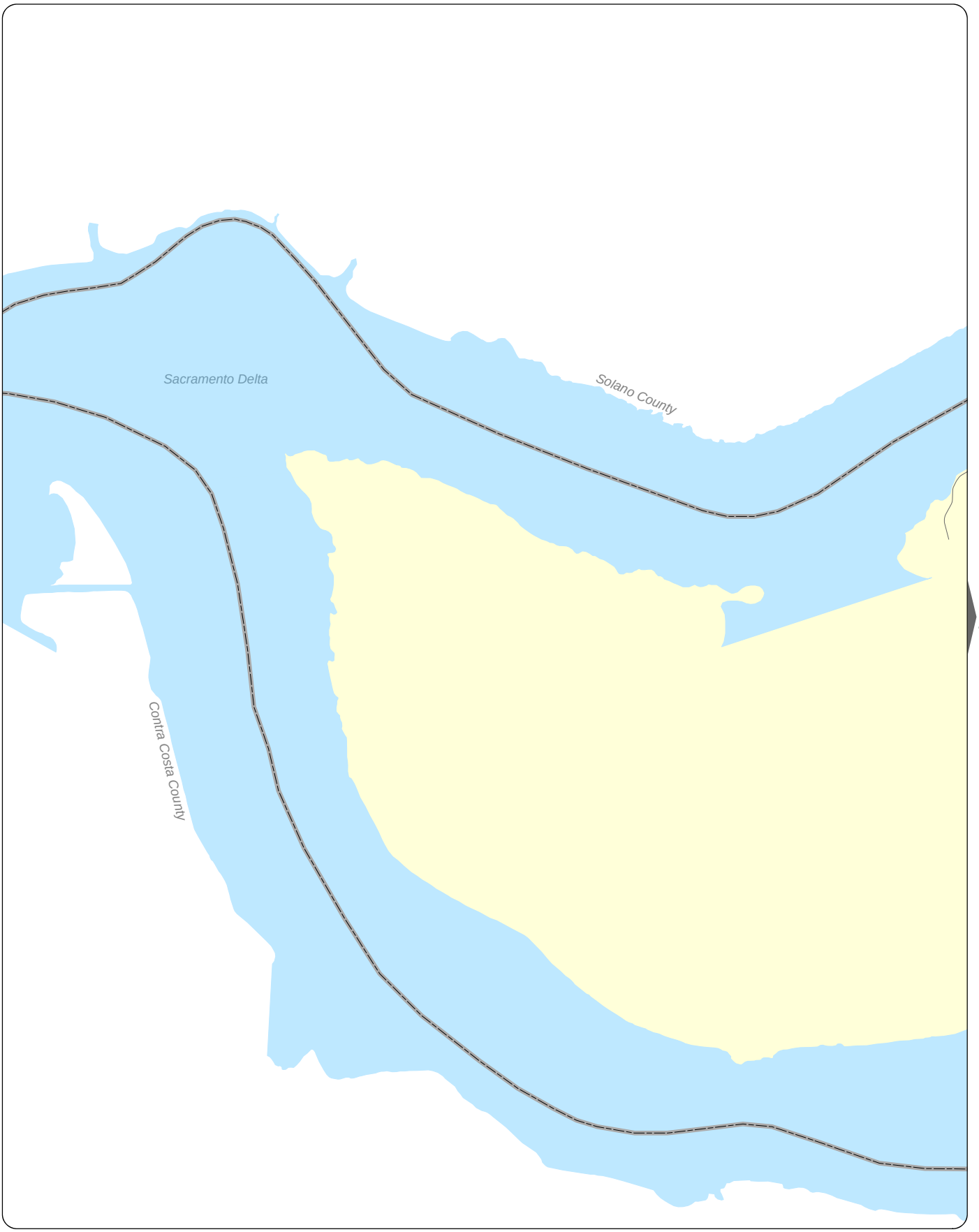
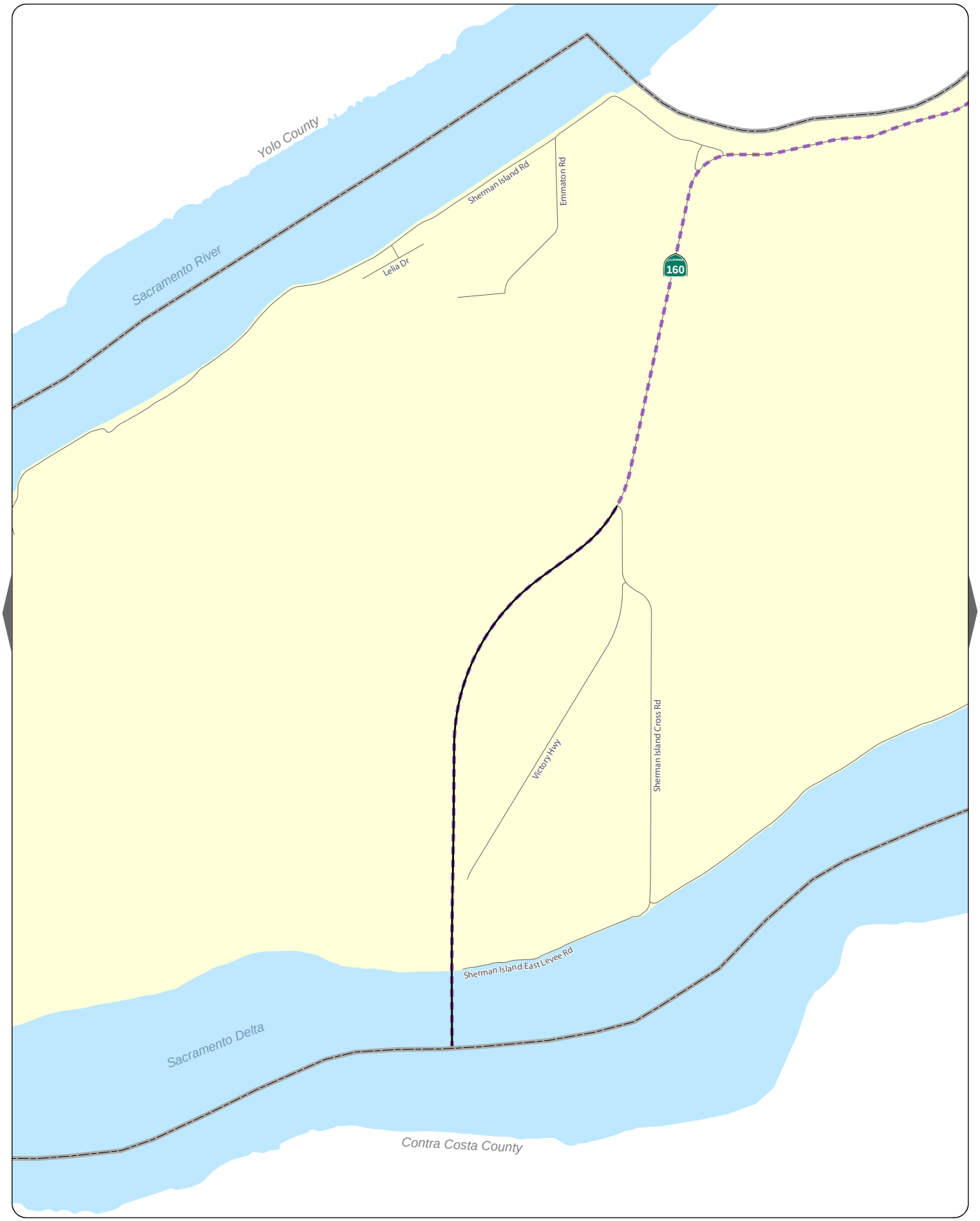
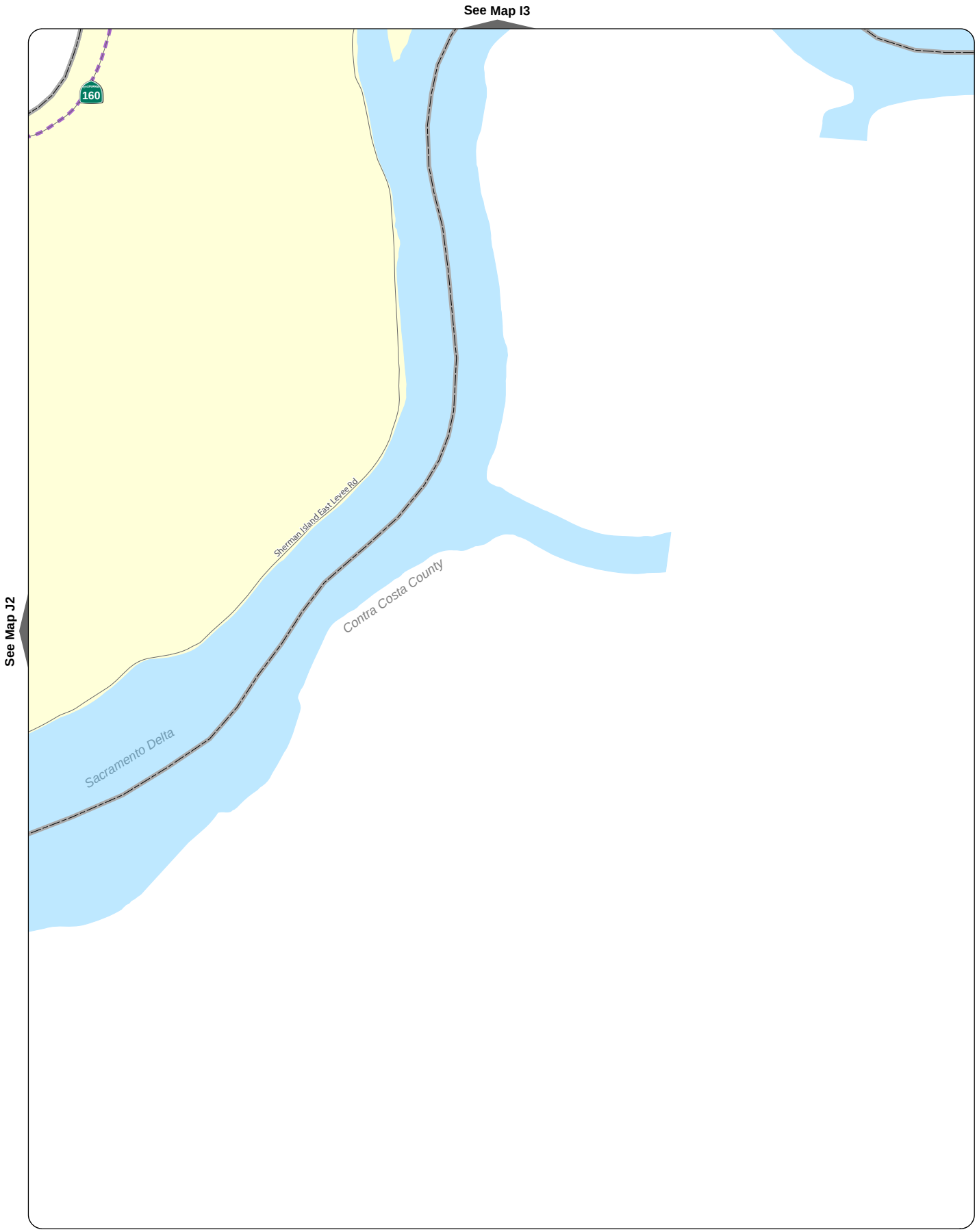
MAP I5
EXISTING AND PLANNED BICYCLE FACILITIES



MAP J1
EXISTING AND PLANNED BICYCLE FACILITIES



MAP J2
EXISTING AND PLANNED BICYCLE FACILITIES



MAP J3
EXISTING AND PLANNED BICYCLE FACILITIES

PHASING OF PROPOSED BIKEWAYS

The intent of prioritizing projects is to identify which bicycle facilities will be constructed first. As projects are constructed, longer-term projects should move up the list. The project list and individual projects outlined in the Sacramento County Bicycle Plan are flexible concepts that serve as implementation guidelines. Appendix G presents the project priority list. This list, and perhaps the overall system and segments themselves, may change over time as a result of changing bicycling patterns, land use patterns including new development areas with fees for funding, and implementation constraints and opportunities like road repaving. County Staff, in conjunction with community members and Sacramento City/County Bikeway Advisory Committee (SacBAC) should review the project list regularly to ensure it reflects the most current priorities, needs, and opportunities for implementing the bicycle network in a logical and efficient manner.

The prioritization of bikeways is based on expected use, type of route, connectivity, and potential improvements to safety. A composite index and map (Appendix F) was developed to show the suitability of particular geographical areas and travel corridors for bicycle travel. The suitability index considers the following parameters:

- Population and employment density for residential and non-residential land use
- Travel times to regional parks, high schools, regional public facilities, and regional employment centers
- Number of travel lanes
- Posted speed limit
- Vehicle capacity
- Constraints for bicycle travel

The Plan prioritizes proposed bikeway improvements by identifying projects to be completed in phases. The phasing plan is based upon need (or suitability) as well as readiness.

Short-Term Projects

Tables G-1 to G-4 in Appendix G list on-street and off-street short, medium, and long-term projects. Table 8 shows the bike path, bike lane, and bike route mileage in Phase 1.

TABLE 8: SHORT-TERM PROJECTS	
Bikeway Class	**Total Mileage**
Class I Bike Path	85.39
Class II Bike Lanes	372.15
Class III Bike Routes	11.04
Total	**468.58**
Source: Mark Thomas & Company	

Med-Term Projects and Long-Term Projects

Mid- and long-term projects are listed in Tables G-1 and G-4 in Appendix G. All projects are presented in a table that includes information on project boundaries, facility classification, and planning level cost estimates based on industry standard cost estimating factors. Tables 9 and 10 show the bike path, bike lane, and bike route mileage in Phases 2 and 3.

TABLE 9: MID-TERM PROJECTS	
Bikeway Class	**Total Mileage**
Class I Bike Path	203.34
Class II Bike Lanes	244.09
Class III Bike Routes	28.2
Total	**475.63**
Source: Mark Thomas & Company	

TABLE 10: LONG-TERM PROJECTS	
Bikeway Class	**Total Mileage**
Class I Bike Path	59.68
Class II Bike Lanes	319.52
Class III Bike Routes	2.84
Total	**382.04**
Source: Mark Thomas & Company	

Current and Future Use of Project Lists

The recommended projects lists should serve as flexible concepts, guiding Sacramento County as the network and supporting facilities are built. The priority project list and the overall system may change over time as a result of changing travel patterns, constraints, and opportunities.

SacBAC and County staff should review the priority project list annually to ensure that it reflects the most current priorities, needs, and opportunities for implementing the network in a logical and efficient manner. As projects are implemented and taken off the list, mid-term and long-term projects may become priority projects.

PROPOSED COUNTYWIDE PROJECTS AND SUPPORT FACILITIES

Countywide bicycle projects and support facilities are an important aspect of the proposed bikeway system because they add to the convenience and safety of the county bicycling experience. These recommendations supplement the Goals, Policies, and Implementation Measures outlined in Chapter 3. Implementing these recommendations should occur throughout the county as funding and implementation opportunities become available.

Bike Detection

Bicycle detection at signalized intersections can provide a substantial safety improvement for bicyclists and motorists. This is particularly true in rural areas where signals are found at crossings of state highways and other major roads. Loop detectors at signalized intersections allow motorists to trigger a traffic light. The following recommendations expand typical detection loop efforts to include bicycles along designated routes and at key intersections by providing improvements such as calibration of existing detectors and installation of stencils. In addition, these recommendations should be incorporated into new development requirements where signalized intersections are proposed.

Regularly Calibrate Loop Detectors

While loop detectors facilitate faster and more convenient motorist trips, if they are not calibrated properly or stop functioning, they can make bicyclists wait excessively for signals to change, unaware that the loop is not detecting their bicycle. Where appropriate, all existing loops should be tested annually and calibrated and operable for bicyclists. Impatient bicyclists may take more risks, crossing streets when not permitted.

Apply Pavement Stenciling Above All Bicycle Loop Detectors

Since most bicyclists, as well as motorists, do not know how loop detectors work, a pavement stencil that shows bicyclists where to stop to activate a loop should mark all detectors expected to be used by bicyclists. Figure 19 shows the Caltrans Standard Plan 24C bicycle detection marking. Educational materials distributed by the County should describe how to activate bicycle loop detectors. Stencils should be repainted when needed.

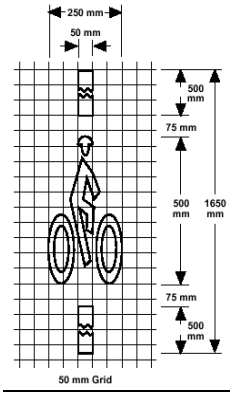


Figure 19 – Bicycle Detection Marking

Destination Signs

A well-planned and attractive system of destination signs, trail maps, and markers can greatly enhance bikeway facilities by signaling their presence and location to both motorists, bicyclists, pedestrians and other users. By leading people to county bikeways, and the safe and efficient transportation they offer, effective signage can encourage more people to bicycle. These signs also aid in emergency response along Class I paths. Figure 20 shows recommended signs for Sacramento County Class I bike paths. These are recommended along the proposed Class I paths in addition to existing paths through Sacramento County Parks. The County should work with the Parks and Recreation Districts to install signs in the following parks:

- Cottage Park
- Del Campo Park
- Depot Park (with Dry Creek Trail improvement)
- Phoenix Park
- Arnold Avenue Park
- Santa Anita Park

Figure 20 – Class I Wayfinding Signage

Figure 21 – Class II and III Wayfinding Signage

All wayfinding signs on public roadways in the County should conform to the signage identified in the current version of the CA MUTCD. All signs should convey the “Four Ds”: Direction, Destination, Distance and Distinction. Sacramento County DOT should consider using D11-1 Bike Route Signs in conjunction with the D1 Series Bicycle Guide Signs (Figure 21) as part of the wayfinding system. These signs should be installed at decision making points along on-street corridors directing bicyclists to transit stations, the American River Parkway, and other major destinations like schools, parks, civic buildings, and shopping centers.

Parking Lot Trailheads

Regular and convenient points of access are necessary for Class I paths. Neighborhood access points are typically provided at regular and convenient locations where topography and other conditions allow. There is also a need for enhanced trailheads that include parking, signs, benches, trash receptacles and other amenities. Ideally trailheads are provided in conjunction with another public use such as a park, where maintenance and other resources are already devoted. In some instances stand-alone trailhead parking lots may be needed. An example is the trailhead parking lot at Bannister Park. As new Class I paths are developed, the County will need to consider appropriate locations for trailheads. The Dry Creek Greenway Concept Plan and American River Parkway Master Plan provide guidance for the placement of trailheads.

Bike Parking

Secure and convenient bike parking is critical in the effort to encourage bicycling. As noted previously, bike racks are provided at all new commercial and industrial sites. Some businesses in older infill areas of the County may not have bike racks because the businesses pre-exist the County's bike parking requirements. This is an opportunity for the County to work with these businesses to get bicycle racks installed, and this is a planned project. The County should work with Regional Transit to provide secure long term bicycle parking at all major transit transfer points (light rail stations and transit hubs). Shower and clothes lockers are important for bicycle commuters with a rigorous commute and/or formal office attire. Showers and clothes lockers should be encouraged at major employment centers.

On-street bicycle parking

Sacramento County has established bicycle parking requirements for new buildings. The County should supplement these code requirements by establishing a comprehensive bicycle parking program that includes some or all of the components described below:

- Perform an inventory of all bicycle parking on public and private property.
- Develop a program to install bicycle racks by request. The program should be publicized and requests accepted through postcards, online, and by phone.
- Install and support countywide electronic bike locker facilities in conjunction with regional partners.
- Create a pamphlet highlighting bicycle parking requirements for Current Planning and Zoning planners referencing purposes.

Bicycle parking can be broadly defined as either short-term or long-term parking:

- Short-term parking – Bicycle parking meant to accommodate visitors, customers, messengers, and others expected to depart within two hours; requires approved standard rack, and appropriate location and placement.
- Long-term parking – Bicycle parking meant to accommodate employees, students, residents, commuters, and others expected to park more than two hours. This parking is to be provided in a secure, weather-protected manner and location.

Both long- and short-term bicycle parking should provide:

- The ability to use U-type and cable locks.
- A design that is intuitive and easy to use.
- A five-foot aisle for bicycle maneuvering beside or between each row of bicycle parking.

This section includes types of bicycle parking, installation best practices, and recommendations for implementation.

Short-Term Bicycle Parking

Short-term bicycle parking facilities are intended to provide short-term bicycle parking, and include racks that permit the locking of the bicycle frame and one wheel to the rack and support the bicycle in a stable position without damage to wheels, frame, or components. Short-term bicycle parking is currently provided at no charge at most locations. Such facilities should continue to be free, as they provide minimal security, but encourage cycling and promote proper bicycle parking.

Recommendations for short-term bicycle parking include the following:

- Bicycle parking spaces should be eight feet long and 2½ to 3 feet wide, and overhead clearance for covered spaces should be at least seven feet.
- Bicycle racks or lockers should be securely anchored to the surface or structure.
- Two points of contact with the bicycle frame to provide stability.
- Contact that allows the frame and at least one wheel to be locked to the rack.
- Wave racks, though common, should not be used because they do not provide two points of contact or ease of use in the interior spaces.
- Racks should have at least 30 inches of clearance from all directions from any vertical obstruction, including other racks, walls, and landscaping.

Based on best practice for cost, simplicity of design, and theft-resistance, the preferred short-term bicycle rack design is the “Sheffield” or Inverted-U style rack (Figure 22). These racks offer a simple, secure design for placement where space is limited. When installing more than one, racks should be three to four feet apart and at least two and a half feet from other objects. Typical installation cost for one Inverted-U rack is $200. The typical footprint for an inverted-U rack is 28 square feet per rack that holds two bikes. Installation should be set back from walls and other obstructions to allow for two bikes.

Note that on-street bicycle parking is an atypical design for short-term bicycle parking and no nationally-accepted design guidelines currently exist.

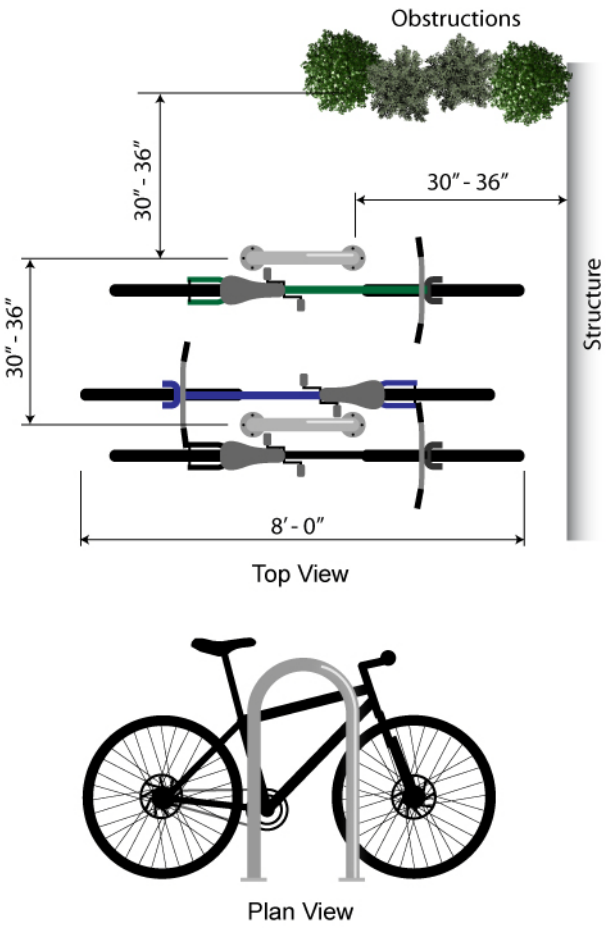


Figure 22 – Inverted “U” Rack

Where racks are not possible on sidewalks (because of narrow sidewalk width, sidewalk obstructions, or other issues), bicycle parking can be created in the street where on-street vehicle parking is allowed. Cities like Berkeley, California and Portland, Oregon have implemented these types of short-term bike parking facilities in central business districts. Two possible options for creating parking in the street include clustered racks in a car parking space protected by bollards or curbs, and racks installed on sidewalk curb extensions where adequate sight distance can be provided. Installing bicycle parking directly in a car parking space incurs only the cost of the racks and bollards or other protective devices.

A curb extension is more expensive to install and can be prohibitively expensive if substantial drainage and/or utility work is necessary. Costs may be less if the curb extension is installed as part of a larger street or pedestrian improvement project.

While on-street bicycle parking may take space away from automobile parking, the auto parking loss can be mitigated. Additional auto parking spaces can be created by consolidating driveways or otherwise finding places to potentially allow auto parking where it is currently prohibited. Options for combining bicycle and motorcycle parking also exist.

Appropriately placed bike racks can encourage use. Table 11 provides recommended placement guidelines.

TABLE 11: BICYCLE RACK PLACEMENT GUIDELINES

Design Issue	Recommended Guidance
Minimum Rack Height	To increase visibility to pedestrians, racks should have a minimum height of 33 inches or be indicated or cordoned off by visible markers.
Signing	Where bicycle parking areas are not clearly visible to approaching cyclists, CA MUTCD D4-3 signage should direct them to the facility.
Lighting	Lighting of not less than one foot-candle illumination at ground level should be provided in all bicycle parking areas.
Frequency of Racks on Streets	In popular retail areas, bike racks should be installed every 75 feet on each side of each block. Areas officially designated or used as bicycle routes may warrant the consideration of more racks.
Location and Access	Access to facilities should be convenient; where access is by sidewalk or walkway, curb ramps should be provided where appropriate and ADA-compliant. Parking facilities intended for employees should be located near the employee entrance, and those for customers or visitors near the main public entrances. (Convenience should be balanced against the need for security if the employee entrance is not in a well traveled area.) Bicycle parking should be clustered in lots not to exceed 16 spaces each. Large expanses of bicycle parking make it easier for thieves to operate undetected.
Locations within Buildings	Provide bike racks within 50 feet of the entrance. Where a security guard is present, provide racks behind or within view of a security guard. The location should be outside the normal flow of pedestrian traffic.
Locations near Transit Stops	To prevent bicyclists from locking bikes to bus stop poles – which can create access problems for transit users, particularly those who are disabled – racks should be placed in close proximity to transit stops where there is a demand for short-term bike parking.
Locations within a Campus-Type Setting	Racks are useful in a campus-type setting at locations where the user is likely to spend less than two hours, such as classroom buildings. Racks should be located near the entrance to each building. Where racks are clustered in a single location, they should at least be surrounded by a fence and watched by an attendant where possible. The attendant can often share this duty with other duties to reduce or eliminate the cost of labor being applied to the bike parking duties. A cheaper alternative to an attendant may be to site the fenced bicycle compound in a highly visible location on the campus. For the long-term parking needs of employees and students, attendant parking and/or bike lockers are recommended.
Retrofit Program	In established locations, such as schools, employment centers, and shopping centers, the County should conduct bicycle parking audits to assess the bicycle parking availability and access, and add in additional bicycle racks where necessary.

Long-Term Bicycle Parking

Bicycle Lockers

Long-term bicycle parking facilities are intended to provide secure long-term bicycle storage. Long-term facilities protect the entire bicycle, its components, and accessories against theft and inclement weather. Examples include lockers, check-in facilities, monitored parking, restricted access parking, and personal storage.

Long-term parking facilities are more expensive to provide than short-term facilities, but are also significantly more secure. Although many bicycle commuters would be willing to pay a nominal fee to guarantee the safety of their bicycles, long-term bicycle parking should be free wherever automobile parking is free. Potential locations for long-term bicycle parking include large employers and institutions where people use their bikes for commuting, and not consistently throughout the day. An advantage of lockers (Figure 23) is that they can be configured to more easily accommodate varying numbers and different styles of bicycles, such as recumbent bicycles.

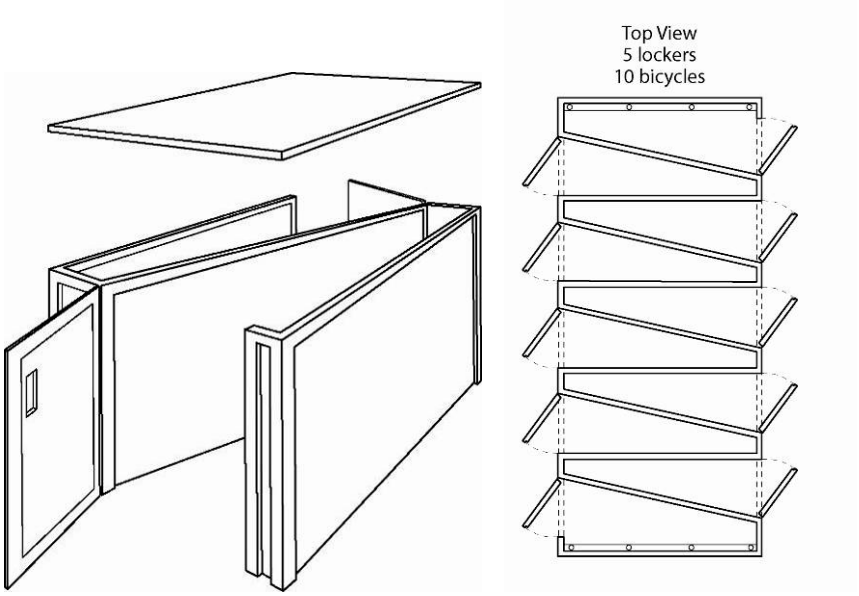


Figure 23 – Bicycle-Safe Lockers

Technology for bicycle lockers is evolving. Original bicycle lockers used a lock-and-key mechanism and a monthly rental period. These types of lockers are still in use throughout the US. For safety reasons, lockers should have some transparency so people passing by can see what is inside. Capital costs for bicycle lockers vary greatly depending on size and construction material. On average, the standard lock and key bicycle locker costs between $1,000 and $1,500. Typically, bike lockers require 35 square feet.

E-lockers employ the latest technology to provide on-demand rental. BikeLink, a company with e-lockers in many of the major west coast cities of the US, allows users to purchase a card with a cash value online or at participating retailers. This cash value provides access to any of BikeLink's e-lockers. Cost should depend on demand at locations, but rental rates typically range from three to five cents per hour. Pricing lockers according to demand allows multiple renters to use e-lockers every day. BikeLink is working with transit operators, such as BART in the Bay Area, to link e-locker cash value to their transit smart cards.

Provision of Showers and Lockers

Shower and locker facilities are encouraged but not required in the County zoning ordinance. These facilities encourage bicycling by providing storage space for a change of clothes and an opportunity to freshen up before work. Academic studies show shower and locker facilities at places of employment can be a factor in encouraging commuting to work by bicycle.[2] Additionally, employees who workout on their lunch breaks can also benefit from these facilities. While simpler end-of-trip facilities may be more feasible, consideration should be given to requiring shower and locker facilities in all developments with one-hundred or more employees.

Lighting

City street lights provide lighting for Class II and Class III on-street bikeways. Lighting for Class I paths is typically provided when Class I paths are located in paseos and other formal landscaped areas. Lighting for Class I paths is generally not provided within open spaces because the County has made a decision to preserve the natural feel of the open space to the extent possible. In addition, the County's open space areas are not open to the public between one hour after sunset and sunrise. There may, however, be instances where lighting is provided, including but not limited to trail access points, road crossings, tunnels, bridge undercrossings, and overcrossings. At road crossings and access points, existing street lights may be sufficient, but where not sufficient, additional lighting may be installed. Consideration should be given to avoiding excessive glare on adjacent properties, vandal-resistant materials/fixtures, solar lighting, and aesthetic design in context with surroundings.

MONITORING AND MAINTENANCE OF BIKEWAYS

Both off-street and on-street bikeways need regular maintenance. Bicycles are more susceptible than motor vehicles to roadway irregularities such as potholes, broken glass, and loose gravel. Construction activities in Sacramento County present additional maintenance requirements. Construction affects bicyclists through increased roadway wear due to heavy vehicle traffic and increased debris such as sand and gravel from construction equipment. Construction activities may also hinder bicyclists if bikeways are closed or obstructed due to road maintenance, landscaping or other construction activities. Special accommodations may be made to provide for bicyclists during construction periods.

Off-Street Bike Path Maintenance

A high standard of management and maintenance are key ingredients to the long-term success of bike paths. The effects of good maintenance can be a highly effective deterrent to vandalism and littering. For success of path maintenance and safety, the County should work with the neighboring jurisdictions and continue working with Sacramento County Parks.

2. John E. Abraham, and John Douglas Hunt. "Influences on Bicycle Use." Transport 34 (2007): 453-470.

Shared-use paths require regular maintenance, including trimming adjacent vegetation, sweeping, plowing, and removing trash and debris. The County's Department of Transportation routinely monitors the pathways weekly, checking paving surfaces, debris and litter, signage, and vandalism and schedules maintenance repairs.

Key Management Responsibilities

The following list represents major tasks for managing bike paths and should be a coordinated effort between Sacramento County DOT and the County Parks Department.

- Organize, coordinate, and implement trail operations plan
- Develop and implement a maintenance plan and ensure adequate funding
- Obtain bids and manage contracts for maintenance and improvements
- Monitor security/safety of paths through routine inspections
- Oversee maintenance and rehabilitation efforts
- Establish consistency in the path use regulations with neighboring jurisdictions
- Manage and respond to issues and incidents along paths
- Coordinate routine law enforcement needs
- Assist in coordination of art along paths
- Act as the local paths spokesperson with the public and elected officials, and respond to the issues and concerns raised by users
- Develop and manage an emergency response system in coordination with local fire and police departments

On-Street Bike Facility Maintenance

Sacramento County should evaluate its current street maintenance and repair policies to ensure that they reflect the needs of bicyclists. Specific measures to review include:

- Street sweeping – As motor vehicles travel along the roadway, debris is pushed to the outside lanes and shoulder. Debris also collects at the center of intersections. Roads striped with bike lanes or designated as bicycle routes should be swept more frequently than roads without designated bikeways. Street sweeping on these roadways should include removing debris on the shoulder and at intersections.
- Minor repairs and improvements – Potholes and cracks along the shoulder of roadways primarily affect bicyclists and should be completed within a timely manner. All repairs should be flush to the existing pavement surface.
- Drainage grates – When repaving or maintaining roadways, drainage grates should be inspected to ensure that grate patterns are perpendicular to the road. Replacement of bicycle-unfriendly drainage grates should be standard.

- Street resurfacing – When streets are resurfaced, utility covers, grates and other in-street items should be brought up to the new level of pavement. Similarly, the new asphalt should be tapered to meet the gutter edge and provide a smooth transition between the roadway and the gutter pan.

- Proactive identification of and response to maintenance needs – The County currently has an e-mail service online and a phone hotline to identify needed repairs to roadways. The County should promote this service as a way of identifying maintenance needs for on-street bikeways and paths.

- Actively coordinate with maintenance workers – Maintenance workers should be involved in the development of bicycle-related maintenance policies to ensure that County staff and maintenance workers understand each other's needs and limitations.

- Proactively sweep streets after collisions – The County should work closely with the Sherriff's Department to ensure that streets are swept after automobile collisions.

Minimize Impacts to Bicyclists During Construction

Construction and maintenance activities present challenges for bicyclists. Road construction and maintenance can force bicyclists out into travel lanes with vehicles. To help alleviate impacts to bicyclists during construction and development, several guidelines are recommended. These will help inform bicyclists in advance of these obstacles.

- If feasible, avoid parking construction or maintenance vehicles in bicycle lanes or on designated bicycle routes.

- Provide suitable construction warning signs for any activities that involve work in a designated bikeway. Signage should warn bicyclists well in advance of any location where the bicycle lane is closed for construction or maintenance activities.

- If possible, maintain a coned-off area between the construction zone and vehicle lane for bicycle travel. A 5-foot area is optimal, but the area can be reduced to 3 feet if necessary.

- Provide detour routes for bicyclists around areas undergoing construction.

- Metal plates should be treated so they are not slippery.

A temporary reduction of speed limits or work zone speed limit should be considered on roadways where motor vehicles travel 40 mph or greater.

BIKEWAY SECURITY

Security or perceived security may be an issue, especially along portions of proposed Class I bike paths, overcrossings, and undercrossings. The following actions are recommended to address these concerns. Enforcement of applicable laws on paths should be performed by the County Sherriff's Department using both bicycles and vehicles. Class I paths may require additional patrol and enforcement services, whether by local police agencies or park rangers. Enforcement of vehicle statutes relating to bicycle operation will be enforced on Class II and Class III bikeways as part of the department's normal operations. No additional manpower or equipment is anticipated for Class II or III segments.

Proper Design and Maintenance

Safety and security of bicycle facilities is possible through proper facility design and maintenance. These actions should be incorporated into the planning and development process of all bicycle facilities.

- Adhere to the established Federal and State design, operation, and maintenance standards
- Supplement these standards with the sound judgment of professional planners, public safety officials, and engineers.
- Maintain adequate recording and response mechanisms for reported safety problems.
- Provide regular police patrols to the extent needed.
- Research the causes of each reported bicycle collision within the County's bicycle network. Respond to accident investigations with appropriate design or operation improvements.

Specifically for Class I bike paths:

- The Department of Public Works should manage vegetation so corridors can be visually surveyed from adjacent streets and residences.
- Select shrubs that grow no more than three feet tall and trees that branch out more than six feet tall.
- Place lights strategically and as necessary.
- Place benches and other path amenities at locations with good visual surveillance and high activity.
- Provide mileage markers at half-mile increments and clear directional signage for orientation.
- Create a "Path Watch Program" involving local residents.
- Install security cameras at undercrossings, tunnels and overcrossings.

6. PROJECT IMPLEMENTATION

Implementation of the proposed bikeway system will require funding from local, state, and federal sources. To facilitate funding efforts, this section will present conceptual construction cost estimates for the proposed system along with a brief description of past expenditures for bikeway and pedestrian facilities.

COST ESTIMATES

Table 12 contains a unit cost summary for constructing the proposed bikeway facilities shown in the Existing and Planned Bicycle Network Maps located in Chapter 5. These cost estimates are based on costs experienced in other California communities, recent cost estimates developed as part of traffic impact fee and mitigation analysis, and previous bikeway planning projects in Sacramento County. The cost estimates include engineering, permitting, right-of-way, construction, and inspection costs. These cost estimates should be used only to develop generalized construction cost estimates and project prioritization. More detailed estimates can be developed after any feasibility analysis, preliminary engineering, and design.

TABLE 12: GENERALIZED UNIT COSTS FOR BIKEWAY CONSTRUCTION

Facility Type	Estimated Cost
Class I Bike Path that is 10 feet wide with 2 foot shoulders	$792,000/mile
Class I Bike Path Crossings	
• Highway Crossing[1]	~$6,000,000
• Arterial Crossing	$30,000
• Collector Crossing	$20,000
• Canal/Creek Crossing	$3,000
Class II Bike Lane	
• 2 Lane Road with on-street parking	$48,000/mile
• 4 Lane Arterial Road with no on-street parking	$310,000/mile
• 6 Lane Thoroughfare	$400,000/mile
Class III Bike Route	
• Signing only	$5,300/mile

[1] Highway Crossings are estimated at $6,000,000 based on the priority crossing estimates.

Source: Mark Thomas & Company, 2009

The unit costs identified in Table 12 have been applied to the proposed bikeway system. Additional crossing constraints may potentially be identified during preliminary engineering. Table 13 presents a summary of total system costs by facility type. It shows a total system of over 1,300 miles of proposed Class I, II, and III facilities. Total cost for constructing the proposed system is estimated at $458.3 million.

TABLE 13: CONCEPTUAL CONSTRUCTION COST ESTIMATE SUMMARY	
Bikeway Classification	**Length/Cost**
Class I Bike Path	348.4 miles / $265.5 million
Class I Bike Path Priority Overcrossings	1.1 miles / $49.6 million
Class II Bike Lane	935.76 miles / $143.0 million
Class III Bike Route	42.1 miles / $0.22 million
Total	**1,326.3 miles / $458.3 million**
Source: Mark Thomas & Company, 2009	

The three phases and the different projects within these phases are in Appendix G, as are conceptual construction cost estimates for individual route segments. Table 14 shows the cost estimates for the short-term, mid-term, and long-term phases.

TABLE 14: PROJECT PHASES' COST ESTIMATES	
Short-term	$163.3 million
Mid-term	$139.2 million
Long-term	$156.4 million
Total	**$458.3 million**
Source: Mark Thomas & Company, 2009	

BIKEWAY MAINTENANCE COSTS

The proposed bicycle network for Sacramento County is mostly comprised of on-street bicycle facilities. On-street bikeways are maintained as part of the normal roadway maintenance program and extra emphasis should be put on keeping the bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility or creeping into the roadway. Alternatively, bicycle paths require regular maintenance and repair as needed including vegetation overgrowth. Typical maintenance costs for the bikeway network are shown in Table 15, Bikeway Maintenance Frequency and Cost Opinions.

Using cost opinions in Table 15 and assuming the bikeways are constructed given the proposed phasing schedule, it is estimated that maintenance of the bikeway network envisioned by this plan would cost an additional $2.5 million. This includes maintenance of signage and striping.

TABLE 15: BIKEWAY MAINTENANCE FREQUENCY AND COST OPINIONS

Facility Type	Unit Cost	Description	Length (Miles)	Annual Cost	Notes
Class I	$8,500	Miles/Year	110.4	$1.0 million	Lighting and debris and removal of vegetation overgrowth.
Class II	$1,500	Miles/Year	831.6	$1.4 million	Repainting lane stripes and stencils, sign replacement as needed.
Class III	$1,000	Miles/Year	46.4	0.04 million	Sign and shared use stencil replacement as needed.
Annual Cost: $2.5 million					

Source: Mark Thomas & Company, 2009

POTENTIAL FUNDING SOURCES

In some cases, portions of the proposed system will be completed as part of future development and road widening and construction projects within Sacramento County. For those portions that will rely on other funding mechanisms, the following provides descriptions of the more common Federal, State and local sources available to fund bicycle projects. Appendix H provides a complete listing of Federal, State and regional sources with contact information.

Federal Sources

Federal funding through the SAFETEA-LU (Safe, Accountable, Flexible, and Effective Transportation Equity Act – Legacy for Users) could provide the bulk of non-local funding. For Sacramento County, applicable SAFETEA-LU programs include the programs listed below.

- Surface Transportation Program (STP)
- Transportation Enhancement Activities (TE)
- Federal Safe Routes to School (Section 1404 SAFETEA-LU)
- Bicycle Transportation and Pedestrian Walkways Program
- Recreational Trails Program
- Job Access and Reverse Commute Grants
- Congestion Mitigation/Air Quality Program (CMAQ)

SAFETEA-LU funding is administered through the state and regional governments. For the Sacramento Region, this is SACOG. Most of the funding programs are transportation versus recreation oriented, with an emphasis on reducing auto trips and providing inter-modal connections. Funding criteria includes completion and adoption of a Bikeway Master Plan and quantification of the costs and benefits of the system, proof of public involvement and support, CEQA compliance, and commitment of local resources. In most cases, SAFETEA-LU provides matching grants of 80 to 90 percent.

State Sources

The following state sources provide funding that is applicable to bikeway funding for Sacramento County:

- Bicycle Transportation Account (BTA) – The State Bicycle Transportation Account (BTA) is an annual program that is available for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects that benefit bicycling for commuting purposes. Funding for this program is typically about $7 million annually statewide.

- Local Transportation Fund (LTF) – Under Article 3 of the Transportation Development Act (TDA), up to two percent of the LTF allocation to cities and counties can be used for bicycle and pedestrian projects. Revenues to the LTF program are derived from $.0025 of the statewide sales tax.

- Environmental Enhancement and Mitigation Program (EEM) – Bicycle projects can qualify for EEM funds if they meet the program's requirements. Any non-profit organization can sponsor projects, which are submitted to the State Resources Agency for evaluation in June/July of each year.

- Assembly Bill 1475 – Safe Routes to School Bill – This bill redefines transportation safety in California by investing $20 million per year in bike lanes, bicycle and walking trails, new sidewalks and traffic-calming projects near California schools. Several rounds of solicitation and funding have been completed. It is anticipated that this program will continue for future years.

Local Sources

A variety of local sources may be available for funding bikeway and pedestrian facilities. However, their use is often dependent on political support.

- New Construction – Future road widening and construction projects are one means of providing on-street bikeways. To ensure that roadway construction projects provide these facilities where needed, roadway design standards need to include minimum cross-sections that have sufficient pavement for on-street bikeways. Also, the review process for new development should include input pertaining to consistency with the proposed system. Future development in the County will follow the street design standards, which include bikeway facilities.

- Impact Fees – Another potential local source of funding is developer impact fees. Several different types of impact fees are available for bikeway development. Traffic mitigation fees are typically tied to trip generation rates and traffic impacts produced by the proposed development; they are often used to install Class II bike lanes during road widening projects, but are not used for Class I facilities. Bike trail development fees are often used in new specific plan areas as a way to finance construction of Class I paths. This would include the recently adopted Sacramento County Transportation Development Fee Program.

- Measure A – Sacramento County voters recently passed the extension Measure A to allocate $.005 of sales tax for transportation projects. Measure A includes funding for roadway widening (including on-street bicycle lanes), bicycle lanes and paths, and pedestrian facilities.

- Assessment Districts – Different types of assessment districts can be used to fund the construction and maintenance of bikeway facilities. Examples include Mello-Roos Community Facility Districts, Infrastructure Financing Districts (SB 308), Open Space Districts, or Lighting and Landscape Districts. These types of districts have specific requirements relating to their establishment and use of funds.

Other Sources

Local sales taxes, developer or public agency land dedications, private donations, fund-raising events, and in some instances volunteer labor are other local options to generate funding for bikeway projects. Creation of these potential sources usually requires substantial local support.

FUNDING TABLE

Table 16 provides detailed bicycle facility funding information. The purpose of Table 16 is to estimate the total possible funding available for bicycle facilities in the next 20 years, with the understanding that many of the current funding sources will expire before 2029 and new funding sources may become available.

Average project awards, required local matches, and funding expiration years estimate the amount available for bicycle projects over the next 20 years. For projects where bicycle facilities are a part of a larger improvement, the portion allocated to bicycle facilities is estimated at five percent. These funding estimates are marked with an asterisk. Local match requirements and the funding expiration years are provided for estimating the total amount of funding available for bicycle facilities until 2029. For funding sources that expire before 2029, the available funding is estimated until the source's expiration year. The local match requirement is multiplied by the estimated 20-year funding amount to provide an estimate of the local match requirement needed until 2029.

Table 16 estimates that over $282 million is available for bicycle facilities until 2029, resulting in a local match requirement amount of $30 million. In addition to this funding estimate, the County will have to utilize local resources for implementing the Plan's bikeways including development requirements, with roadway projects including overlays, impact fees, and working with other County departments, such as Parks and Recreation, to help implement projects.

COST AND FUNDING SUMMARY

Future expenditures for bikeway facilities are difficult to predict due to the ever changing fiscal climate and the number of variables involved in securing funding. It is instructive to consider the total annual amount required to implement the proposed system over a 20-year time frame. Dividing the approximate $458 million cost equally over 20 years equates to about $24 million annually in 2009 dollars. The following actions are recommended to complete the proposed system:

- Prepare joint applications wherever possible, with other local and regional agencies for competitive funding programs at the state and federal levels.
- Actively pursue funding from the BTA and Safe Schools Program to complete priority portions of the proposed system.
- Use existing funding sources as matching funds for state and federal funding.
- Include proposed bikeways wherever possible as part of roadway projects involving widening overlays, or other improvements.

TABLE 16: POTENTIAL BICYCLE FACILITY FUNDING SOURCES AND AMOUNTS

Funding Source	California Appropriation	Average Project Appropriation	Local Match Requirement	Funding Expiration	Estimated Funding Available for Bicycle Facilities		Estimated 20 Year Match
					2009	2029	
SAFETEA-LU Transportation, Community and System Preservation Program (TCSP)	$ 3,900,000	$492,000	20%	N/A	$195,000*	$3,900,000	$780,000
ISTEA Surface Transportation Program (STP)	N/A	$460,000	0%	2012	$460,000	$1,380,000	$0
ISTEA Congestion Mitigation and Air Quality Program (CMAQ)	N/A	$ 1,100,000	20%	2012	$160,000**	$3,200,000	$640,000
ISTEA Transportation Enhancements Program (TE)	$ 7,450,000	N/A	20%	2012	$372,500*	$7,450,000	$1,490,000
Recreational Trails Program	$4,680,000	N/A	0%	N/A	$1,404,000***	$4,212,000	$0
Bicycle Transportation Account	$7,200,000	$378,947	10%	2014	$378,947	$1,894,737	$189,474
Safe Routes to School Program (State – SR2S)	$48,000,000	$1,000,000	10%	Indefinite	$3,000,000****	$60,000,000	$6,000,000
Office of Traffic Safety Grants – Selective Traffic Enforcement Program (STEP)	$56,000,000	N/A	0%	N/A	N/A	N/A	N/A
Community Based Transportation Planning Demonstration Program	N/A	$208,932	20%	N/A	$208,932	$4,178,640	$835,728
SACOG Bicycle and Pedestrian Program*****	N/A	N/A	10%	N/A	N/A	$1,400,000,000	$140,000,000
Totals	**$127,230,000**	**$3,639,879**	**N/A**	**N/A**	**$6,179,379**	**$1,486,215,377**	**$149,935,202**

* TCSP and TE funds are typically awarded to projects that improve transportation system efficiency that may include bicycle facilities. Five percent of these project costs are estimated for bicycle facilities.

** SACOG has identified three bicycle facilities totaling $3.2 million, which equates to $160,000 per year.

*** Recreational Trails Program requires 30 percent of its funds to pay for non-motorized transportation facilities.

**** California SR2S program funds up to three projects applied for by one agency, with a maximum project award of $1 million.

*****The 2035 Metropolitan Transportation Plan identifies $1.4 Billion in funding for bicycle and pedestrian facilities in the SACOG Region.

7. ENCOURAGEMENT, EDUCATION, AND ENFORCEMENT

INTRODUCTION

While infrastructure is an important element of a successful bicycling program, encouragement programs, education of proper bicycling etiquette and safety, and enforcement programs, help bicyclists ride more often and safer. Encouragement programs inspire and support residents in changing their transportation habits to bicycle use. Education programs can give bicyclists, motorists, and pedestrians the knowledge and confidence necessary to safely share the road. The police generally conduct the third type of program type – enforcement – helping to reinforce compliance with traffic laws and increasing safety among all users of the transportation system.

The community must be confident that bicycling is a safe choice for transportation and recreation. This means increasing the awareness of all network users about safe behavior and improving the physical bicycling environment. By taking a multi-faceted approach to safety involving both encouragement and education tactics, the Sacramento County Department of Transportation (DOT) can educate current riders while encouraging new riders to bicycle in a safe, predictable manner.

Though they are similar, encouragement and education programs have different goals, messages, and methods of communication. Encouragement programs aim to increase the number of new bicycle riders and provide incentives for existing bicycle riders. Education programs focus on teaching skills, rights, and laws and increase safety and awareness. Both encouragement and education programs carry the message of increasing safety for all network users.

Encouragement and educational programs, in the context of bicycle planning, are designed to meet a range of objectives: promote safety, raise awareness of bicycling as an activity and of bicycling infrastructure, connect current and future bicyclists to existing resources, educate current and future bicyclists about their rights and responsibilities, and encourage residents to bicycle more often. These efforts should provide measurable results in modal share of bicycling, safe bicycling behavior (reductions in collisions), and cultural awareness of bicycling.

The following sections first discuss the benefits of bicycling, the need to encourage and educate bicyclists and motorists, the role of the involved agencies, and relative expenses of these programs. The remainder of this chapter is divided into a discussion of several elements – smaller programs that can be used as components of larger, comprehensive programs, and a discussion of how these elements fit together to create comprehensive education and encouragement and marketing programs. Also included is how Sacramento County DOT and other parties can implement these programs.

WHY ENCOURAGE BICYCLING?

Bicycling to promote physical health is recognized as a primary goal of numerous national bike plans. Bicycling is a healthy form of transportation that can help people achieve regular, daily exercise. Low levels of physical activity can contribute to a number of diseases, including:

- Heart disease
- Stroke
- Obesity
- Depression
- Hypertension
- Diabetes
- Osteoporosis
- Some Cancers

Obesity is a trend nationwide. As Figure 24 shows, there is a direct link between walking, bicycling, and transit use and obesity. In comparison to listed European countries and Canada, the US has a higher rate of obesity and a lower percent of walking, bicycling, and public transportation use.

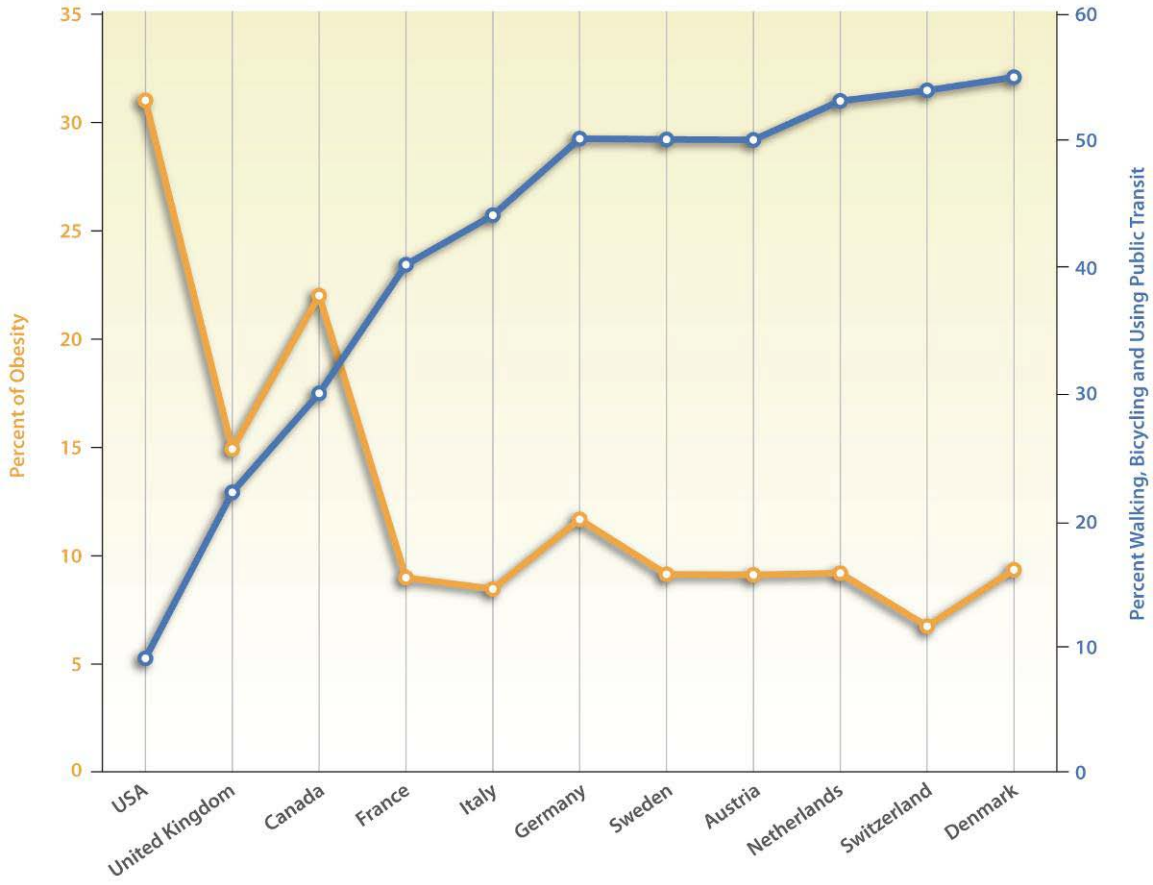


Figure 24 – Bicycling and Obesity Rates[3]

In addition to individual health benefits, fiscal benefits reward the entire community through a reduction in health care costs and lost days of work. A report prepared for the Centers for Disease Control and Prevention in the United States found that the annual per capita cost of building and maintaining bicycle trails was $209.28, whereas the per capita annual direct medical benefit of using the trail was $564.41. This indicates that every $1 spent on building bicycle facilities returns $2.94 in medical benefits.[4]

3. Pucher and Dijkstra, "Promoting Safe Walking and Cycling to Improve Public Health, Am Journal of Public Health, September 2003.
4. Wang, Macera, Scudder-Soucie, Schmid, Pratt, and Buchner. 2005. A Cost-Benefit Analysis of Physical Activity Using Bike/Pedestrian Trails. Health Promotion Practice 6(2) 174-179.

Environmental Benefits

Bicycling produces significant benefits to air quality. According to the World Watch Institute, a four mile bicycle trip prevents nearly 15 pounds of airborne pollutants. Measuring environmental improvements by reduction in greenhouse gases allow easy measurement and tracking of real benefits. Sacramento County DOT should roll this measurement into bicyclist counts and intercept survey efforts.

Economic Benefits

With the increasing expense of gasoline, bicycling can be a more economic mode of transportation for Sacramento County residents than driving a vehicle. By encouraging the use of bicycles, residents will save money on gas and then spend it elsewhere in the local economy. Encouragement programs in conjunction with high gas prices can help motivate people to bicycle.

Building local pride and international recognition for Sacramento County's bicycle facilities and events will likely increase the attraction of the county for tourists interested in bicycling, as well as conferences, bike races, and other bicycle related associations. The Tour of California is recognized as one of the premier road bicycling races in the United States. The race is increasingly becoming an international stage race and has attracted millions of visitors to the state. The County of Sacramento has hosted race stages during the past two years and the County's elected officials recognize the importance of bringing large races to the area.[5]

Bicycling tourism can benefit Sacramento County directly by bringing in tourism revenue, thus enhancing the county's reputation. A study of trail riders in Victoria, Canada found that bicycle tourists spend an average of 258 Canadian dollars per day when they travel specifically to this destination. The study counted 8,500 riders; in all, bicycle tourists brought 2.3 million dollars and the equivalent of 21 full time jobs to the local community per year.[6]

Community/Quality of Life Benefits

Fostering conditions where bicycling is accepted and encouraged increases a community's livability from a number of different criteria that are often difficult to measure but nevertheless important. Social health and pollution reduction have been previously discussed, but here is another facet: people on bicycles are more likely to talk, interactions are made on a more human level, and families can enjoy time together in a healthy manner.

5. http://www.amgentourofcalifornia.com/Route/cities/Sacramento County.html
6. http://www.bv.com.au/change-the-world/10446/

WHY EDUCATE BICYCLISTS?

In Sacramento County, bike collisions tend to be a result of improper riding/driving behavior. Table 17 lists the most common bicycle crash types. When information about safe and proper bicycling is readily available, the majority of bicyclists can learn and follow the rules of the road. Increased safety and the reduction of bicycle collisions are the most important benefits of programs to educate bicyclists and drivers. One of the Bicycle Master Plan's stated goals is to improve safety by reducing the number of bicycle collisions. The League of American Bicyclists offer nationally recognized certification for bicycle education instructors (League Certified Instructors) with workshops geared toward both adults and children.

TABLE 17: AUTOMOBILE/BICYCLE CRASH TYPES

Crash Type	Fault	Frequency
Riding on the wrong side of the road	Bike	14%
Left turn in front of cyclist	Auto	13%
Right turn in front of cyclist	Auto	11%
Left turn from the right side of the road	Bike	11%
Failure to yield from driveway	Auto	9%
Running a stop sign or signal	Both	8%
Running a stop sign or signal	Both	8%
Opening car door into path of cyclist	Auto	7%
Failure to yield from driveway	Auto	6%
All others		13%

Note: A 1990s Informational Guide (FHWA-RD-96-104) reported that riding on the wrong side of the road is the most common bicycle collision with vehicles followed by left and right turning vehicles.

Source: Alta Planning + Design, 2009

Educating bicyclists, pedestrians, and drivers about safe road use practices is imperative in reducing roadway injuries and fatalities. Bicycle safety education can be divided into two major categories:

- Developing safety awareness by providing information to the public through outreach channels such as media campaigns, brochures, and Web sites.
- Developing programs that teach specific bicycle handling and traffic maneuvering skills through classroom instruction combined with practical on-bike training.

ENCOURAGEMENT PROGRAM

Branding and Adoption of Official Program Logo

Branding, the consistent use of a logo or symbol is frequently used to aid in recognition of facilities or products either belonging or related to an agency or club. To achieve wide recognition and awareness of the bicycle system to visitors and residents of the county, Sacramento County DOT should formally adopt a "Sacramento County Bikes!" logo. The County should place this logo on bicycle signs, Web sites, brochures, billboards, system signage, maps and other promotional items distributed to the general

public. This logo could be closely associated with Sacramento Area Council of Governments' (SACOG) "May is Bike Month" logo.

Media Awareness Campaigns

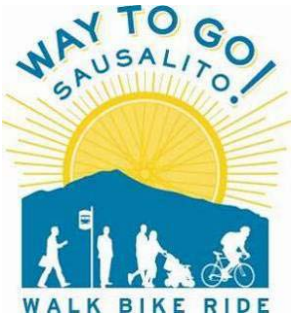
The purpose of general media campaigns is to educate the general public about the rights and responsibilities of bicyclists and motorists and to improve the overall perception of bicycle transportation. These campaigns can include: printed brochures, maps, stickers, posters, radio and television ads, events, mailings, online information, billboards, and ads posted on public transit vehicles, bus stops, and stations. Each of these tactics can encourage bicycling, while building a fundamental awareness about bicycle safety.

While a general theme for a media campaign could include the familiar "Share the Road," more specific slogans such as "Watch the Door Zone" encourage drivers to open car doors with caution to avoid "dooring" collisions with bicyclists. Additionally, the slogan provides a direct message to both cyclists (stay out of the door zone) and motorists (look before opening your door). Associated images for a "Watch the Door Zone" campaign would reduce confusion over where bicyclists should and should not be riding. Sacramento County DOT should implement campaigns using images and language that resonates with varied demographic groups. Campaigns should appear in English, Spanish, Russian, Hmong, and any other languages deemed necessary.

Electronic and printed educational materials using text and graphics, as appropriate, can educate people about the Sacramento County's official bike network, secure bicycle parking, bicycle shops and rental locations, traffic laws, and safe bicycling techniques. The County should explore innovative techniques such as using private business funds to distribute bicycle-safety materials in exchange for advertising and involving celebrities to generate wider appeal. In addition to general bicycle transportation awareness, outreach campaigns should also educate the public about the proper meaning and use of specific bicycle-facilities.

Individualized Social Marketing

In the United States, many cities are increasingly interested in an emerging type of transportation demand management program based on individualized socialized marketing. The first such program was created in Perth, Australia and named TravelSmart®. Several communities, including Portland, Oregon and Alameda, California, have planned and implemented similar individualized marketing programs aimed at shifting residents' travel modes away from drive-alone trips. Marin County is currently undergoing a similar program. This type of marketing program has been proven successful to increase bicycle mode share and integrate many other marketing and promotional programs into one strategy.



Way to Go Sausalito! is an individualized social marketing program to increase the use of nonmotorized transportation

Bicycle Repair Training

To help residents get out on the road bicycling, or to rehab the old bike that is sitting in their garage, bicycle repair training is a positive encouragement program. To enact this type of program, funding goes to a local organization, firm, or institution to develop a series of bicycle repair/training classes. Potential recipients include non-profits and local bicycle shops. Funding is used to hire additional training staff, promotion for the program, and repair classes.

Bike Rides with Legislators

Group bicycle rides are a great way to help encourage new users, and including celebrities can also motivate new bicyclists. Since Sacramento County is home to the state capital, celebrities could include state politicians. The County could work with local advocacy groups to lead bicycle rides with these local celebrities on state-funded bicycle routes, with emphasis on encouraging new bicycle users.

Public Service Announcements

Public Service Announcements are an important part of creating awareness for bicycling. They are an effective way to reach the general public via TV, radio, or print media and reinforce other education and outreach messages. A well-produced pubic service message can be memorable and effective. Following are example messages that bicycle-focused public service announcement campaigns could address:

"What If?"	Encourages residents to try bicycling for transportation or exercise
"Look Right, See Right"	Reminds drivers to look over their shoulder before changing lanes
"See and be Seen"	Encourages bicyclists to use lights at night
"Wrong Way"	Reminds bicyclists not to bicycle against traffic

Sacramento County DOT should consider developing public service announcements covering the subjects listed above and add additional topics to their library as issues arise.

Employer Incentives

Many people will commute by bicycle only if their workplace conditions support the activity. In addition to structural facilities such as quality long-term bicycle parking and showers and lockers, government or employers can provide several policy incentives. Transportation Management Associations (TMAs) can provide support to the County. Some incentives that have shown success in a variety of work environments include:

- Offer discounts at bike shops.
- Subsidize bicycle repair.
- Host special events such as barbeques with information and raffle drawings.
- Encourage friendly competitions, such as Sacramento Bike Month, that publicize firms' commuting habits and provide weekly drawings for bicycle commuters.
- Provide giveaways, such as a bicycle "starter kit," which might include a water bottle, patch kit, reflective stickers, and instructions to obtain a bike map.
- Inform employees about bicycle commuting with weekly brown bag discussions or a Web site.
- Coordinate a "bicycle buddy" system in which another employee rides to work with a new commuter, providing advice, information, and moral support.
- Sponsor recreational or fitness rides at lunchtime or after work, where employees can socialize

and ride together.

- Acknowledge people who bike to work regularly with prizes.
- Give cash back to bicyclists who do not use an employee parking space.
- Offer flextime or a longer grace period for bicycle commuting.
- Monitor the program's progress with a newsletter and established company goals.
- Offer cash incentives to frequent commuters.
- Provide "Smart Cycling Clinics" taught by a League Certified Instructor (LCI) from the League of American Bicyclists.

Employer Recognition

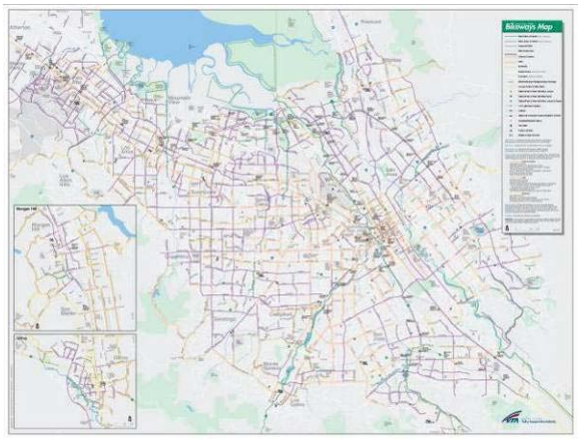
Employer recognition programs take place when public agencies work with area businesses and help train, support, and recognize those that encourage employee and visitor bicycling. This type of program may include a variety of participation incentives:

- Bike-friendly business audit program
- Annual bike-friendly business certification program
- Assistance with bike parking
- Cash or credit at a bike shop
- Staff time and/or financial support for building facilities and creating incentives
- Discounts for customers who arrive by bicycle
- Public recognition of bike-friendly businesses on a bike map or elsewhere

Printed Bicycle Maps

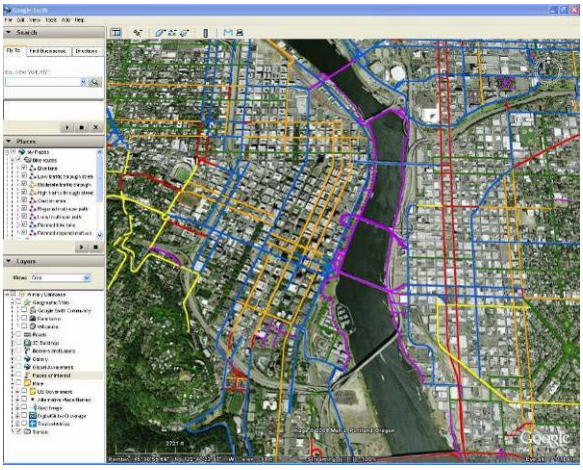
Printed maps can provide a wealth of information to riders. They can show designated pathways, streets with traffic calming treatments, local bike stores, bicycle rental locations, and shower and storage facilities. Unlike an Internet map or printed poster, riders can keep the map with them during rides.

Maps can be printed on several different qualities of paper, ranging from lightweight newspaper-grade stock to more durable tear-resistant and water-resistant versions. This allows the map provider to issue one version of the map for free while recovering printing costs with the other. Riders can buy the map at or near cost or print the map for free online. Employers and bicycle shops can provide maps for free as an encouragement activity or they can pay for advertising on the maps, subsidizing development and printing costs.



The Santa Clara County Transportation Authority's Bike Map is a folded 26.5"x20" folded map for bicyclists

Currently, SACOG has an online version of the County's bike map on the www.sacregion511.org Web site. The County should continue coordinating with SACOG to update this online resource with the construction of new facilities. Enhancing the map so it includes more features, like route and distance information, would benefit all users.



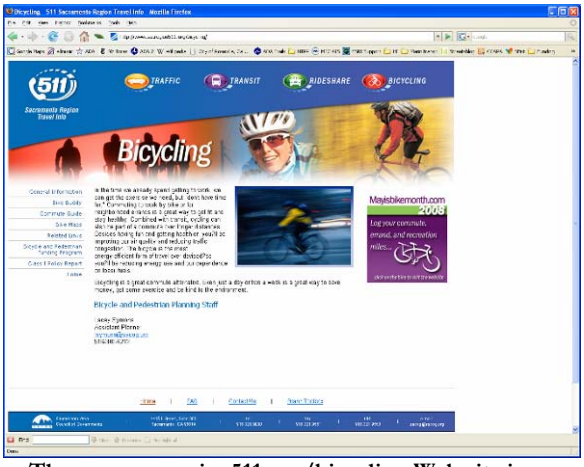
Portland Oregon's Regional Government, Metro has a downloadable Google Earth file that includes the region's bike facilities

One-Stop County Bicycling Web Site

Many bicyclists or potential bicyclists do not know where to learn about laws, events, maps, tips, and biking groups. Sacramento County DOT should continue its coordination with SACOG to develop the "one stop" Web site aimed at providing a variety of bicycle-related information and links for Sacramento County. The site, www.sacregion511.org/bicycling, has some information, including the map previously described. This Web site could link with the Sacramento County DOT's Web pages as well.

The 511 Web site could include additional information, such as:

- Information about current Bicycle Network projects
- Links to laws and statutes relating to bicycling
- The Department of Motor Vehicle's "Safety Tips for Bicyclists and Motorists"
- California Vehicle Code laws pertaining to bicyclists
- Information about bicycling events (rides, classes, volunteer opportunities)
- A list of local bike shops, including phone numbers and addresses
- Relevant phone numbers for reporting road hazards and numbers to call to request bike rack installation
- Links to other bicycling resources, including the Web site of the Sacramento Area Bicycle Advocates (SABA)



The www.sacregion511.org/bicycling Web site is an excellent resource for bicyclists in Sacramento County

All Web site content should be continually reviewed.

Web Trip Maps, Planning and Cycle Resources

Online maps are becoming increasingly viable with improvements made to Internet service and data within the last five years. "Map Quest" type route finding services specific to bicyclists occur with increasing frequency. Features can include route choice based on parameters such as scenery, topography, and maximization of bike facilities; points of interest; GPS interactivity to map and display routes; and inclusion of health information based on ride statistics. Customization of online tools allows varied uses, including an individual fitness tool, display of varied bicycle routes, and a public improvement tool allowing people to identify locations where maintenance is needed. Some sites even allow users to create and store routes using online maps and Google Earth imagery to share with other interested parties. As previously mentioned, the www.sacregion511.org/bicycling site has a map of bicycle facilities in the County, and SACOG plans to create an online bikemapper that integrates many of these features.

Bike Races

Bicycle races come in all sizes, from local community-based youth races to major international races. Races at all levels draw interested riders and spectators from the community and surrounding areas and can generate excitement and ownership for the community sponsoring the race. These events can also serve as generators of fiscal activity within the host community.

The Tour of California has become one of the premier national and international stage races. Held early in the professional racing season, the event is a proving ground for both domestic US and elite international teams to prepare for the high-profile European classic and stage races. The race ended in Sacramento County in both 2007 and 2008, attracting thousands of visitors to the county. The winner of both years, Levi Leipheimer, lives in Santa Rosa, California, a short distance from Sacramento County. Continual support of the Tour as well as a wide range of local races can make the county and surrounding area a premier destination for road racing.

The Amgen Tour of California is an excellent bicycle encouragement opportunity in Sacramento County

Hosted Bicycle Challenges

Part of SACOG's sponsored "May is Bike Month" is the Million Mile Bike Challenge. This program sets a goal for residents of the Sacramento Region to bicycle one million miles. The County should work with SACOG to further promote these programs, expanding these challenges to other months or with the completion of new bike facilities. These types of programs motivate bicyclists of all ages and skill levels.

Health Promotion

Bicycling offers a means for residents to maintain a physical and healthy lifestyle. Studies show that people are attracted to bicycling because they want to lose weight or stay in shape.[7] The County of Sacramento can take advantage of this by strategically marketing bicycling as a way to a healthy lifestyle. The County can take an active role by launching a "Bicycling and Health" campaign or form a task force

7. Liliana Gonzalez, et al. (Feb. 2004). 2002 Bicycle Transportation User Survey; Developing Intermodal Connections for the 21st Century. University of Rhode Island Transportation Center. URITC Project No. 536182.

that includes area advocates and health officials. Bicycle friendly events, such as Car-Free Days, Earth Day, and Bike to Work Day, can also be used to promote bicycling as a healthy activity. These programs apply to Policy 2-5 B of this Plan, for the County Department of Health and Human Services to decrease obesity rates through a bicycle campaign.

Table 18 summarizes the information presented in this section.

TABLE 18: SUMMARY OF PROPOSED PROGRAM ELEMENTS AND TARGETED USERS

Program Elements	Targeted Audience	Potential Constraints	Cost	Cost Assumptions
Adoption of Official Bike Program Logo	General public	None	$500 to $10,000	• Low cost for in-house and simple logo design • Higher cost for a complete graphics package from a graphic design firm
Media Awareness Campaigns	All bicyclists, motorists, pedestrians	Ads will need to be translated to additional languages	$3,000 to $50,000	• 0.25 FTE to coordinate program • Staff time for message creation • Purchasing of ad space
Individualized Social Marketing	Recreational bicyclists, Potential commuters	Sacramento County may not currently have sufficient bicycling infrastructure to support this type of program.	$50,000 to $200,000	• 0.25 to 2.0 FTE • Materials development • Printing/mailing of materials
Public Service Announcements	General public	None	$5,000 to $25,000	• 0.25 FTE to coordinate program • Development of message • Creation of PSA • Purchasing ad space
Employer Incentives	Commuters	Employers may protest spending additional money on their employees	$25,000 to $75,000	• 0.25 to 1.0 FTE to coordinate program • Printed materials • Incentives and subsidies
Printed Bicycle Maps	All bicyclists	Changes to road and bicycle network will make map obsolete; maps may be costly to update.	$25,000 to $50,000	• Mapping of existing and proposed bike routes and infrastructure • Printing costs of maps
One-Stop County Bicycling Web site	Current and future bicyclists	Not all residents may have access to the Internet; information should also be made available in an alternate format.	$5,000 to $15,000	• 0.25 FTE to create and update Web site

TABLE 18: SUMMARY OF PROPOSED PROGRAM ELEMENTS AND TARGETED USERS

Program Elements	Targeted Audience	Potential Constraints	Cost	Cost Assumptions
Web Trip Maps, Planning and Cycle Resources	Commuters, tourists, recreational riders	Not all residents may have access to the Internet; information should also be made available in an alternate format.	$5,000 to $30,000	• 0.10 FTE to coordinate printing and distribution • Printing costs of materials
Bicycle Races	Recreational and competitive riders, including children, tourists	May be costly to establish and maintain. Costs can be offset by sponsorship dollars. Initially, few riders may choose to participate	$20,000 to $60,000	• 0.25 to 2.0 FTE to organize and promote race • Permits • Prizes
Health Promotion	General Public	None	$5,000 to $30,000	• 0.10 to 0.5 FTE • Coordination of meetings • Promotion at community events

Source: Alta Planning + Design, 2009

BICYCLE AND TRAFFIC SAFETY EDUCATION PROGRAMS

Bicycle and traffic education programs seek to reduce collisions and help people feel more safe and comfortable on a bike. These programs include elements focused at motorists to improve their understanding of the rights of bicyclists on the road. They also can focus on educating bicyclists of the proper rules of the road. Simultaneously, education campaigns should target the general public and specific groups that have unique education needs or play a greater role in perpetuating collisions and other dangerous situations. Key target audiences include drivers, current and potential bicyclists, students, children and families, school personnel, and employees.

Educational programs for bicyclists and motorists complement one another. As the bicycle network in Sacramento County expands, riders of all abilities will need education about the system. Descriptions of comprehensive bicyclist and motorist programs are in the following sections.

Sacramento County DOT Internal Education Campaign

Sacramento County DOT should establish an internal educational campaign to teach staff members about bicycle and motorist safety. These campaigns can be coordinated through national bicycle and pedestrian courses, such as the National Highway Institute's, or the Caltrans Non-Motorized transportation course. Additionally, an internal training could be held jointly between a transportation planner with bicycle expertise and a League Certified Instructor to educate County staff on issues pertaining to cyclists on the roadway. On-road training courses provided by the League of American Bicyclists could also be offered as an option to County staff to further increase awareness of how to better incorporate cycling needs into roadway design. County staff from different departments, including transportation and planning could attend the training and learn more about bicycle projects and program implementation.

In addition to in-class training, Department of Transportation–led poster sessions could include topics about the interaction between bicyclists, pedestrians, and motorists, "Share the Road" logos and slogans, and other marketing messages for bicyclists and motorists. Design, production, and display of these posters in existing government buildings should incur only minor costs. If these posters prove effective, Sacramento County DOT could provide these posters to other bicycling groups that want to post them, including clubs and bicycling shops.

Kids learning the rules of the road at school

Education of School Children

Expansion of the Sacramento County DOT Care About Neighborhoods program (CAN) will ensure that all school-age children receive education about proper bicycling. Sacramento County DOT can work with Sacramento Area Bicycle Advocates (SABA) and local school districts to expand the CAN program (currently, SABA does not have staff or financial resources for this type of program). Yearly evaluations should occur in the form of surveys on bicycling frequency and attitudes toward bicycling, reductions in traffic violations, and collisions involving bicyclists. Teaching children to bicycle at an early age encourages them to bike safely and responsibly. Additionally, the CAN program could be opened or expanded to include people who are interested in learning how to bicycle but who are not necessarily school-age.

Adult Bicycle Education

Bicyclists are frequently observed riding the wrong way (against traffic) on roads or footpaths in Sacramento County. Some bicyclists ride in this manner because they feel safer looking at oncoming traffic, while others do so because it offers the most direct way to reach a destination on one side of a wide, busy street. Regardless, wrong-way riding is one of the leading causes of bicycle collisions at side streets and driveways, because motorists are generally looking in the opposite direction for oncoming traffic.

Providing information regarding proper bicycling habits can encourage bicycle commuters to follow the rules of the road and have proper equipment such as reflectors, lights, and helmets, which can reduce collisions. This information can be dispersed through work-related programs, in conjunction with other forms of incentives and encouragement, or it could be provided by the County through brochures, bike fairs, guided tours, or personal communication with Sacramento County DOT staff. SABA has an existing program to educate adult bicyclists. The County should work with SABA to expand this program countywide.

General Adult Bicycle Safety Education

The purposes of general bicycle-safety classes are to educate the general public about the rights and responsibilities of bicyclists and motorists and to improve the overall perception of bicycle transportation. These programs can be taught at community colleges, cultural centers, libraries, and any other place open to the public. The Sherriff's Department and California Highway Patrol (CHP) could require attendance at this type of education course in lieu of or in addition to monetary fines for disobeying bicycle and vehicle traffic laws. Additionally, employers could offer incentives (such as paid compensation for attending the class), to employees enrolling in these courses of their own volition. Course material covered could vary but should be tailored to the specifics of the audiences. For example, course content

for school age children would differ from adults. Example topics for inclusion in adult bicycling classes include:

- Helmet fitting demonstrations and tips including a discussion of how helmets increase safety.
- Visibility techniques for seeing and being seen.
- Bicycle maintenance and repair.
- Safe stopping.
- "Door Zone" awareness.
- Traffic maneuvers: lane positions, safe turns and proper use of roundabouts.
- Riding predictably while scanning for conflicts and traffic.
- Relevant traffic laws.
- Bicycle commute skills: inter-modal transit; load distribution.

http://sfmta.com/cms/bsafe/images/Bike-Night-web_000.gif

The City of San Francisco developed marketing materials for night bicycling at standard time in the fall

"Lights On" Safety Campaign

Crash analysis and bike count results indicate that a substantial number of bicyclists ride at night and that many of them are not illuminated. Many of the bicycle collisions reported in Sacramento County likely result from motorists having difficulty seeing bicyclists at night. A "Lights On" campaign, encouraging and promoting the use of lights and reflectors, is an effective way to reduce nighttime traffic collisions in areas of low light use.

Cities such as San Francisco have successfully implemented similar campaigns. Components of the campaign include advertisements in public places encouraging light and reflector use, events such as nighttime lighted bike parades to raise awareness, and promotional distribution of free bike lights. The campaign should also include informational resources, such as Web sites or brochures, that explain the safety implications of using lights when bicycling at night; list resources for purchasing bike lights; and list current laws and applicable fines regarding the use of lights on vehicles at night.

Share the Road Campaigns

Share the road programs seek to remind road users that both bicyclists and motor vehicles are legal road users. While the laws for bicyclists and passenger vehicles differ, all groups share the responsibility to use the road safely and respect the rights of others to use the road.

The Share the Road sign is included in the California Manual on Uniform Traffic Control Devices

Programs using the "Share the Road" language have occurred in many locations including Portland, Chicago, Boston, New York, and Atlanta. Some cities, including Tempe, Arizona and many Hawaiian cities also post "Share the Road" signs on county streets. The phrase appears in driver education classes, newspaper articles, billboards, and advertising campaigns. In many cases the government initiates the program.

Share the Path Campaign

This program consists of conducting an annual Share the Path checkpoint series to educate bicycle path users about their shared rights and responsibilities. Volunteers provide literature in a friendly atmosphere about ways that path users can safely and conscientiously share the space with bicyclists and pedestrians. Flyers can contain California Vehicle Code information, Codes of Conduct for bicyclists to foster respect for each other, plus safety and courtesy tips. Free water and energy bars could also be offered to entice bicyclists to stop.

Wrong-Way Signs in Walnut Creek, CA

Wrong-Way Signs

The County may want to consider additional signage on bikeways with high levels of wrong-way riding. In 1998, the City of Walnut Creek noticed a high number of accidents caused by bicyclists riding the wrong way. Using funds from an Office of Traffic Safety Grant, the City installed "Wrong Way" signs on the backs of bicycle signs. As a result, the City saw a decrease in accidents. The County may want to consider installing similar signs on bikeways where wrong-way riding regularly occurs.

Safe Routes to School Program

Safe Routes to School programs began in the late 1990s and early 2000s as grassroots efforts in several communities throughout the US. One role that safe routes programs can play for their communities is integrating health, fitness, traffic relief, environmental awareness, and safety through application of the multiple principals. The goals of Safe Routes to School programs are typically to:

- Reduce traffic congestion around schools
- Increase physical activity for children and youth
- Foster a healthier lifestyle for the whole family
- Create safer, calmer streets and neighborhoods
- Improve air quality and a cleaner environment

SafeRoutes
National Center for Safe Routes to School

The National Safe Routes to School Center provides encouragement, education, enforcement, engineering, and evaluation materials for programs at www.saferoutesinfo.org

By employing a range of programs and engaging participants in a variety of activities, the program maximizes the number of people who will hear, understand, and apply the lessons learned. This multi-faceted approach also allows involvement by many individuals, departments, and volunteers. Safe Routes to School programs are often broken down into the five E's:

- **Encouragement** – Encouragement programs are exactly what they sound like: activities designed to generate excitement and interest in walking or biking to school. Elements generally include competitions, walking/biking school buses, and small gifts for reaching desired goals.

- **Education** – In Safe Routes to School programs, the entire community near the school receives education, including students, drivers, parents, teachers, and neighbors. The material covered and the method of conveying the information depends on the audience; while students may learn how to cross the street, material sent to parents may include tips for safe driving while picking up and dropping off children.

- **Enforcement** – Enforcement includes strategies to deter unsafe behaviors of drivers, bicyclists, and pedestrians and encourages all road users to obey traffic safety laws and share the road. Enforcement programs often include local police involvement.

- **Engineering** – These approaches improve the physical infrastructure near a school to make walking and bicycling safer. Engineering projects can include design, implementation, and maintenance and are generally considered a prerequisite for walking and bicycling.

- **Evaluation** – Evaluating the success of a program helps determine which programs are most effective and helps to identify ways to improve programs. Evaluation occurs subsequently to the initial four E's.

Safe Routes to School programs generally start with a community trip to the area around the school to identify problems and talk about low-cost, short-term solutions along with high-cost longer-term solutions. The traffic engineering agency or public works department of the school's location generally perform the engineering improvements. For safe routes to school improvements, costs vary.

Table 19 summarizes the information presented in this section.

TABLE 19: SUMMARY OF PROPOSED SAFETY & EDUCATION PROGRAMS

Program Elements	Targeted Audience	Potential Constraints	Cost	Cost Assumptions
Sacramento County DOT Internal Education Campaign	DOT staff, visitors to government buildings, employees of other government departments	General public will likely not see posters or materials	$500 to $10,000	• 0.10 to 0.25 FTE to coordinate campaign • Instructor costs • Design and production of posters
Education of School Children	Families, children, students	Adoption of school curriculum may make inclusion of mandatory bicycle education difficult	$15,000 to $200,000	• 0.25 to 1.0 FTE to coordinate program • In-class instruction • Annual evaluation
Adult Commuter Bicycle Education	Recreational riders, commuters	Recruiting adults to classes	$5,000 to $25,000	• 0.25 to 0.5 FTE to coordinate education • Education events • Community outreach • Printed materials
General Adult Bicycle Safety Education Programs	Recreational riders, commuters, motorists	Recruiting students and adults to classes, providing helmets when necessary, translating languages for Spanish speakers or other groups	$3,000 to $10,000	• 0.10 to 0.25 FTE for coordination and instruction • Printed materials
"Lights On" Safety Campaign	Commuters, road racers, recreational riders	May need to be repeated every fall and winter to remind bicyclists about riding at night	$5,000 to $20,000	• 0.25 to 0.5 FTE to coordinate program • Design of posters and printed materials • Purchasing of ad space • Purchasing of lights
Share the Road Campaigns	Commuters, recreational riders, motorists, transit drivers, potential riders	Current attitudes of dominant motorists may not take this campaign seriously if not accompanied by enforcement actions	$3,000 to $20,000	• 0.10 FTE to coordinate sign locations • Purchasing of signs • Posting of signs
Safe Routes to School Program	School Administrators, parents, students	Large geographical area with many schools for implementation. Need collaboration from districts and schools for successful program	$10,000 to $2 million	• 0.25 to 2.0 FTE to coordinate program • Incentives • Education and instruction • Engineering planning • Construction • Evaluation

Source: Alta Planning + Design, 2009

ENFORCEMENT PROGRAMS

An enforcement program's requirements differ slightly from the education and encouragement campaigns due to the necessary involvement of the police in these activities. Because of necessary cooperation between multiple governmental departments, organization and clear communication becomes increasingly important. The following suggestions represent possible ways for Sacramento County DOT to interact with the Sacramento County Sherriff's Department and CHP, prioritize enforcement activities, and receive valuable statistics regarding collisions that can help determine targets for future education and encouragement programs. In addition to these programs, Sacramento County DOT should work with law enforcement to highlight the importance of understanding and enforcing bicycling-related California Vehicle Codes into their regular training curriculum.

Moving Violations

Sacramento County DOT should actively work with the Sheriff's Department and CHP to create a program that focuses on enforcement of traffic safety laws directly affecting bicyclists. Appropriate parties at the Sacramento County DOT, Sheriff's Department, and CHP should work together to determine the priority for handing out citations to motorists and bicyclists. Priority for issuing citations should be given to motorist violations that most frequently cause collisions with bicyclists, such as failing to signal, failing to stop at a stop sign or light (especially when making a right turn), and passing too closely. Bicycle violations include riding on the wrong side of the street, running a stop sign or traffic signal, and riding without lights at night.

While enforcement is important in all parts of Sacramento County, locations in areas with high numbers of motorists, bicyclists, and pedestrians, or areas with frequent collisions, represent ideal locations for visible enforcement actions that can serve as both education and enforcement actions. By working with law enforcement officers to coordinate these locations, Sacramento County DOT can conduct field visits before and after enforcement activities to determine whether the actions have the desired, measurable effects. This sort of activity will allow Sacramento County DOT, the Sheriff's Department, and CHP to determine which types of enforcement activities achieve the best performance under various conditions and more effectively target future enforcement activities. Once this is achieved, priority for issuing citations should be given to motorist violations that cause the most frequent collisions with bicyclists.

When cited for riding without lights and/or reflectors, bicyclists should have the option to avoid a fine if they present evidence of properly equipping their bicycle within a reasonable time period, such as a "fix-it ticket" policy. This policy could also address the enforcement of other bicycle safety violations, such as properly operating bicycles and helmets on child bicyclists. Another policy option is for enforcement officers to give coupons for bicycle lights when a bicyclist is riding without a light. For example, police officers in Davis, California give 10 percent off the cost of a bike light coupons at local retailers when they see bicyclists without lights.

Citations issued for moving violations are bicycle-safety education opportunities. While proactive measures are best, classes to correct errant roadway behavior should be developed by Sacramento County DOT in partnership with law enforcement and offered at traffic school when deemed appropriate. Sacramento County's curriculum should focus primarily on bicycling skills, including bicycling in traffic, share-the-road concepts, and rights and responsibilities of both the bicyclist and the motorist. As an alternative to a fine for a bicycle-related violation, offenders might be given the option of enrolling in a traffic school program with an emphasis on bicycle issues. Such a program could also be an option for non-bicycle–related traffic infractions.

Sacramento County Sherriff's Department Education

Sacramento County DOT should work with the Sacramento County Sheriff's Department to provide bicycle traffic education to Sherriff's Deputies focusing on the rights and responsibilities of bicyclists and the practice of proper bicycle positioning techniques in traffic. Bicycle traffic education should be integrated into trainings for all Sacramento County Sheriff's Deputies. In addition to developing awareness of the challenges of maneuvering a bicycle in traffic, a bicycle safety training course should provide a list of guidelines to assist with bicycle-related collision reports. This helps ensure valuable documentation of information for public health studies regarding injury prevention. A League Certified Instructor should administer the bicycle safety training.

Bicycle-mounted police officers are more sensitive to bicyclists' rights and bicycle safety issues due to their increased understanding of the physical characteristics of bicycles, the relationship of bicyclists to motorists in traffic situations, and the challenges of bicycle operation in urban, suburban, and rural environments. As police departments have learned throughout the US, bicycle patrols are effective in dealing with crimes that take place where police cars cannot access.

Continue to Enforce Traffic Laws for Motorists and Bicyclists

The Sherriff's Department and CHP should continue to enforce applicable laws on bicycle paths and on-street bicycle routes. Specifically, this should occur at historically high-crash areas. Spot enforcement should be highly visible and publicly advertised. It may take the form of crosswalk stings; handing out informational sheets to motorists, bicyclists, and pedestrians; or enforcing speed limits and right-of-way at shared use path-roadway intersections. Based on County crash records, bicycle enforcement should focus on running red lights and stop signs, traveling at night without lights, failure to yield at driveways, and failure to look and signal on left turns.

Variable Speed Feedback Signs

Variable speed feedback signs are permanently mounted at specific locations. These devices show current vehicle speeds, speed limits and are programmable to flash and/or display a "slow down" message when vehicle speeds exceed a pre-set limit. The speed limit can vary depending on the time of day (e.g., for time-based school zones), special events, or other traffic conditions.

Variable Speed Feedback Signs show vehicle speeds in real-time as they pass the sign

Speed Radar Trailers

Speed Radar Trailers can be used to reduce speeds and enforce speed limit violations in known speeding problem areas. In areas with speeding problems, police set up an unmanned trailer that displays the speed of approaching motorists along with a speed limit sign. The trailer can be used as both an educational and enforcement tool. By itself, the unmanned trailer serves as effective education to motorists about their current speed in relation to the speed limit. As an alternative enforcement measure, the police department may choose to station an officer near the trailer to issue citations to motorists exceeding the speed limit. Because they are easily moveable, radar trailers are often used on streets where local residents have complained about speeding problems. If frequently left in the same location without officer presence, motorists may learn that speeding in that location will not result in a citation and increase their speeds.

Speed Radar Trailers are mobile devices for encouraging and enforcing slower vehicle speeds

TABLE 20: SUMMARY OF PROPOSED ENFORCEMENT PROGRAMS

Program Elements	Targeted Audience	Potential Constraints	Cost	Cost Assumptions
Moving Violations	All bicyclists and motorists	Staff time of Sheriff's Department to coordinate "hot spot" enforcement efforts	$3,000 to $20,000	• 0.10 to 0.25 FTE to coordinate program with Sheriff's Dept. • Evaluating effectiveness of enforcement through crash analysis of hot spot locations
Sacramento County Sherriff's Department Education	Police Officers	Retraining of current forces and development of new police protocol may be necessary	$1,000 to $5,000	• 0.10 to 0.25 FTE • Training of Sheriff's Deputies on bicycle rights and responsibilities • Bicycle crash report training
Variable Speed Feedback Signs	Motorists	May not be allowed on all roadways, depending on posted speeds	$5,000 to $20,000	• 0.10 FTE to coordinate location of signs and maintenance • Purchasing of variable speed feedback sign
Speed Radar Trailers	Motorists	Need to be accompanied part time by a police officer	$5,000 to $20,000	• 0.10 FTE to coordinate location of signs and maintenance • Purchasing of speed radar trailer • Police enforcement

Source: Alta Planning + Design, 2009

ENCOURAGEMENT AND EDUCATIONAL PROGRAM IMPLEMENTATION

The previous sections of this chapter provide various programmatic elements that target specific bicyclist groups. A successful comprehensive education, encouragement, or enforcement program will target multiple audiences and convey the messages for all audiences.

Successful Implementation of Encouragement Programs

Each of the programs above should include the following basic elements to achieve the highest rate of program success:

- A County staff member responsible for the oversight of all bicycle-related programs.
- Materials in languages commonly used in Sacramento County (i.e., English, Spanish, Russian, and Hmong).
- Multiple methods of accessing materials, such as Web sites, mass mailings, school programs, radio and television programs.
- Methodology and plan to review and refine strategy as necessary.

Bicycle Program Specialist

Implementing the Master Plan will involve actions and responsibilities that span several departments within Sacramento County DOT, as well as agencies and groups in Sacramento County, such as the Sacramento County Sheriff's Department, CHP, and various school districts. Sacramento County DOT should designate, hire, or contract a full-time individual to support the existing Alternative Modes Coordinator to serve as Bicycle Program Specialist – a person who is dedicated to implementing the County's Bicycle Master Plan. The Bicycle Program Specialist would understand the needs of bicyclists and would serve as a single point of technical oversight and coordination for all of the actions required for implementation of the Sacramento County Bicycle Master Plan programs.

Establishing a Bicycle Program Specialist position is a symbolic measure and helps demonstrate Sacramento County's commitment to becoming a bicycle friendly county. The size of the county and surrounding area can support a full-time Bicycle Program Coordinator, and the expected growth throughout the region will only increase the need for this position.

Requests for Proposals

Several Requests for Proposals should be issued to create new education, enforcement, and encouragement programs at the County. These could include:

- A general encouragement program, with attention to involving local businesses.
- A bikeway facilities design course for County DOT staff taught jointly by a transportation planner/engineer and League Certified Instructor.
- Several in-class and on-road courses in bicycle education for both children and adults (could target school children and local businesses), taught by a League Certified Instructor (could connect to a Safe Routes to School program).
- Education courses geared specifically for the Sacramento County Sherriff's Department and any drivers of county vehicles (i.e., maintenance, waste, and other fleets).

APPENDIX A:
PUBLIC WORKSHOP 1 RESULTS

APPENDIX A: PUBLIC WORKSHOP RESULTS

The Project Team held four public workshops during February and March 2008 in different locations of Sacramento County. The goals of the public workshops were to provide some background information to attendees and to gather input regarding bicycling destinations, bicycling and commuting routes, difficult connections, and potential bicycle improvements. Dates and locations of the public workshops were as follows:

February 14 – North Highlands

February 20 – Arden Arcade/Carmichael

February 21 – Rosemont

March 19 – Fair Oaks

Marketing for the public workshops included posting notices on the Bike Master Plan's Web site and the County's homepage, distributing flyers at county bike shops and at the AMGEN Tour of California, postings on various bicycling listservs, and providing the information to various agencies and organizations. Agencies and organizations included Sacramento Bike Hikers, Sacramento Area Bicycle Advocates (included in their newsletter), local Transportation Management Associations, public libraries, law enforcement (CHP, County's Sheriff Department), City of Sacramento's Bike Unit, neighboring jurisdictions, Environmental Council of Sacramento, Sacramento Bicycle Kitchen, Educational Institutions, non-profit organizations (WALK Sacramento, the Sacramento Transportation Equity Network), and health institutions (UC Davis Medical Center). Advertisements were also placed in the Sacramento Bee.

Nine people attended the North Highlands workshop, 24 attended the Arden/Arcade workshop, 19 attended the Rosemont workshop, and 22 attended the Fair Oaks workshop. Each workshop followed the same format: the Project Team presented an overview of the Bicycle Master Plan, and then participants divided into groups of six to eight people, each with a facilitator. The groups then marked up large-scale plotted maps of the County with the following information:

- Destinations in the county, including bicycle paths
- Bicycling commute routes
- Barriers or difficult connections
- Recommended improvements

More than 350 comments were collected from the four meetings' maps. Participants identified 180 difficult connections and proposed 138 connections/improvements. In addition to the maps, workshop attendees provided an additional 75 comments on cards.

The Project Team organized the notes into 10 categories (see Table A-1). As the table shows, the public had detailed insight for their vision for bicycling in Sacramento County. Most comments were regarding proposed routes or difficult connections. The majority of these routes are along major County arterials. Comments regarding improving these roadways and finding alternative routes for bicyclists were raised numerous times.

TABLE A-1:
FIRST PUBLIC WORKSHOP COMMENTS

Category	Number of Comments
1 – Bike Parking	7
2 – Bike Routes/Lanes	154
3 – Bridge	21
4 – Difficult Connection	138
5 – Education	2
6 – Enforcement	4
7 – Maintenance	15
8 – No bicycle detection	17
9 – Signage	13
10 – Trail	21
Total	**392**

Figure A-1 shows facilities marked on the maps at the public workshops and the relevant existing conditions or improvement recommendation. The map was used in the proposed bicycle facilities evaluation.

As noted from the additional comments received at the meetings, members of the public found the workshops fun and interesting. Also, attendees realized that many of the workshops' participants had the same concerns for difficult connections and improving the county's bicycling connections.

E-MAIL COMMENTS

The Sacramento County Bicycle Master Plan's public input effort also included an e-mail address for comments. This e-mail address was advertised on the workshops' marketing flyers, posted during the workshops' presentations, and provided on the project Web site. As a result, over 20 individuals sent e-mails, providing 86 additional comments. Table A-2 shows the categorization of these comments. Frequent comments included proposed routes/lanes, maintenance locations, and proposed trail locations. Maintenance refers to locations with cracks in the road or where pavement needs repaving. Roadways should be well maintained for bicycle use, especially along marked routes.

TABLE A-2:
E-MAIL COMMENTS

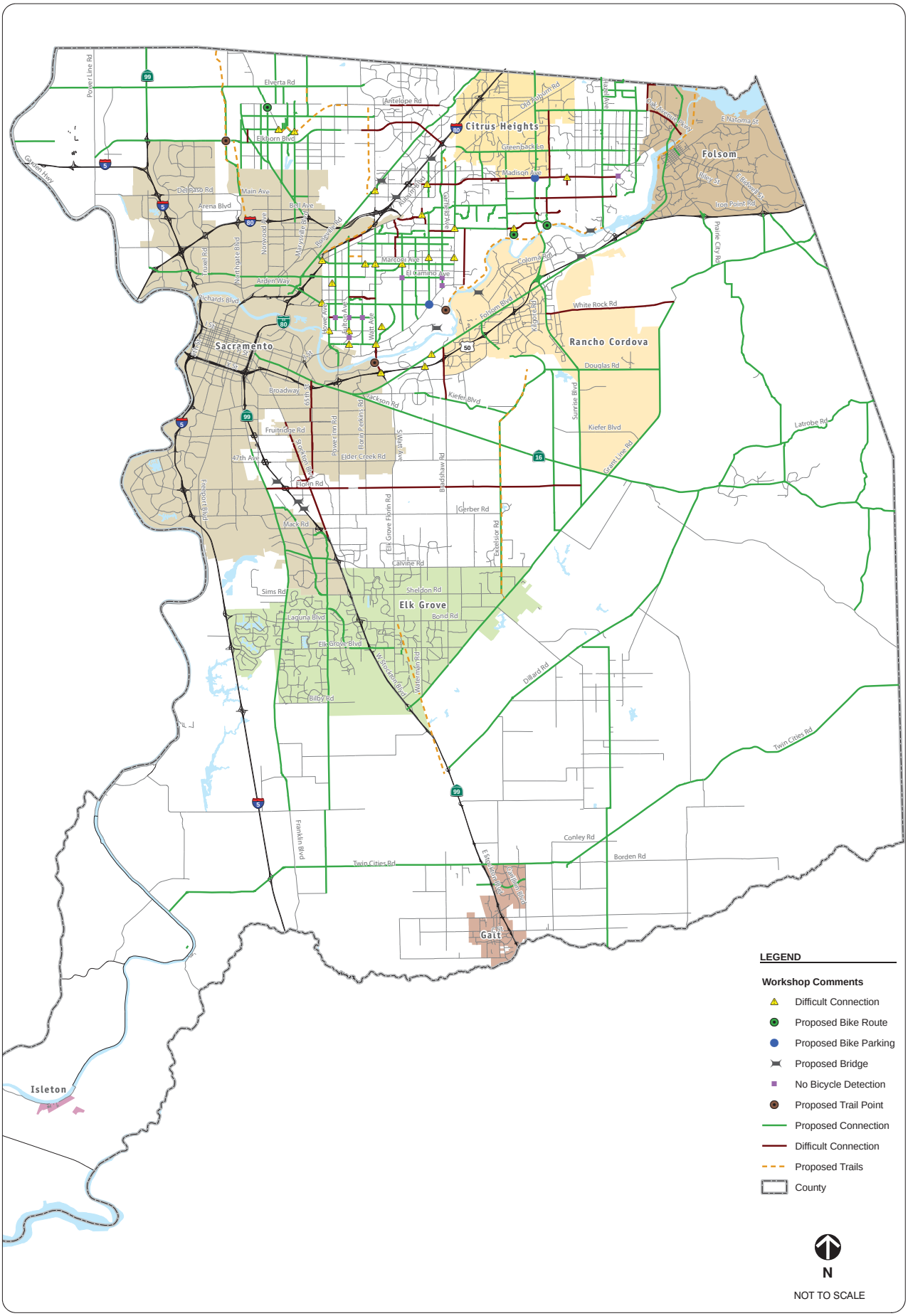
Category	Number of Comments
1 – Bike Parking	3
2 – Bike Routes/Lanes	16
3 – Bridge	4
4 – Difficult Connection	10
5 – Education	8
6 – Enforcement	6
7 – Maintenance	15
8 – No bicycle detection	3
9 – Signage	4
10 – Trail	17
Total	**86**

USER SURVEY RESULTS

Part of the public input process for the Bicycle Master Plan was a survey to gather bicycle use and preferences in the county. The survey was available online between January 22, 2008 and March 24, 2008. A copy of the survey is included in Figure A-2. Advertising for the electronic version of the survey occurred on the project's Web site and in Sacramento Area Bicycle Advocates' newsletter, and the URL for the survey was included on all of the public workshops marketing materials. Hard copies of the surveys were provided at all of the public workshops.

This Appendix includes charts of the surveys' results. The survey netted 528 responses from 58 ZIP codes. Figure A-3 in shows the number of respondents from each ZIP code who participated in the survey. Below are some of the surveys' results.

- The majority of survey respondents ride their bike for exercise and pleasure, followed by using their bike to commute to and from work (Figure A-4).
- Many respondents of the survey have an intermediate or high level of bicycling experience.
- The majority of respondents ride three to five days a week (Figure A-5).
- The largest deterrents to bicycling include a lack of bicycling facilities, cars driving too fast, and drivers not sharing the road (Figure A-6).
- The majority of survey respondents prefer off-street bicycle paths to all other bicycle facilities (Figure A-7).



PUBLIC WORKSHOP COMMENTS

FIGURE A-1

Figure A-2: Bicycle User Survey

Bicycle User Survey

Sacramento County Bicycle Master Plan

Sacramento County is currently updating the Bicycle Master Plan and we need your input! The goal of the plan is to make the county a more enjoyable place for you and your family to bike for recreation, to school, or to work. Filling out this survey will help us create a plan that meets your needs and desires. If you have additional information to share or questions about the process, feel free to contact Sacramento County through the contact information below. You can also link to the survey via the project website at: http://saccountybikeplan.webexone.com .

TELL US ABOUT BICYCLING IN SACRAMENTO COUNTY

Why and where do you bike? (check all that apply)

- ☐ For exercise/ health reasons
- ☐ For pleasure
- ☐ For shopping/ errands
- ☐ To get to work
- ☐ To get to school
- ☐ To get to transit
- ☐ I don't bike
- ☐ Other (describe) _____

How many days per week do you ride? _____

What is your zip code? _____

What is the average distance of your rides (one-way)?

- ☐ Under 2 miles
- ☐ 3-5 miles
- ☐ 6-10 miles
- ☐ 11-24 miles
- ☐ 25 and above

Where are your favorite places or routes to bike? Please be specific.

_____

_____

_____

_____

_____

_____

What prevents you from biking more often?

- ☐ Destinations are too far away
- ☐ Too many cars / cars drive too fast
- ☐ Drivers don't share the road
- ☐ I travel with small children
- ☐ No bike paths, lanes or bike routes
- ☐ I have to carry things
- ☐ Not enough time
- ☐ Insufficient lighting
- ☐ Bikeways/roads in poor condition
- ☐ Weather
- ☐ Other (describe) _____

Where are the most difficult places for you to bike and why? Where would you ride if you could and what prevents you from riding there?

_____

_____

_____

_____

Please rank your preference for bicycle facilities, on a scale of 1 to 4 (1 being most preferred and 4 being least preferred)

Off-street paved bike paths _____
On-street bike lanes _____
Bike routes _____
Unpaved trails or dirt paths _____

What can be done to encourage you to bicycle more in Sacramento County?

_____

_____

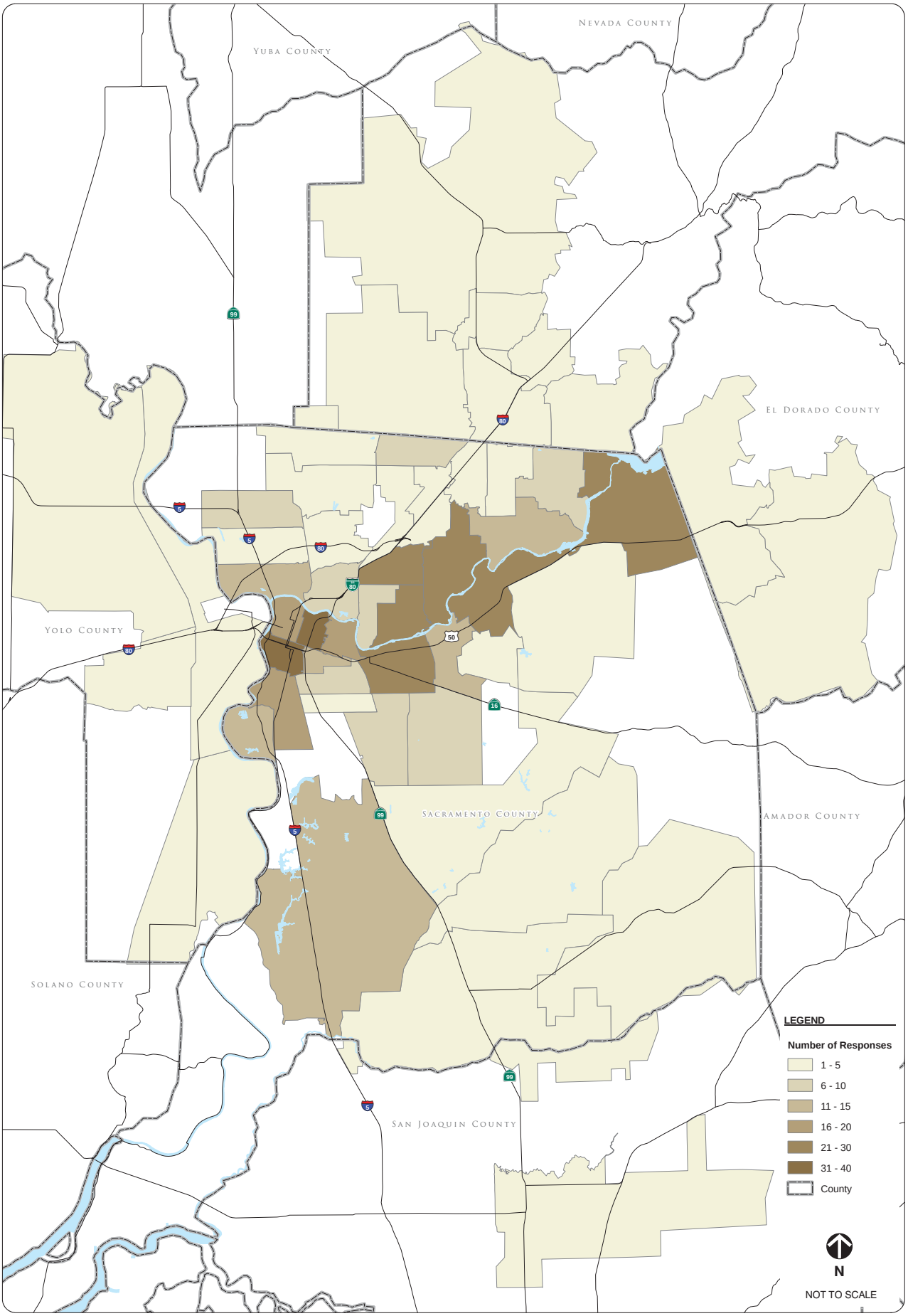
_____

_____

Email surveys and additional comments to:
comments@saccountybikeplan.com

Mail surveys to:
Alta Planning + Design
2560 9th Street, Suite 212
Berkeley, CA 94710

For more information, please visit the project website at:
http://saccountybikeplan.webexone.com



SURVEY RESPONDENTS' ZIP CODES

FIGURE A-3

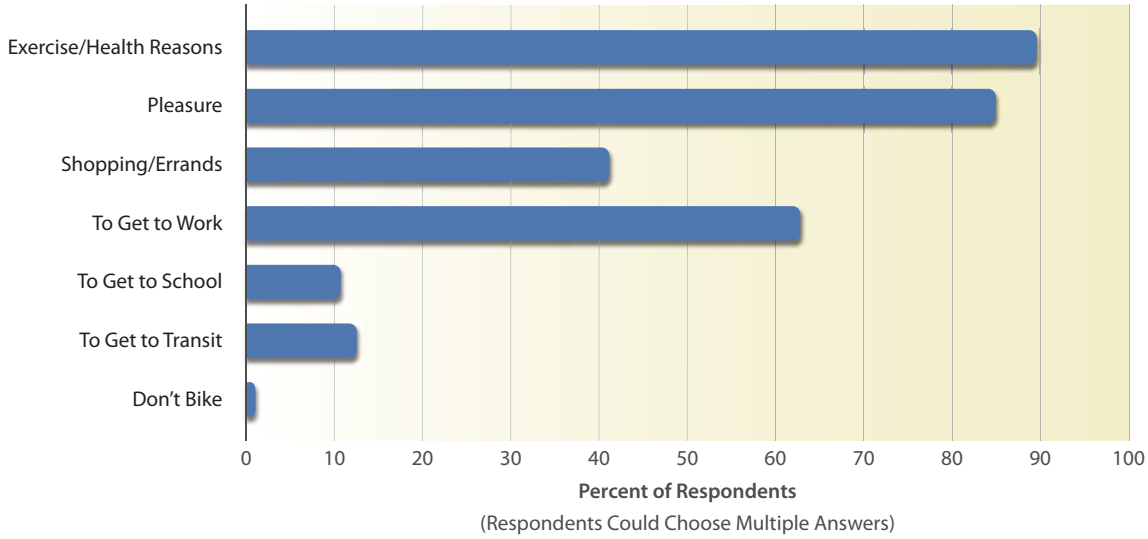


Figure A-4 - Why and Where Do You Bike?

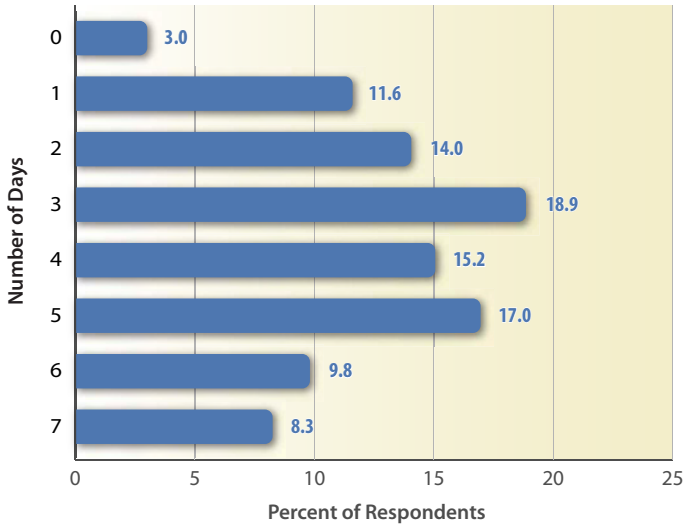
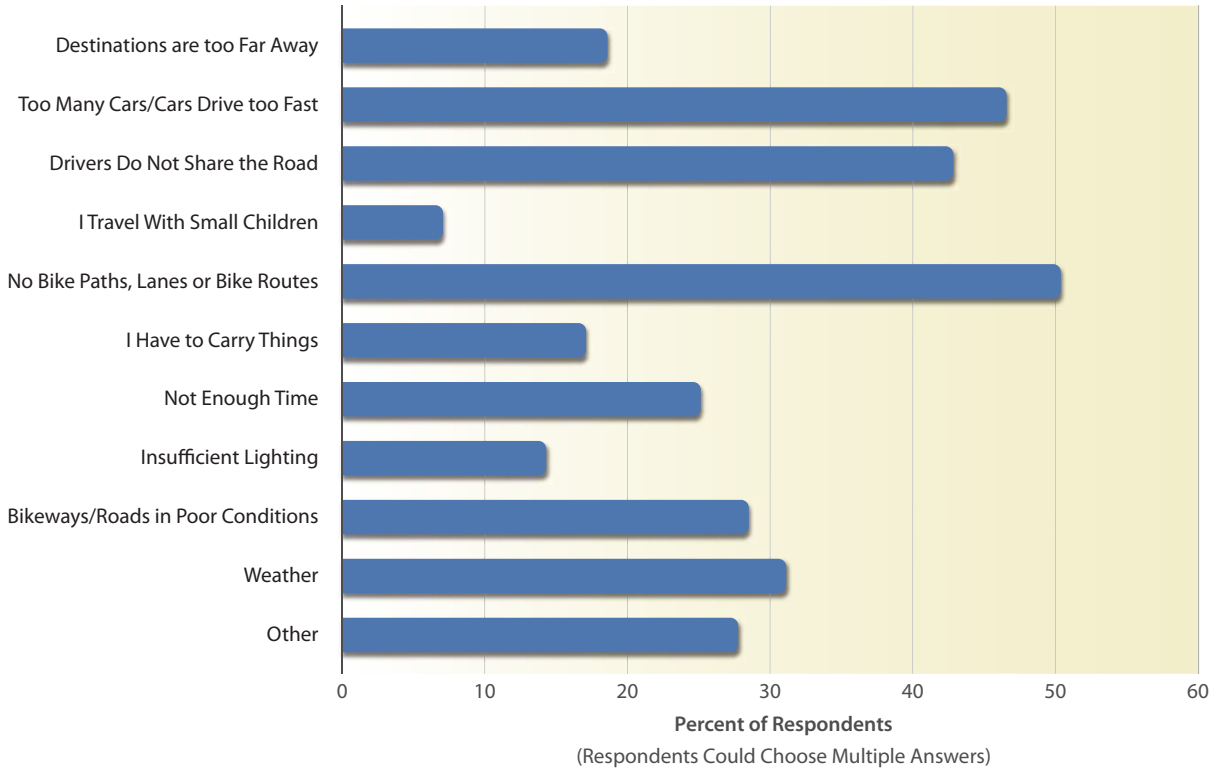
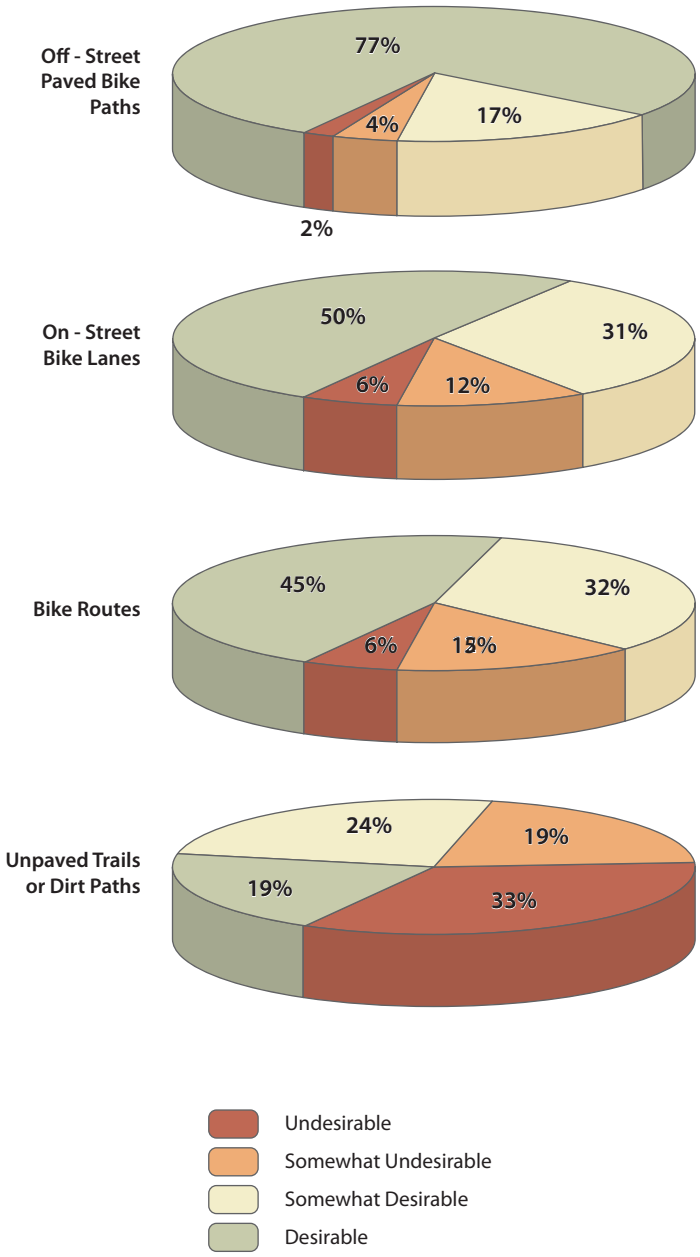


Figure A-5 - How Many Days Per Week Do You Ride?



WHAT PREVENTS YOU FROM BIKING MORE OFTEN?

FIGURE A-6


Off - Street Paved Bike Paths
77%
4%
17%
2%
On - Street Bike Lanes
50%
31%
6%
12%
Bike Routes
45%
32%
6%
15%
Unpaved Trails or Dirt Paths
24%
19%
19%
33%
Undesirable
Somewhat Undesirable
Somewhat Desirable
Desirable

APPENDIX B:
BICYCLE PLANNING BEST PRACTICES

APPENDIX B: BICYCLE PLANNING BEST PRACTICES

This section highlights three jurisdictions that have demonstrated a strong commitment to bicycle planning and bikeway development: Portland, Oregon; Marin County, California; and Davis, California. These locations can help serve as models for Sacramento County in its efforts to become a more innovative bicycling community.

PORTLAND, OREGON

Portland, Oregon adopted its second *Portland Bicycle Master Plan* in 1996 and is currently developing the new *Platinum Bicycle Master Plan*. A key goal for bicycle improvements in the 1996 Bike Plan states:

- "Make the bicycle an integral part of daily life in Portland, particularly for trips of less than five miles, by implementing a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer."

The combination of bicycle infrastructure and programs has helped Portland become a bicycle-friendly community.

The best indicator for Portland is the annual count of bicycle trips on the four bicycle-friendly bridges over the Willamette River. Figure B-1 shows that since 1990, bicycle use on the four bridges has increased 321 percent while motor vehicle traffic has remained constant. According the US Census, Portland has one of the highest commuter bicycle mode shares of any location in the country at 3.7 percent. Between 1990 and 2005, bicycle mode share increased by 190 percent.[1]

Infrastructure Improvements

At the time of the 1996 Plan adoption, Portland had 144 miles of bikeways. In 2007, the bikeway network measured 266 miles. These on-street and off-street facilities help make Portland a center for commuter and recreational bicycling.

1. 1990 and 2000 US Census, Summary File 3, P049. MEANS OF TRANSPORTATION TO WORK - Universe: Workers 16 years and over and American Community Survey, 2000-2006.

Figure B-1 – Portland Bicycle Traffic over Four Bridges and Bikeway Miles

In addition to bikeways, Portland has implemented innovative bicycle parking solutions. A Portland "Bicycle Oasis" provides weather-protected bicycle parking for approximately 20 bicycles. Similar areas of bicycle parking have been established on-street in place of car parking at locations where sidewalks are too narrow to accommodate the amount of bicycle parking required. The Portland program allows local businesses to sign an agreement with the City in which the business owner installs bicycle parking in place of an adjacent parking space.

Portland bicycle oasis

Bicycle Programs

Programs help encourage and educate more people to ride bicycles and to bicycle more safely. The City of Portland has implemented a number of different programs, including:

Kids bicycling to school in Portland

- **SmartTrips** is an individualized marketing program that offers information and hands-on experiences to neighborhood residents to encourage bicycling and other transportation options as alternatives to driving alone.
- **Portland by Cycle** provides information kits, rides, and classes to new bicyclists and bicyclists new to the Portland area who want to explore some of the best ways to get around the City by bicycle.
- **Women on Bikes** is a program to increase ridership among women with a Resource Guide, rides, and clinics.
- **Safe Routes to Schools** is an effort to increase the number of kids walking and bicycling to school by combining the "4Es" (education, enforcement, engineering, and encouragement).

In addition to expanding the bicycle network and implementing bicycle programs, Portland has worked with other agencies to increase bicycling in the City. The transit agency and the City provide convenient access to transit and bicycle parking at transit centers. Portland has also used a multi-agency effort to improve bicycling safety. For example, over the past 15 years, bicyclists riding with helmets have increased and bicyclists riding without helmets have decreased.

MARIN COUNTY, CALIFORNIA

Marin County, California adopted its first Bike Plan in 1974. Since then, the County has continued to improve bicycling conditions, building successful programs such as Safe Routes to Schools, which have become national models replicated across the county.

Infrastructure Improvements

Many infrastructure improvements have been completed or are underway since adoption of the 2001 *Unincorporated Marin County Bicycle and Pedestrian Master Plan*:

- On-street bikeways – The County and local cities and towns, have been working to install on-street bicycle lanes as well as new "Shared Roadway Bicycle Markings," the latter in the City of San Rafael.

- Share the Road Signs and Stencils – The County of Marin Department of Public Works helped develop and has installed over 100 Share the Road signs at a number of locations, including key transportation and recreation routes. In 2007, the County DPW began testing Share the Road pavement stencils on North San Pedro Road.

- Bike Access to Transit – In 2006, Golden Gate Transit purchased and installed underfloor style racks that hold two bicycles in the luggage compartment of their 45-foot long buses, ensuring that all fleet buses now have bicycle storage areas. In 2005, secure weather-protected bicycle parking was installed inside the paid area of the Larkspur Ferry Terminal.

Marin Share the Road Sign

- Countywide Bicycle Route Guide Signage Project – The County has developed and is in the process of implementing a numbered countywide bicycle route sign system that provides information about direction and destination at bicycle route decision points.

- North-South Bikeway – Beginning in 1974, the County has planned for a North-South Bikeway, roughly paralleling an existing railroad right-of-way from Southern to Northern Marin along the Highway 101 corridor. Toward this goal, Marin County has completed several segments of pathway and constructed a bicycle and pedestrian bridge over a canal. Planned improvements within the next five years include reopening a former railroad tunnel for bicycle and pedestrian use (and studying the feasibility of a second tunnel), constructing a section of pathway parallel to Highway 101 as part of a highway widening project and constructing new bicycle lanes, projects totaling over $36 million.

Policy, Planning and Programs

Numerous policy and planning efforts have taken place that encourage nonmotorized transportation in Marin County, such as adoption of a County "Complete Streets" policy and designation of Marin County as a Non-motorized Transportation Pilot Program community.

- Marin County Department of Public Works Multi-modal Policy (2006): "At the outset of all projects, other than routine maintenance, an analysis shall be performed to ensure the inclusion of all necessary, appropriate and reasonable multi-modal facilities and improvements. The analysis shall include facilities related to transit, bike and pedestrian access, disability access, and transit safety."

- Nonmotorized Transportation Pilot Program (NTPP) – Begun in 2006 and continuing through 2010, the program allocates $20 million to bicycle and pedestrian projects and programs. Included was an extensive public outreach and planning process to identify, rank, and select infrastructure projects and educational programs to be funded by the program.

- Safe Routes to Schools – Safe Routes to Schools has expanded rapidly in Marin County, fulfilling a key recommendation of the 2001 Unincorporated Marin County Bicycle and Pedestrian

Masterplan. The Safe Routes to Schools program began in 2000 as a grassroots effort to reduce congestion and encourage healthy habits among school-aged children in Marin County. A local advocacy group initially developed the program with funding from the National Highway Transportation Safety Administration as one of two model programs nationwide. Safe Routes to Schools subsequently became a Transportation Authority of Marin program, receiving funding by the Measure A Transportation Sales Tax. Safe Routes to Schools has increased participation countywide. A record 45 schools, representing over 18,000 students, currently participate in the program.

- Share the Road – Since 2001, the Share the Road Campaign has been a partnership with Marin law enforcement and the Marin County Bicycle Coalition. The campaign includes three components: bicycle and driver safety checkpoints similar to sobriety checkpoints, free basic street skills classes for cyclists, and public "Share the Road" presentations targeted at both cyclists and motorists.

Funding

Marin County has received a substantial boost from numerous funding sources in the years since the adoption of the 2001 bicycle plan. Major funding opportunities include Measure A Transportation Sales Tax, which can be spent on standalone bicycle and pedestrian improvements, and the Nonmotorized Transportation Pilot Program (NTPP), which provides funding specifically for a countywide bike and pedestrian network. The inclusion of bicycle and pedestrian modes, including Safe Routes to Schools, into Measure A was a key element in its popularity with voters and a best practice in terms of incorporating bicycling and walking projects as part of a County "self-help" transportation sales tax.

DAVIS, CALIFORNIA

In 2005, the League of American Bicyclists recognized Davis, California as the first Platinum-level Bicycle Friendly Community in the United States. Davis is topographically flat and home to the University of California at Davis and its many bicycling students. The City has over 100 miles of bicycle lanes, trails, and routes and more than 25 grade-separated intersections, separating bicyclists and motorists into their own designated operating areas. The 2000 US Census shows that 17 percent of works trips are by bicycle.

A bicycle underpass in Davis

Bicycle Planning

The City of Davis Bicycle Plan incorporates goals and objectives for Education, Enforcement, Encouragement, and Engineering. A brief description of the first three E's is below.

- Education programs include those for motorists and bicyclists.
- Enforcement goals and objectives relate to collisions, bicyclists abiding by the rules of the road as well as reducing bicycle thievery.
- Encouragement activities include greater marketing efforts for bicycling events and coordinating better with the University.

Davis' aggressive policy of incorporating bicycle facilities into the Citywide transportation network has likely been a primary cause of the high bicycle mode share. More than 90 percent of all the collector and arterial streets in the City have bike lanes and/or paths and the *Comprehensive Bicycle Master Plan* calls for bike lanes or paths on 100 percent of these larger roadways.

Infrastructure Improvements

Davis has led the way in the adoption of several innovative bikeway facilities in California. Davis was the first city in the state to install bicycle traffic signal heads, which control bicycle traffic separately from motorized or pedestrian traffic, resulting in increased traffic safety and improved intersection operations. Partly in response to the demand of the many bicycle-commuting college students, the City was one of the first to implement a comprehensive Citywide bicycle parking program with specific design and placement guidelines for bicycle racks. Davis is one of the few cities in California (and North America) to aggressively pursue a network of separated off-street pathways for recreation and transportation purposes that are fully integrated into the transportation network, including wayfinding street signs that tie into the local street network.

APPENDIX C:
BICYCLE GOALS FROM OTHER JURISDICTIONS

APPENDIX C: BICYCLE GOALS FROM OTHER JURISDICTIONS

To help make the Sacramento County Bicycle Master Plan a state of the art plan, a review of other bicycle plans' goals was performed. Reviewing these plans' goals helped frame the goals and policies of the Sacramento County Bicycle Master Plan. This chapter lists these plans and the goals reviewed.

Incorporating routine accommodations into the Sacramento County Bicycle Master Plan's goals and policies will also help the County implement bicycle facilities. The conclusion of this chapter includes descriptions of federal and state routine accommodation policies. These policies also helped direct the formation of the Sacramento County Bicycle Master Plan goals and policies.

BICYCLE PLANNING GOALS FROM OTHER JURISDICTIONS

This section provides a review of Bicycle Master Plan goals adopted by 20 cities around the nation, three counties, three states, and three international cities. The jurisdictions' goals reviewed include:

- Anaheim, California
- Austin, Texas
- Berkeley, California
- Boulder, Colorado
- Chicago, Illinois
- Chico, California
- Contra Costa County, California
- Copenhagen, Denmark
- Davis, California
- District of Columbia
- La Grande, Oregon
- Lancaster County, Pennsylvania
- Long Beach, California
- Madison, Wisconsin
- Nevada State
- New York City
- Oregon State
- Palo Alto, California
- Phoenix, Arizona
- Portland, Oregon
- Sacramento, California
- San Diego, California
- San Francisco, California
- Seattle, Washington
- Solano County, California
- Toronto, Canada
- Vancouver, Canada
- West Hollywood, California
- Wisconsin State

Most cities use the term "goals" to indicate guiding principles or concepts. Most commonly, goals are followed by supporting policies, which are then followed by specific actions. However, there is variation in how these terms are applied. This chapter identifies the highest-level goals from each plan; these are sometimes called objectives, actions, vision statements, or policies.

OVERVIEW OF COMMON GOALS

The following table shows the most common Bicycle Master Plan goals associated with the plans under consideration. Each goal is scored as either “quantifiable” (e.g., “To increase bicycle mode share by at least 4% by the year 2020”) or “non-quantifiable” (e.g., “Increase levels of bicycling”). Note that some jurisdictions may have included goal language in policies, objectives, or action items, but not in their top-level goals; thus, it should not necessarily be assumed that the jurisdiction is not aiming for these goals in the plan just because a goal does not appear in this chart.

	Modal Target	Safety Goal	Facilities Completion/Improvement	Education Target	Institutional/Planning Goal	Multimodal Goal	Promotion/Communications Goal	Funding Target	Complete Streets Goal	Bike Parking Goal	Maintenance
Anaheim, California	●	○	●			○	○			○	○
Austin, Texas	●	○	○		○	○					○
Berkeley, California			○	○	○		○	○			
Boulder, Colorado	●	○	○								○
Chicago, Illinois	●	●	○	○		○	○		○	○	
Chico, California		○	○	○	○	○		○		○	
Contra Costa County, California		○	○		○		○				○
Copenhagen, Denmark	●	●									
Davis, California		○	○	○	○	○	○			○	○
District of Columbia			○	○			○				
La Grande, Oregon		○						○			
Lancaster County, Pennsylvania		○	○	○		○	○				
Long Beach, California	●	○				○					
Madison, Wisconsin		○	○			○				○	○
State of Nevada	●	●									
New York, New York			○		○	○				○	○
State of Oregon	○	○	○	○		○					
Palo Alto, California		○	○								
Phoenix, Arizona	○	○	○								
Portland, Oregon	○	○	○	○		○	○			○	○
Sacramento, California		○	○	○	○	○		○	○	○	○
San Diego, California	●	○	○				○			○	○
San Francisco, California		○	○					○		○	
Seattle, Washington	●	●									
Solano County, California	○	○	○				○	○			
Toronto, Canada	●	○									
Vancouver, British Columbia			●					○		○	
West Hollywood, California	○	○	○			○	○			○	
State of Wisconsin	●	●									

LEGEND

● Quantifiable

○ Non - Quantifiable

CITIES', COUNTIES', AND STATES' GOALS REVIEW

Anaheim, California

Population: 342,410

City Web site: www.anaheim.net

Photo: Bucky C. Arnold

The City of Anaheim is a medium-sized city that is part of the greater Los Angeles Metropolitan Area. The Anaheim Bicycle Master Plan, completed in 2004, is one of several California examples presented for consideration as part of developing the Sacramento County Bicycle Master Plan.

Goals

- Goal 1: Promote Bicycle Transportation – Make bicycle travel an integral part of daily life in Anaheim, particularly for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer.
- Goal 2: Increase Bicycle Transportation – Make Anaheim a community that makes it easier to travel via alternative transportation by aiming for a 5 percent mode share of all utilitarian trips to be made by bicycling by the year 2020.
- Goal 3: Improve the Local and Regional Bikeway Network – Identify an integrated system of bicycle lanes, routes and paths along with support facilities such as bicycle lockers and racks to serve local and regional commuting and recreational bicyclists.
- Goal 4: Increase the Benefits of Bicycling – Identify and implement a network of bicycle facilities to accommodate non-motorized travel that will reduce vehicle use, improve air quality, and provide health benefits.

Source

City of Anaheim Bicycle Master Plan (May, 2004)
(www.anaheim.net/generalplan/docs/AnaheimGP_AppendixB_AnaheimBicycleMasterPlan.pdf)

Austin, Texas

Population: 680,899

City Web site: www.ci.austin.tx.us

Photo: Bob Parker / City of Austin

Austin is considered the most bicycle-friendly city in Texas and has received a Silver-level Bicycle Friendly Communities award from the League of American Bicyclists. Austin is a university city, and one of the fastest-growing metro areas in the US.

Goals

- Goal 1: Institutionalize Bicycle Transportation – Institutionalize bicycle transportation in all transportation and recreation planning, design, and construction activities, increase acceptance of bicycling as a legitimate transportation mode and achieve a balanced multi-modal transportation system.
- Goal 2: Improve Bicycle Safety – Improve bicycle safety by increasing education and training opportunities for cyclists, pedestrians, motorists and law enforcement personnel, and by increasing enforcement of traffic laws for all roadway users to reduce bicycle related accidents.
- Goal 3: Increase Levels of Bicycling – Increase levels of bicycling for commuting and utilitarian trips as a cost-effective and efficient alternative in the transportation system. The Austin Bicycle Plan proposes to increase the modal split for bicycles to 4 percent by 2005 and 8 percent by 2015.
- Goal 4: Adequately Fund, Create, and Maintain a System of Bicycle Routes – Adequately fund, create and maintain a functional system of bicycle routes that enable safe bicycle transportation throughout the area until overall roadway improvements are made that allow travel on all roadways.
- Goal 5: Establish Standards and Guidelines for Bicycle Facilities, Programs, and Projects – Establish and maintain appropriate and safe standards and guidelines for bicycle facilities, programs, and projects.
- Goal 6: Integrate and Coordinate Multiple Modes of Transportation – Integrate and coordinate multiple modes of transportation through provision of bicycle/transit interfaces on buses and light rail, and bike and ride facilities at transit stations thereby playing an important role in congestion demand management.

Source

Austin Bicycle Plan (April, 1996) (www.ci.austin.tx.us/bicycle/plan1.htm)

Berkeley, California

Population: 102,743

City Web site: www.ci.berkeley.ca.us

Photo: Jessica Roberts

Situated in the California Bay Area, the City of Berkeley is a dense urbanized city comprising just over 10 square miles. The City is well known for pioneering bicycle boulevards, or lower-traffic streets that have been optimized for bicycling through signage, traffic calming treatments, and pavement markings. Berkeley's Bicycle Plan includes one overall mission statement, followed by five major goals and accompanying policies.

Goals

- Overall Goal (mission statement): To create a model bicycle-friendly city where bicycling is a safe, attractive, easy, and convenient form of transportation and recreation for people of all ages and bicycling abilities.
- Goal 1: Planning – Integrate the consideration of bicycle travel into City planning activities and capital improvement projects, and coordinate with other agencies to improve bicycle facilities and access within and connecting to Berkeley.
- Goal 2: Network and Facilities – Develop a safe, convenient, and continuous network of bikeways that serves the needs of all types of bicyclists, and provide bicycle parking facilities to promote cycling.
- Goal 3: Education/Safety – Improve the safety of bicyclists through education and enforcement.
- Goal 4: Promotion – Increase bicycle mode share by increasing public awareness of the benefits of bicycling and of the available bike facilities and programs.
- Goal 5: Implementation – Secure sufficient resources from all available sources to fund ongoing bike improvements and education.

Source

Berkeley Bicycle Plan (December, 1998)
(www.ci.berkeley.ca.us/transportation/Bicycling/BikePlan/plan.pdf)

Boulder, Colorado

Population: 94,673

City Web site: ci.boulder.co.us

Photo: Roz Boatman

Boulder is known as one of America's most bike-friendly cities and has been honored as one of only three Platinum-level Bicycle Friendly Communities in the nation by the League of American Bicyclists. Boulder's bikeway system provides a greater percentage of off-street pathways than most US cities, and the city reports that 14 percent of all trips are made by bicycle.

Goals

- Goal 1: To increase bicycle mode share by at least 4 percent by the year 2020.
- Goal 2: To develop a mechanism for gathering continued input from the public on the bicycle system and to establish partnerships with various entities within the City and County in order to develop and improve the bicycle system.
- Goal 3: To develop a continuous bicycle system with access to major destination areas and to maintain the system so that it provides safe and convenient travel.
- Goal 4: To design and construct bicycle facilities in ways that encourage bicycle riding, provide for safer interaction with other modes, and better integrate bicyclists into the roadway system.
- Goal 5: To develop an urban form which is characterized by people-oriented land use patterns and which enables people to walk or ride their bicycles to destination areas.
- Goal 6: To complete the missing links in the regional system and to provide continuous bicycle facilities and good bicycle-transit integration between the City of Boulder and her neighboring cities.
- Goal 7: To develop local recognition of the bicycle as a legitimate form of transportation.
- Goal 8: To increase transportation safety for all modes through education and enforcement efforts.

Source

Boulder Transportation Master Plan: Bicycle System Plan (1996, updated 2003)
(ci.boulder.co.us/index.php?option=com_content&task=view&id=452&Itemid=1654)

Chicago, Illinois

Population: 2,869,121

City Web site:
egov.cityofchicago.org/city/webportal/home.do

Photo: Chicagoland Bicycle Federation

Chicago is generally acknowledged to be the best American large city for bikes and has made great progress in recent years, perhaps due in part to Mayor Richard Daley's well-known support of bicycle initiatives. The City has received a Silver-level Bicycle Friendly Communities award from the League of American Bicyclists. In 2006, the City released a new Bike 2015 Plan that received critical praise. The Chicago 2015 Plan is the only American bicycle master plan that explicitly addresses bicycle messengers. The Plan has two overall goals, and then is divided into eight chapters, each of which has its own goals and strategies, as well as performance measures and timetables.

Goals

- Overall Goal 1: To increase bicycle use, so that 5 percent of all trips less than five miles are by bicycle.
- Overall Goal 2: To reduce the number of bicycle injuries by 50 percent from current levels.
- Goal 1: Bikeway Network – Establish a bikeway network that serves all Chicago residents and neighborhoods.
- Goal 2: Bicycle-friendly Streets – Make all of Chicago's streets safe and convenient for bicycling.
- Goal 3: Bike Parking – Provide convenient and secure short-term and long-term bike parking throughout Chicago.
- Goal 4: Transit – Provide convenient connections between bicycling and public transit.
- Goal 5: Education – Educate bicyclists, motorists, and the general public about bicycle safety and the benefits of bicycling.
- Goal 6: Marketing and Health Promotion – Increase bicycle use through targeted marketing and health promotion.
- Goal 7: Law Enforcement and Crash Analysis – Increase bicyclist safety through effective law enforcement and detailed crash analysis.
- Goal 8: Bicycle Messengers – Expand the use of bicycle messengers; improve their workplace safety and public image.

Source

City of Chicago Bike 2015 Plan (January, 2006) (www.bike2015plan.org)

Chico, California

Population: 84,396

City Web site: www.chico.ca.us

Photo: Gino Zahnd, Chico, California (flickr.com/photos/gzahnd/424307052/)

Chico is a small California college city where many residents already choose to bicycle. Its bicycle master plan defines one overall goal followed by eight specific goals, accompanied by supporting policies and objectives.

Goals

- Overall Goal: Continue to fulfill the requirements necessary to be a bicycle friendly community, as determined by the League of American Bicyclists.
- Goal 1: Provide safe and direct routes for cyclists between and through residential neighborhoods, commercial areas, schools, and other major destinations within the Chico Urban Area.
- Goal 2: Improve safety, efficiency, and comfort for bicyclists and pedestrians through traffic engineering and law enforcement efforts and provide for shaded throughroutes, where possible.
- Goal 3: Provide adequate bicycle parking facilities.
- Goal 4: Provide and plan for bicycle and pedestrian access to new development, including on-site access for new residential development.
- Goal 5: Promote bicycling as a part of the inter-modal transportation system.
- Goal 6: Improve bicycling safety through driver and cyclist education programs.
- Goal 7: Develop a bikeway system that encourages and facilitates recreational use.
- Goal 8: Pursue and obtain maximum funding available for bikeway programs.

Source

Chico Urban Area Bicycle Plan (November, 2007)
www.chico.ca.us/Building__Development_Services/Traffic_/Bicycle_Plan.pdf

Contra Costa County, California

Population: 1,019,640

City Web site: www.co.contra-costa.ca.us

Photo: Contra Costa County Countywide Bicycle and Pedestrian Plan

Contra Costa County is an urbanized county located in the San Francisco Bay region. Its regional transportation authority undertook a countywide bicycle and pedestrian planning effort in 2003 that designated five bicycle and pedestrian goals.

Goals

- Goal 1: Expand, Improve and Maintain Facilities for Walking and Bicycling.
- Goal 2: Improve Safety for Pedestrians and Bicyclists.
- Goal 3: Encourage More People to Walk and Bicycle.
- Goal 4: Support Local Efforts to Improve Conditions for Walking and Bicycling.
- Goal 5: Plan for the Needs of Pedestrians and Bicyclists.

Source

Contra Costa Countywide Bicycle and Pedestrian Plan (December, 2003) (www.ccta.net/GM/finalplan.htm)

Copenhagen, Denmark

Population: 503,699

City Web site: www3.kk.dk

Photo: Giacomo Brings

Copenhagen's bicycle facilities and mode share are the envy of cities around the world, and Copenhagen's bicycle plan is similarly admired. With one-third of all trips currently made by bicycle, and continual increases over the years in mode share and bikeway miles, Copenhagen has many lessons to offer American cities about bicycle planning and policy. The City also provides annual reports on bicycling that track performance towards their main five goals, allowing an annual assessment of the state of bicycling and the City's progress on bicycling issues.

Goals

- Goal 1: The proportion of people who cycle to workplaces in Copenhagen shall increase from 34 percent to 40 percent.
- Goal 2: Cyclist risk of being injured or killed shall be reduced by 50 percent.
- Goal 3: The proportion of Copenhagen cyclists who feel safe cycling in town shall increase from 57 percent to 80 percent.
- Goal 4: Cyclist traveling speed on trips of over 5 km shall increase by 10 percent.
- Goal 5: Cycling comfort shall be improved so that cycle track surfaces deemed unsatisfactory shall not exceed 5 percent.

Source

Cycle Policy 2002 – 2012 (July, 2002) (www.vejpark2.kk.dk/publikationer/pdf/413_cykelpolitik_uk.pdf)

Davis, California

Population: 64,401

City Web site:
www.city.davis.ca.us

Photo: Jessica Roberts

Davis is a rarity among American cities with a bicycle mode share near 20 percent. They are best known for their integrated system of off-road greenways, which have been required of residential development for decades. Bicycle-friendly planning policies combine with strict urban growth restrictions to make this college town exceptionally bicycle-friendly – in fact, even their City symbol is a bicycle. Davis is ones of three American cities granted a Platinum-level Bicycle Friendly Communities award by the League of American Bicyclists. The City's bicycle plan goals go into considerable depth, providing 26 separate measurable goals. Their bicycle plan is currently being updated.

Goals

Overall

- Goal 1: Maintain a comprehensive and coordinated bicycle program.

Education

- Goal 2: Enhance educational programs to teach children and adults safe bicycle driving techniques.
- Goal 3: Provide literature and current bicycle route maps for public use.

Enforcement

- Goal 4: Continue the enforcement of bicycle rules and regulations in order to reduce violations and crashes.
- Goal 5: Enhance educational programs with emphasis on bicycle safety and laws relating to bicycle driving.
- Goal 6: Promote programs that reduce incidents of theft and continue efforts to recover stolen bicycles.
- Goal 7: Police enforcement of traffic laws.

Engineering

- Goal 8: Placement of Yard Debris in Bike Lane – reconsider yard waste pick in the City because it often blocks bike lanes.
- Goal 9: Planning for Bicycles in New Developments – train planning staff of guiding principles for bicycle planning to ensure that new developments consider proper bicycle facilities.
- Goal 10: Provide bike lanes along all arterial and collector streets. Provide separated bike paths adjacent to arterial and collector streets only where justified, with full consideration of potential safety problems this type of facility can create.
- Goal 11: Ensure that bicycle routing is an integral part of street design so that lanes and pathways form an integrated network.
- Goal 12: Consider bicycle-operating characteristics in the design of bikeways, intersections and traffic control systems.
- Goal 13: Coordinate and cooperate with surrounding jurisdictions such as the University of California Davis, and Yolo and Solano counties, to create a continuous and interconnected bikeway network.
- Goal 14: Improve the campus-to-core bikeway along Third Street.
- Goal 15: Promote intermodal transportation.
- Goal 16: Provide adequate bike parking.
- Goal 17: Design bike routes as integral parts of new greenways, open space areas (where appropriate) and “greenstreets” to complete and expand the existing bikeway system.
- Goal 18: Plan bikeways to provide attractive, shaded linkages between destinations.
- Goal 19: Freeway Interchange Safety Improvements – work with and encourage Caltrans to study various ways to minimize the hazards that freeway interchanges pose to bicyclists.
- Goal 20: Bicycle Circulation Enhancement.
- Goal 21: Maintain roadways and bicycle related facilities so they provide safe and comfortable conditions for the bike driver.
- Goal 22: Design bicycle facilities to minimize maintenance costs by specifying quality materials and standard products.
- Goal 23: Bike Path Maintenance.

Encouragement

- Goal 24: Establish a centralized program for interaction with and education of the public.
- Goal 25: Increase local coverage of bicycle events and present accurate information about bicycle safety and activities.

- Goal 26: Share information and resources with UCD regarding bicycle activities.

Source

City of Davis Comprehensive Bicycle Plan (October, 2006) (www.city.davis.ca.us/pw/pdfs/01bikeplan.pdf)

District of Columbia

Population: 582,049

City Web site: www.dc.gov

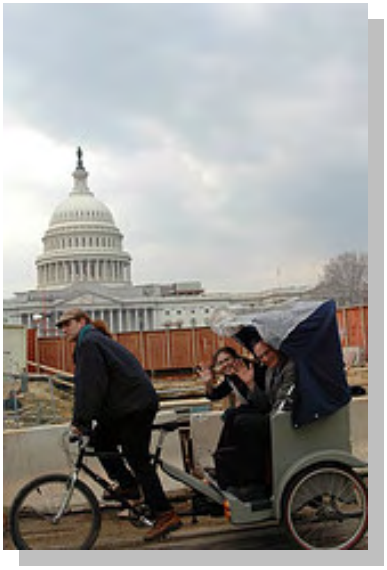


Photo: Jonathan Maus, Bikeportland.org

The District of Columbia has received a Bronze-level Bicycle Friendly Communities award from the League of American Bicyclists and has made significant progress in improving bicycling conditions over the last decade. The DC Bicycle Master Plan designates one vision statement followed by three basic goals, to be achieved by 14 core recommendations.

Goals

- Overall Goal (Vision Statement): "The District of Columbia will be a world-class bicycling city that offers a safe and convenient network of bikeways for all types of trips."
- Goal 1: More and Better Bicycle Facilities.
- Goal 2: More Bicycle-Friendly Policies.
- Goal 3: More Bicycle-related Education, Promotion, and Enforcement.

Source

District of Columbia Bicycle Master Plan (April, 2005) (ddot.dc.gov/ddot/cwp/view,a,1245,q,634448.asp)

Fort Collins, Colorado

Population: 137,200

City Web site: www.fcgov.com

Photo: City of Fort Collins

Nestled at the foot of the Rocky Mountains, Fort Collins achieved Gold Level designation as a Bicycle Friendly Community by the League of American Bicyclists in 2008. This achievement comes from an effort that has incorporated input from local residents, Colorado State University, and local businesses; the New Belgium Brewing Company recently financed the fabrication of numerous brewing-themed bicycle racks throughout the City. The City has even established an official Web site through which bicyclists can report bicycle hazards in the roadway network. The 2004 Fort Collins Transportation Master Plan defines several goals that support bicycling.

Goals

Our community will develop and sustain a safe, convenient, and efficient transportation system incorporating and integrating many modes of travel including automobiles, transit, bicycles, and pedestrians.

Our community's growth will be structured in a compact pattern that facilitates pedestrian, bicycle, and transit travel.

The bicycle will be a practice transportation choice for residents and visitors.

- The community will have a comprehensive, safe and convenient bikeway system. The bikeway system will be designed to provide continuity and eliminate gaps in the system, while linking to regional systems.
- Bikeways will provide access to all major activity centers and destinations, by building on combinations of existing and planned commuter and recreational facilities.

Source

Fort Collins Transportation Master Plan 2004 (February, 2004)
(www.fcgov.com/transportationplanning/tmp.php)

Fresno, California

Population: 500,017

City Web site: www.fresno.gov

Photo: City of Fresno

A mild winter climate and flat terrain give Fresno an environment that is conducive to bicycling. Additionally, Fresno's proximity to the foothills of the Sierra Nevada Mountains offer great potential for recreational bicycling, as demonstrated by the 2009 Amgen Tour of California. The 2025 Fresno General Plan Public Facilities Element contains two specific directions that pertain to bicycling: the Transportation/Bikeways direction and the Transportation/Trials direction. Each direction has broad objectives accompanied by supporting policies.

Transportation/Bikeways Objectives

- Objective 1: To establish and maintain a continuous and easily accessible bikeway system throughout the metropolitan area that will facilitate bicycling as both a viable transportation alternative and a recreational activity.

- Objective 2: Encourage increased bicycle usage by providing the most safe and secure bicycle facilities feasible, and by promoting traffic safety awareness by both bicyclists and motorists.

Transportation/Trails Objectives

- Objective 1: Establish a network of pedestrian, bicycle, and where appropriate, equestrian trails to serve residential areas and to link residential areas with activity centers such as parks and recreational facilities, educational institutions, employment centers, cultural sites, and other focal points of the city environment, in order to enhance the community's recreational and alternative transportation opportunities and to provide visual and physical amenities.

- Objective 2: Develop trails with minimum environmental impact.

- Objective 3: Pursue a variety of funding sources to maximize implementation and development of the city's trail system.

Source

2025 Fresno General Plan (November, 2002)
(www.fresno.gov/Government/DepartmentDirectory/PlanningandDevelopment/Planning/2025FresnoGeneralPlan.htm)

La Grande, Oregon

Population: 12,327

City Web site:
www.ci.la-grande.or.us/index_nf.cfm

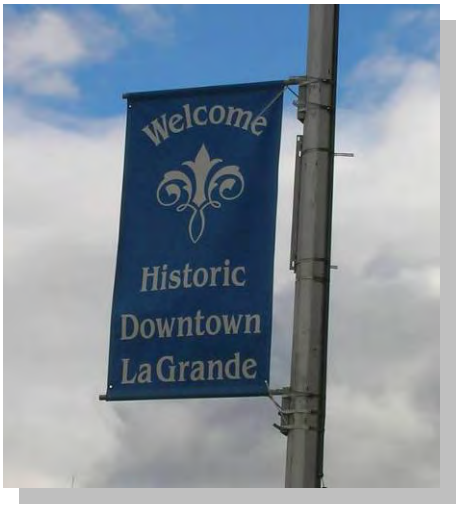


Photo: Alta Planning + Design

La Grande is a small city in Eastern Oregon. Home to one university and situated in a primarily rural setting, La Grande provides an example of how a small jurisdiction may plan for bicycling.

Goals

- Goal 1: Provide a comfortable environment for bicyclists and pedestrians by enhancing safety.
- Goal 2: Alleviate congestion and improve air quality by reducing vehicle-miles of travel on State Highways and local streets.
- Goal 3: Develop plans that reflect community interests.
- Goal 4: Provide a plan with implementable solutions.

Source

La Grande Pedestrian and Bicycle Improvement Plan (June, 2007) (Not available online)

Lancaster County, Pennsylvania

Population: 470,658

City Web site:
www.co.lancaster.pa.us/lanco/site/default.asp

Photo: Lancaster County Bicycle and Pedestrian Transportation Plan

Lancaster County is located in southeastern Pennsylvania and is home to a significant Amish and Mennonite population – many of whom use the bicycle as a regular mode of transportation. The countywide Bicycle and Pedestrian Transportation Plan, adopted in 2004, selects four basic goal areas, supported by specific recommendations.

Goals

- Goal 1: Transportation Improvements – Develop safe and convenient bicycle and pedestrian accommodations for every type of trip, and for all levels of ability.
- Goal 2: Education Goal – Establish educational programs that teach safe bicycling and walking skills to all ages, and promote safer driving behaviors among motorists, in order to reduce injuries and deaths.
- Goal 3: Multimodal Access Goal – Improve access to all forms of transportation for all people who bicycle and walk, in order to expand transportation options for residents and visitors to Lancaster County.
- Goal 4: Communications Goal – Develop communication programs that increase bicycling and walking, and foster a pro-bicycle and pro-pedestrian awareness in individuals, private sector organizations, and all levels of government.

Source

Lancaster County Bicycle and Pedestrian Transportation Plan (2004)
(www.co.lancaster.pa.us/planning/lib/planning/transportation/bpac/phase_2_final/text_wo_maps.pdf)

Long Beach, California

Population: 461,522

City Web site: www.ci.long-beach.ca.us

Photo: Long Beach Bicycle Master Plan

Long Beach, California is a medium-sized city situated in the greater Los Angeles metropolitan area. Its economy is dominated by its port and associated industrial activity. The Long Beach Bicycle Master Plan, completed in 2001, is one of several California examples presented for consideration as part of developing the Sacramento County Bicycle Master Plan.

Goals

- Goal 1: Make bicycling safer, more convenient and more enjoyable for all types of bicyclists, transportation and recreation related, with a goal to increase bicycle use by 5 percent by the year 2020.
- Goal 2: Encourage more people to bicycle for transportation to provide an attractive and healthy transportation option, which will reduce traffic congestion, air pollution, and noise pollution.
- Goal 3: Develop an economical transportation option that promotes social equity.

Source

Long Beach Bicycle Master Plan (December, 2001) (www.ci.long-beach.ca.us/gov/bmp.asp)

Madison, Wisconsin

Population: 208,054

City Web site: www.cityofmadison.com

Photo: Katy Yen

Madison is one of the League of American Bicyclists' nine Gold-ranked Bicycle Friendly Communities. Despite cold winters, bicycling in Madison is popular and enjoys strong political support. Bicycle-related goals for Madison are set forth in the Regional Transportation Plan Bicycle Element. One overall goal is defined, followed by seven policy objectives.

Goals

Overall Goal: Provide for the safe, convenient and enjoyable travel by bicyclists throughout the region.

Policy Objectives

- Goal 1: Maintain and reconstruct existing bicycle facilities in a manner that promotes safety, increases convenience, and minimizes lifetime costs.
- Goal 2: Develop a continuous, interconnected system of bikeways providing reasonably direct, enjoyable, and safe routes within and between neighborhoods and communities throughout the region.
- Goal 3: Provide on-street bicycle facilities on arterial and collector roadways where feasible and appropriate given available right of way, traffic volumes and speeds, and other factors.
- Goal 4: Eliminate bicycling hazards and barriers.
- Goal 5: Provide necessary bicycle system support facilities and improve accessibility to transit and other transportation modes.
- Goal 6: Encourage bicycle travel for transportation as well as recreational purposes.
- Goal 7: Reduce bicycle crashes through a comprehensive "4-E" approach that includes education, training, enforcement, and implementation of cost-effective engineering counter-measures (i.e., bike lanes, intersection reconfiguration, new or modified traffic control devices, etc.).

Source

Regional Transportation Plan 2030: Madison Metropolitan Area and Dane County (November, 2006) (www.madisonareampo.org/regional_comprehensive_plan_2030.htm)

Nevada State

Population: 2,565,382

City Web site: www.nv.gov

Photo: Nevada State Bicycle Plan

The Nevada State Bicycle Plan provides an example of a statewide bicycle planning effort in a rural, low-population state. The Nevada State Bicycle Plan distills bicycle-related goals down to two measurable overall goals.

Goals

- Goal 1: Increase levels of bicycling throughout Nevada, doubling the number of trips made by bicycles by the year 2010 (with additional increases achieved by 2020).
- Goal 2: Reduce crashes involving bicyclists and motor vehicles by at least 10% by the year 2010 (with additional increases achieved by 2020).

Source

Nevada State Bicycle Plan (January, 2003)

New York City, New York

Population: 8,213,839

City Web site: www.nyc.gov

Photo: NYC DOT

New York City presents unique challenges and opportunities for bicyclists and bicycling. Its density contributes to low trip distances suited to bicycling, and the region's legendary traffic congestion provides an incentive to avoid private automobile trips. At the same time, city streets are particularly intimidating for bicyclists, particularly because of the high volume of vehicles, as well as the perception that drivers are aggressive. Nonetheless, New York City was recently awarded a bronze level Bicycle Friendly Communities ranking by the League of American Bicyclists. The City Bicycle Master Plan includes five specific goals.

Goals

- Goal 1: Implement and maintain the city's bicycle network and greenway system.
- Goal 2: Improve bicycle safety.
- Goal 3: Provide bicycle parking and support facilities.
- Goal 4: Improve bicycle access on bridges and mass transit facilities.
- Goal 5: Institutionalize cycling in public agencies and private organizations.

Source

New York City Bicycle Master Plan (May, 1997) (www.nyc.gov/html/dcp/html/bike/mp.shtml)

Oregon State

Population: 3,421,399

City Web site: www.oregon.gov

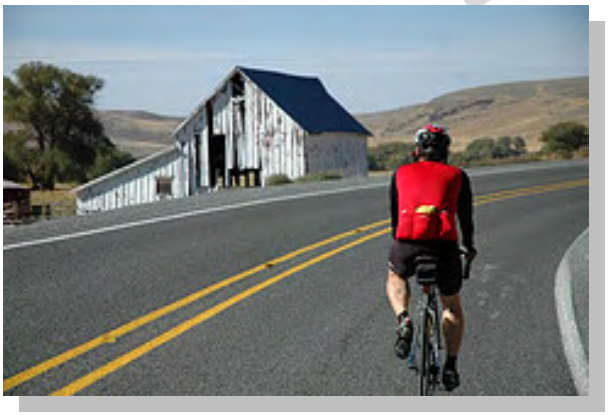


Photo: Jonathan Maus. Bikeportland.org

Oregon's Bicycle and Pedestrian Plan was adopted in 1995 and has served as a model and resource for the creation of hundreds of bicycle master plans across the US. Currently undergoing its first major revision, the Plan has widely been credited with creating high-quality bicycle facilities throughout the State of Oregon, and with defining Oregon as a bike-friendly state; in fact, though the State of Oregon ranks 27th nationally in population, it has six cities designated as Bicycle Friendly Communities by the League of American Bicyclists. The Plan defines a single overall goal, supported by specific actions and strategies to achieve that goal.

Goals

- Overall Goal: To provide safe, accessible and convenient bicycling and walking facilities and to support and encourage increased levels of bicycling and walking.
- Goal 1: Provide bikeway and walkway systems that are integrated with other transportation systems.
- Goal 2: Create a safe, convenient and attractive bicycling and walking environment.
- Goal 3: Develop education programs that improve bicycle and pedestrian safety.

Source

Oregon Bicycle and Pedestrian Plan (June, 1995)
(www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml)

Palo Alto, California

Population: 61,200

City Web site: www.cityofpaloalto.org

Photo: David Vignoni

Palo Alto is a Gold-level Bicycle Friendly Communities, as designated by the League of American Bicyclists. It is also home to the first bicycle boulevard (low-traffic residential street optimized for bicycles), a facility type that has become an important part of bikeway networks in many cities. While the Bicycle Transportation does not set overall goals or objectives, it does designate goals specific to the city's bikeway network.

Goals

The primary goals that were considered in developing the bikeway network for the City of Palo Alto were:

- Goal 1: To serve bicyclists of all levels and abilities.
- Goal 2: To serve all attractors and generators with direct, non-circuitous routes.
- Goal 3: To improve safety for bicyclists, motorists, and pedestrians alike.

Source

Bicycle Transportation Plan (May, 2003)
([www.cityofpaloalto.org/news/displaynews.asp?NewsID=499&TargetID=107)](http://www.cityofpaloalto.org/news/displaynews.asp?NewsID=499&TargetID=107)

Phoenix, Arizona

Population: 1,512,986

City Web site: www.phoenix.gov

Photo: City of Phoenix

Phoenix is one of the largest American cities. Located in the sunbelt, it receives little rain, which is conducive to bicycling, but scorching summer temperatures likely deter cycling as well. In 2001, the City updated its General Plan, which included a chapter on bicycling. The Bicycling Element provides three goals related to bicycling, followed by policies and recommendations.

Goals

- Goal 1: Bicycle Access – Increase bicycle access to destinations points within the City of Phoenix and maximize bicycle route connections with neighboring cities and areas controlled by Maricopa County.
- Goal 2: Ridership – Increase bicycle ridership within the City of Phoenix.
- Goal 3: Safety – Improve bicycling safety within the City of Phoenix.

Source

Bicycling Element of the Phoenix General Plan (December, 2001) (phoenix.gov/PLANNING/gpbic.pdf)

Portland, Oregon

Population: 529,121

City Web site: www.portlandonline.com

Photo: Jessica Roberts

Portland is considered by some to be the most bicycle-friendly city in the United States, having received Bicycling Magazine's title of "Best Bicycling City in the US" multiple times. It is the largest of the Platinum-rated Bicycle Friendly Communities awarded the League of American Bicyclists. The number of bicyclists has quadrupled since 1992 and the number of bikeway miles has more than tripled. The City's Bicycle Master Plan was adopted in 1996, and has been a model plan for many existing plans in other cities. The Plan stated one overarching goal followed by eight objectives to achieve the goal. The Plan is currently being updated.

Goals

Overall Goal: Make the bicycle an integral part of daily life in Portland, particularly for trips of less than five miles, by implementing a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer.

Objectives

- Goal 1: Complete a network of bikeways that serves bicyclists' needs, especially for travel to employment centers, commercial districts, transit stations, institutions, and recreational destinations.
- Goal 2: Provide bikeway facilities that are appropriate to the street classifications, traffic volume, and speed on all rights-of-ways.
- Goal 3: Maintain and improve the quality, operation and integrity of bikeway network facilities.
- Goal 4: Provide short- and long-term bicycle parking in commercial districts, along main streets, in employment centers and multifamily developments, at schools and colleges, industrial developments, special events, recreational areas, and transit facilities such as light rail stations and park-and-ride lots.

- Goal 5: Provide showers and changing facilities for commuting cyclists. Support development of such facilities in commercial buildings and at “Bike Central” locations.
- Goal 6: Increase the number of bicycle-transit trips. Support Tri-Met’s “Bikes on Transit” Program.
- Goal 7: Develop and implement education and encouragement plans aimed at youth, adult cyclists, and motorists. Increase public awareness of the benefits of bicycling and of available resources and facilities.
- Goal 8: Promote bicycling as transportation to and from school.

Source

City of Portland Bicycle Master Plan (May, 1996)
(www.portlandonline.com/shared/cfm/image.cfm?id=40414)

Roseville, California

Population: 109,154

City Web site: www.roseville.ca.us

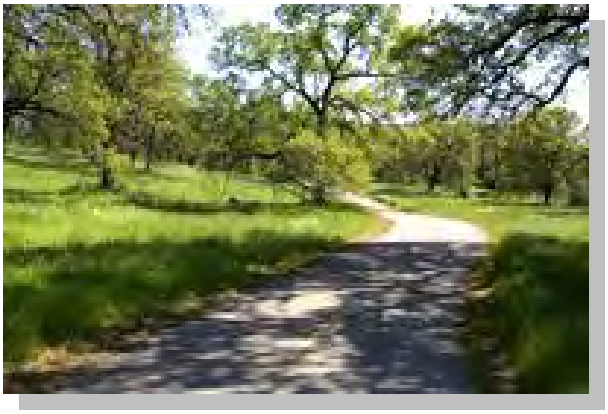


Photo: City of Roseville

Roseville received a Bronze-level Bicycle Friendly Communities award from the League of American Bicyclists in 2008. Their Bicycle Master Plan was most recently updated in 2008.

Goals

- Goal 1: Provide a well-connected bikeway system within the City of Roseville to improve the quality of life for all residents and visitors.
- Goal 2: Promote safe, convenient, and enjoyable cycling by establishing a comprehensive system of bikeways that link the City of Roseville to other communities in Sacramento and Placer County.
- Goal 3: Include bikeway facilities in all appropriate City development projects to facilitate on-site circulation for bicycle and pedestrian travel, on-site bicycle parking, and connections to the proposed system.
- Goal 4: Develop a bikeway system that enhances safety and convenience of bicycling to and within the City of Roseville.
- Goal 5: Maintain an updated system map and educational brochures to inform the public where and how to ride bicycles within the City.
- Goal 6: Avoid adverse environmental impacts associated with the implementation of the proposed system.
- Goal 7: Acquire sufficient funding to construct the proposed system within the next 15 years.

Source

The 2008 Roseville Bicycle Master Plan (December, 2008)
(www.roseville.ca.us/civica/filebank/blobdload.asp?BlobID=12898)

Sacramento, California
(City and County)

City Population: 407,018

County Population: 1,233,499

City Web site:
www.cityofsacramento.org

County Web site: www.saccounty.net

Photo: Scot Covevou

Sacramento's flat terrain and moderate weather are well-suited to bicycling. Sacramento has received a Gold-level Bicycle Friendly Communities award from the League of American Bicyclists. In 1993, a joint City/County Bikeway Master Plan was developed; it contains one overall goal, followed by six specific objectives and accompanying policy and program recommendations.

Goals

- Overall Goal: To develop a comprehensive updated Sacramento City/County Bikeways Master Plan which will meet the needs of the bicyclists.
- Goal 1: Coordination Objective – To develop and maintain a coordinated approach by City/County and other agencies to implement the plan as funding becomes available or as development occurs.
- Goal 2: Safety and Security Objective – To achieve the highest possible level of safety and security for cyclists.
- Goal 3: Design Objective – To provide adequate design consideration for bicycle facilities in all development plans and programs.
- Goal 4: Maintenance Objective – To develop a comprehensive bikeway maintenance program.
- Goal 5: Aesthetics Objective – To develop a bikeway system that incorporates aesthetics and the historical characteristics of the Sacramento area.
- Goal 6: Implementation Objective – To take necessary actions to implement the preceding Sections 1 thru 5.

Source

The 2010 Sacramento City/County Bikeway Master Plan (November, 1993 [County], April, 1995 [City]) (www.cityofsacramento.org/transportation/dot_media/engineer_media/pdf/bmp_final.pdf)

San Diego, California

Population: 1,233,400

City Web site: www.sandiego.gov

Photo: City of San Diego

San Diego, a populous Southern California city, enjoys a mild climate suited to bicycling. The San Diego Bicycle Master Plan, completed in 2002, is one of several California examples presented for consideration as part of developing the Sacramento County Bicycle Master Plan.

Goals

- Goal 1: Promote Bicycle Transportation

Make bicycle travel an integral part of daily life in San Diego, particularly for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer.

- Goal 2: Increase Bicycle Transportation

Make San Diego a model community for alternative transportation by aiming for a 10 percent mode share of all utilitarian trips to be made by bicycling by the year 2020.

- Goal 3: Improve the Local and Regional Bikeway Network

Identify an integrated system of bicycle lanes, routes and paths along with support facilities such as bicycle lockers and racks to serve local and regional commuting and recreational bicyclists.

- Goal 4: Increase the Benefits of Bicycling

Identify and implement a network of bicycle facilities to accommodate non-motorized travel that will reduce vehicle use, improve air quality, and provide health benefits.

Source

San Diego Bicycle Master Plan (May, 2002)
(www.sandiego.gov/planning/programs/transportation/mobility/bicycleplan.shtml)

San Francisco, California

Population: 744,041

City Web site: www.sfgov.org

Photo: ©2000 Museum of the City of San Francisco

San Francisco, despite its famous hills, is a vibrant city for bicyclists. It has an active bicycling community and has made tangible progress towards bicycle facility installation. It has received Gold-level Bicycle Friendly Communities designation from the League of American Bicyclists. The 2005 Bicycle Plan update provided an important example of a modern bicycle plan for a large American city. (That plan has been completed but is currently under legal review; nevertheless, its goals and policies are valuable models.)

Goals

- Overall goal: Make bicycling an integral part of daily life in San Francisco.
- Goal 1: Increase safe bicycle use.
- Goal 2: Refine and expand the existing bicycle route network.
- Goal 3: Ensure plentiful, high quality bicycle parking to complement the bicycle route network.
- Goal 4: Adopt bicycle-friendly practices and policies.
- Goal 5: Promote safe bicycling.
- Goal 6: Increase enforcement of bicycle-related violations.
- Goal 7: Prioritize and increase bicycle funding.

Source

Draft San Francisco Bicycle Plan: Policy Framework (May, 2005)
(www.sfmta.com/cms/bproj/documents/Draft_Entire_Plan_000.pdf)

Seattle, Washington

Population: 563,374

City Web site: www.seattle.gov

Photo: Seattle Bicycle Master Plan

Seattle's famous hills and challenging geography have been barriers to increasing bicycle modeshare in the past. Seattle's recently-updated Bicycle Master Plan designates two basic goals.

Goals

- Goal 1: Increase use of bicycling in Seattle for all trip purposes. Triple the amount of bicycling in Seattle between 2007 and 2017.
- Goal 2: Improve safety of bicyclists throughout Seattle. Reduce the rate of bicycle crashes by one third between 2007 and 2017.

Source

City of Seattle Bicycle Master Plan (May, 2007) ([www.seattle.gov/transportation/bikemaster.htm)](http://www.seattle.gov/transportation/bikemaster.htm)

Solano County, California

Population: 394,542

City Web site: www.solanocounty.com

Photo: Solano Countywide Bicycle Plan

Solano County's population is approximately comparable to that of the City of Sacramento, though it is spread over a wider area. The Solano Countywide Bicycle Plan provides an example of a bicycle master plan that includes both urban and suburban areas, as well as unincorporated communities.

Goals

- Goal 1: Maximize the increased use of bicycles and the development of a comprehensive regional bikeway system as a viable alternative to the automobile.
- Goal 2: Maximize the amount of state and federal funding for bikeway improvements that can be received by Solano County.
- Goal 3: Build upon the existing bikeway facilities and programs in Solano County.
- Goal 4: Develop a countywide bikeway system that meets the needs of commuter and recreation bicyclists, helps reduce vehicle trips, and links residential neighborhoods with destinations countywide.
- Goal 5: Maximize multi-modal connections to the Bikeway System.
- Goal 6: Improve bicycle safety conditions in Solano County.
- Goal 7: Develop detailed and ranked improvements in the Countywide Bicycle Plan.
- Goal 8: Encourage public participation and continuation of the Bicycle Advisory Committee.
- Goal 9: Develop a coordinated marketing strategy to encourage bicycling in Solano County.

Source

Solano Countywide Bicycle Plan (October, 2004)
([www.solanolinks.com/pdfs/Plans/STA%20Final%20Bike%20Plan%20OCT%202004%20v2.pdf)](http://www.solanolinks.com/pdfs/Plans/STA%20Final%20Bike%20Plan%20OCT%202004%20v2.pdf)

Toronto, Ontario, Canada

Population: 2,503,281

City Web site: www.toronto.ca

Photo: City of Toronto

Toronto is the largest city in Canada and home to North America's busiest freeway, Hwy 401. While Toronto does not currently attempt to count all bicyclists, cordon counts into downtown indicate that between 1987 and 1993, bicycle trips into the central city increased by 75 percent.

Goals

- Goal 1: To double the number of bicycle trips made in the City of Toronto, as a percentage of total trips, by 2011.
- Goal 2: To reduce the number of bicycle collisions and injuries.

The Plan is further broken up into six "spokes," or key focus areas, each of which has goals and objectives:

- Bicycle Friendly Streets
- Bikeway Network
- Safety and Education
- Promotion
- Cycling and Transit
- Bicycle Parking

Source

City of Toronto Bike Plan: Shifting Gears (June, 2001) (www.toronto.ca/cycling/bikeplan/index.htm)

Tucson, Arizona

Population: 529,790

City Web site: www.tucsonaz.gov

Photo: Tucson Department of Transportation

In recent years Tucson and surrounding Pima County have become a bicycling leader in the southwest. Home to the University of Arizona, the City hosts a sizeable college-aged population. Tucson's public outreach efforts are extensive; the City offers bicycling safety classes, informational brochures on bicycle commuting, and maps of bicycle facilities. In addition, they promote Bike Fest, a month-long celebration of bicycling aimed at promoting bicycling as an alternative mode of transportation. Tucson is one of the first cities in the United State to install a bike box. In 2006, the Tucson-Pima Eastern Region received a Gold Rating from the League of American Bicyclists. The Tucson General Plan includes a policy on bicycle facilities and four supporting policies.

Policy

Plan for bicycle facilities throughout the region that provide for the safe and efficient means of transportation and recreation throughout the greater Tucson metropolitan area.

Supporting Policies

- Supporting Policy 1: Promote bicycle travel as an alternative mode of transportation.
- Supporting Policy 2: Promote a system of bicycle facilities that provide a continuous, connective, safe, and accessible system.
- Supporting Policy 3: Promote bicycle safety education programs to increase awareness of and adherence to laws and regulations regarding bicycle use.
- Supporting Policy 4: Design bicycle facilities consistently throughout the region.

Source

2001 City of Tucson General Plan (November, 2001) ([www.tucsonaz.gov/planning/plans/genplan)](http://www.tucsonaz.gov/planning/plans/genplan)

Vancouver, British Columbia, Canada

Population: 578,041

City Web site: www.vancouver.ca

Photo: Jonathan Maus, Bikeportland.org

The City of Vancouver, British Columbia, has invested in a network of "greenways," traffic-calmed residential streets featuring public art, wayfinding tools, stormwater management treatments, and landscaping. These greenways complement, and in many cases overlap, a network of bike route streets that are optimized for bicycling. This extensive, connected, bike-friendly roadway network benefits cyclists and contributes to larger numbers of residents bicycling than had been seen in the past. The 1999 Bicycle Plan does not define goals but does set forth a series of eleven recommended actions.

Goals

- Goal 1: In order to ensure adequate distribution, and to offset the costs of producing the "Cycling in Vancouver" maps, sponsorship opportunities should be pursued.
- Goal 2: In order to maximize funding and accelerate construction of the bicycle network, funding applications through the Cycling Network Program and TransLink should continue to be actively pursued.
- Goal 3: Incorporate the Greenway Network into the Bicycle Network by providing facilities for recreational cyclists.
- Goal 4: Implement a new bike rack program that allows for options and flexibility and that results in an increase in racks in busy commercial areas.
- Goal 5: Count bicycles using both automated and manual methods to better determine bicycle volumes along the bikeways and other streets, and to further refine the peak hour factor for cyclists.
- Goal 6: Conduct bicycle cordon counts on a regular basis to accurately measure the modal split for bicycles and the effectiveness of cycling programs and initiatives.
- Goal 7: Monitor vehicle traffic along the bikeways and take remedial actions where needed.
- Goal 8: Monitor collisions involving cyclists to identify intersections or locations requiring modifications and to ensure a decline in the number and severity of bicycle collisions.
- Goal 9: Analyze crime statistics to ensure that there is a continued lack of correlation between crime and the presence of a bicycle facility.

- Goal 10: Develop the bicycle network to ensure a grid of bikeways approximately one kilometer apart.
- Goal 11: Enhance accommodation for bicycles on arterial streets where practical, and provide for cyclists in the planning and design of new and reconstructed arterial streets.
- Goal 12: Plan and construct a network of bike lanes in the downtown core, in conjunction with the Downtown Transportation Plan.

Source

1999 Bicycle Plan: Reviewing the Past, Planning the Future (1999)
(www.city.vancouver.bc.ca/engsvcs/transport/cycling/1999plan.htm)

West Hollywood, California

Population: 35,716

City Web site: www.weho.org

Photo: West Hollywood Bicycle and Pedestrian Mobility Plan

The City of West Hollywood is a small city that is part of the greater Los Angeles Metropolitan Area. The West Hollywood Bicycle and Pedestrian Mobility Plan, completed in 1999, is one of several California examples presented for consideration as part of developing the Sacramento County Bicycle Master Plan.

Goals

- Goal 1: Promote Bicycle Transportation

Make bicycle travel an integral part of daily life in West Hollywood by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving the multi-modal bicycle/transit connection, encouraging bicycle use, and making bicycling safer.

- Goal 2: Develop an Enhanced Bikeway Network

Implement a bicycle plan that serves the needs of different types of bicyclists (including those with lower skill levels, children, and experienced commuters), and defines a system of bicycle lanes, routes, and support facilities to serve local and regional commuting and recreational bicyclists.

- Goal 3: Enhance Bicycle Transportation Safety

Enhance bicycle safety in the City of West Hollywood by striving to reduce the number of bicycle-motor vehicle crashes while simultaneously increasing bicycle usage.

Source

West Hollywood Bicycle and Pedestrian Mobility Plan (1999)
(www.weho.org/index.cfm/fuseaction/DetailGroup/navid/55/cid/3254)

Wisconsin State

Population: 5,556,506

City Web site: www.wisconsin.gov

Photo: Bicycle Federation of Wisconsin

Home to Trek Bicycles (among other companies) in Wisconsin benefits economically from the bicycling sector; in fact, one report estimates that 20 percent of the US bicycle industry is based in Wisconsin. Wisconsin has many bicycling events and races every year, and three cities in the state have been recognized by the League of American Bicyclists as Bicycle Friendly Communities (Madison, Milwaukee, and La Crosse). Wisconsin's State Bicycle Transportation Plan sets forth one vision ("To establish bicycling as a viable, convenient, and safe transportation choice throughout Wisconsin"), followed by two overarching goals. The goals are followed by specific objectives organized into the "four Es" (Engineering, Education, Enforcement, and Encouragement).

Goals

- Goal 1: Increase levels of bicycling throughout Wisconsin, doubling the number of trips made by bicycles by the year 2010 (with additional increases achieved by 2020).
- Goal 2: Reduce crashes involving bicyclists and motor vehicles by at least 10 percent by the year 2010 (with additional increases achieved by 2020).

Source

Wisconsin Bicycle Transportation Plan 2020 (December, 1998)
(www.dot.wisconsin.gov/projects/state/docs/bike2020-plan.pdf)

ROUTINE ACCOMMODATION POLICIES

US DOT's Accommodating Bicycle and Pedestrian Travel

"Accommodating Bicycle and Pedestrian Travel: A Recommended Approach" is a policy statement that was adopted by the U.S. Department of Transportation (USDOT) in response to the Transportation Equity Act for the 21st Century (TEA-21). USDOT encourages public agencies, professional organizations, advocacy groups, and any other groups involved in transportation issues to adopt this policy to promote bicycling and walking as viable components of the transportation system. The four directives issued in this policy statement address measures to improve bicycle and pedestrian access, convenience, and safety in transportation projects. The Policy Statement specifically states that:

Bicycle and pedestrian ways shall be established in all urbanized areas unless one or more of three conditions are met:

- Bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.
- The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding 20 percent of the cost of the larger transportation project.
- Where scarcity of population or other factors indicate an absence of need.

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

Caltrans Deputy Directive 64

Caltrans recently adopted a policy directive – Deputy Directive 64 (DD-64) – related to non-motorized travel that reads:

> *"The Department fully considers the needs of non-motorized travelers (including pedestrians, bicyclists and persons with disabilities) in all programming, planning, maintenance, construction, operations and project development activities and products. This includes incorporation of the best available standards in all the Department's practices. The Department adopts the best practice concepts in the US DOT Policy Statement on Integrating Bicycling and Walking into Transportation Infrastructure."*

It is not clear what the effect of these policy directives will be on the planning, design, and funding of new transportation facilities. Although the USDOT policy encourages agencies and organizations to adopt this position, it does not state the possible repercussions if it is not embraced. Similarly, it is not certain how the Caltrans policy directive would apply to local jurisdictions or to streets that are not classified as "highways." Nonetheless, these policies reflect the growing concern that public agencies have shown to accommodate the needs of pedestrians and bicyclists in the design and operation of the transportation system.

Assembly Concurrent Resolution 211 (ACR 211)

ACR 211 passed the California State Assembly on Bike-to-Work Day in August 2002. The Resolution calls for "Integrating walking and biking into transportation infrastructure," and further encourages all cities and counties in California to implement the policies of DD-64 and the USDOT design guidance document when building local transportation infrastructure.

Routine Accommodation of Bicyclists and Pedestrians in the Bay Area

The Bay Area's Metropolitan Transportation Commission (MTC), the transportation planning, coordinating and financing agency for the San Francisco Bay Area, adopted a routine accommodations policy in 2006. The policy calls for creation and implementation of a checklist that promotes the routine accommodation of non-motorized travelers in project planning and design. Agencies will complete a checklist prior to submitting projects for funding from MTC. The checklist asks applicants if their study area is included in any bicycle or pedestrian plans and how the project does or does not meet the needs of non-motorized transportation users.

APPENDIX D:
EXISTING BICYCLE FACILITIES

APPENDIX D: EXISTING BICYCLE FACILITIES

TABLE D-1: EXISTING CLASS I BIKE PATHS

Street/Path Name	Start	End	Length (miles)
Ancil Hoffman Path	Tarshes Drive	End	0.2
Ashton Drive Connection	Jedediah Smith Memorial Path	Ashton Drive	0.1
Bannister Path	Bannister Park	Jedediah Smith Memorial Path	1.3
Bike/Ped Overcrossing	Turnbridge Drive	Le Donne Drive	0.2
Del Campo Park Path	Oleander Drive	Crestview Drive	0.3
Estates Drive Connection	Jedediah Smith Memorial Path	Estates Drive	0.3
Fish Hatchery Path	Lake Natoma Path	Folsom Boulevard	0.5
Florin Creek Path	Del Coronado Way	Persimmon Avenue	1.2
Folsom South Canal Path	State Route 16	Jedediah Smith Memorial Path	10.9
FTB Path	Mayhew Road	Butterfield Way	0.4
Illa Collin Park Path	Tillotson Parkway	Calvine Road	1.1
Jacob Lane Connector	Jedediah Smith Memorial Path	Jacob Lane	0.1
Jedediah Smith Memorial Path	Discovery Park	Folsom Dam	30.6
Laguna Creek Path	Bradshaw Road	Vineyard Road	1.0
Lake Natoma Path	Jedediah Smith Memorial Path	Folsom C.L.	5.6
Main Ave Path	Jedediah Smith Memorial Path	Main Avenue	0.4
Manlove Rd Overcrossing	Manlove Road	Salmon Falls Drive	0.2
Mather Field Path	Arnold Way	Femoyer Street	2.4
River Walk Way Connector	Jedediah Smith Memorial Path	River Walk Way	0.1
Sacramento Northern Path	Jedediah Smith Memorial Path	Elverta Road	8.8
Sunrise Boulevard Path	Point East Drive	Bridge Street	2.3
Teichert Mine Path	Jedediah Smith Memorial Path	Main Avenue	0.9
Tillotson Parkway	Power Inn Road	Smedberg Middle School	3.3
Verner Avenue Overcrossing	Verner Avenue	Jeanine Drive	0.1
		TOTAL	**72.3**

Source: Sacramento County Collision Data

TABLE D-2: EXISTING CLASS II BIKE LANES

Street/Path Name	Start	End	Length (miles)
10th Street	Oak Lane	U Street	0.4
28th Street	Elkhorn Boulevard	Elverta Road	1.6
42nd Street	49th Avenue	Cuny Avenue	0.1
47th Street	47th Avenue	51st Street	0.2
49th Avenue	MLK Jr. Boulevard	42nd Street	0.4
53rd Avenue	65th Street Expy	Sacramento C.L.	0.3
53rd Avenue	50th Street	Morrison Creek Path	0.6
65th Street Expy	Florin Road	Sacramento C.L.	0.4
6th Parkway	Sky Pkwy	Florin Road	0.3
A Pkwy	Franklin Boulevard	Center Pkwy	0.2
Airbase Drive	Watt Avenue	Madison Avenue	0.4
Alta Arden Expy	Ethan Way	Watt Avenue	1.1
American River Drive	Sacramento C.L.	Kingsford Drive	3.2
Antelope Road	Watt Avenue	Citrus Heights C.L.	2.4
Antelope Road North	Antelope Road	Placer County Line	0.6
Arden Way	Ethan Way	McClaren Drive	1.5
Bell Street	Auburn Boulevard	Northrop Avenue	0.5
Blue Oak Drive	Madison Avenue	Main Avenue	0.7
Bowling Drive	Cuny Avenue	Florin Road	0.6
Bradshaw Road	Mira Del Rio Drive	Calvine Road	5.6
Branch Center Road	Goethe Road	Kiefer Boulevard	0.7
Briggs Drive	Sacramento C.L.	Florin Road	0.5
Butano Drive	Watt Avenue	El Camino Avenue	0.5
California Avenue	Jan Drive	Oak Avenue	0.6
Calvine Road	SR 99	Grantline Road	4.6
Center Parkway	A Parkway	Sacramento C.L.	0.8
Chandler Drive	Stockton Boulevard	Lindale Way	0.1
College Oak Drive	Winding Way	Palm Avenue	0.2
Coloma Road	Sunrise Boulevard	Gold Country Boulevard	1.1
Coyle Avenue	Manzanita Avenue	Dewey Drive	0.7
Crestview Drive	Schuyler Drive	Winding Way	1.0
Cuny Avenue	42nd Street	Bowling Drive	0.1
Cypress Avenue	Pasadena Avenue	Manzanita Avenue	1.5
Don Julio Blvd	32nd Street	Placer County Line	2.0
E. Stockton Boulevard	Stockton Boulevard	Power Inn Road	1.1

TABLE D-2: EXISTING CLASS II BIKE LANES

Street/Path Name	Start	End	Length (miles)
Eastern Avenue	Edison Avenue	Fair Oaks Boulevard	2.3
Elk Grove-Florin Road	Florin Road	Calvine Road	1.9
Elkhorn Boulevard	Crossfield Drive	Citrus Heights C.L.	6.2
Elsie Avenue	Stockton Boulevard	Cottonwood Lane	0.9
Elverta Road	Rio Linda Boulevard	Antelope Road	2.6
Fair Oaks Boulevard	Howe Avenue	Citrus Heights C.L.	4.5
Folsom Boulevard	Sunrise Boulevard	Folsom City Limits	4.7
Franklin Boulevard	Sacramento C.L.	East Pkwy	2.4
French Road	Florin Road	Gerber Road	1.0
Garfield Avenue	Greenback Lane	Fair Oaks Boulevard	1.1
Gold Country Boulevard	Lake Natoma Path	Hazel Avenue	3.1
Gold Express Drive	Sunrise Boulevard	Gold Rush Drive	0.4
Gold Rush Drive	Gold Country Boulevard	Coloma Road	0.5
Greenback Lane	I-80	Citrus Heights C.L.	0.6
Hazel Avenue	White Rock Road	Placer County Line	3.4
Hillsdale Boulevard	Madison Avenue	Elkhorn Boulevard	0.1
Illinois Avenue	Sailor Bar	Greenback Lane	0.1
Jan Drive Path	Manzanita Avenue	Crestview Drive	0.5
Kiefer Boulevard	Grantline Road	SR 16	0.5
Kingsford Drive	Arden Way	End	0.8
La Riviera Drive	Watt Avenue	Folsom Boulevard	1.4
Larchmont Drive	Watt Avenue	Don Julio Boulevard	1.5
Lindale Way	Chandler Drive	Palmer House Drive	0.7
Madison Avenue	Roseville Road	Greenback Lane	3.9
Manlove Road	Montoya Street	Folsom Boulevard	0.3
Manzanita Avenue	Auburn Boulevard	Fair Oaks Boulevard	2.4
Marconi Avenue	SR 51	Fair Oaks Boulevard	1.6
Mayhew Road	Folsom Boulevard	Kiefer Boulevard	1.4
Mills Street	Huntington Drive	American River Drive	0.2
Mission Avenue	Engle Avenue	Fair Oaks Boulevard	1.0
MLK Jr. Boulevard	Fruitridge Road	Franklin Boulevard	1.3
North Loop Boulevard	Elverta Road	Don Julio Blvd	1.3
North Pkwy	Sky Pkwy	Sky Pkwy	0.1
Northrop Avenue	Watt Avenue	End	0.5
Oak Avenue	Wachtel Way	Folsom C.L.	0.2

TABLE D-2: EXISTING CLASS II BIKE LANES

Street/Path Name	Start	End	Length (miles)
Oak Lane	M Street	10th Street	0.1
Orange Grove Avenue	Auburn Boulevard	College Oak Drive	0.6
Pasadena Avenue	Auburn Boulevard	Winding Way	0.1
Pershing Avenue	Kenneth Avenue	Madison Avenue	1.5
Power Inn Road	Sacramento C.L.	Geneva Point Drive	2.3
Rio Linda Boulevard	Elverta Road	Sacramento C.L.	0.7
Rosemont Drive	Kiefer Boulevard	Mayhew Road	0.5
Roseville Road	Sacramento C.L.	Antelope Road	2.5
Saint James Drive	Crestview Drive	Dewey Drive	0.6
San Juan Avenue	Madison Avenue	End	0.8
Schuyler Drive	Madison Avenue	Crestview Drive	0.4
Steiner Drive	47th Avenue	North Pkwy	0.7
Stockton Boulevard	32nd Avenue	Sacramento C.L.	0.5
Stockton Boulevard	14th Avenue	21st Avenue	0.5
Stockton Boulevard	Sacramento C.L.	E. Stockton Boulevard	2.2
Sunrise Boulevard	Rancho Cordova C.L.	Grant Line Road	1.9
Sunrise Greens Drive	Summer Sky Drive	Elsie Avenue	0.4
Sunset Avenue	Isabella Avenue	Main Avenue	0.2
Tarshes Drive	California Avenue	End	1.0
Thornhill Drive	Kiefer Boulevard	SR 16	0.7
Walerga Road	Palm Avenue	Placer County Line	3.1
Walnut Avenue	Winding Way	Fair Oaks Boulevard	1.9
Waterman Road	New Connector	Calvine Road	0.8
Watt Avenue	Placer County Line	Folsom Boulevard	4.6
Wilhaggin Drive	Fair Oaks Boulevard	American River Drive	0.4
Winding Way	Auburn Boulevard	San Juan Avenue	1.2
		TOTAL	**122.2**

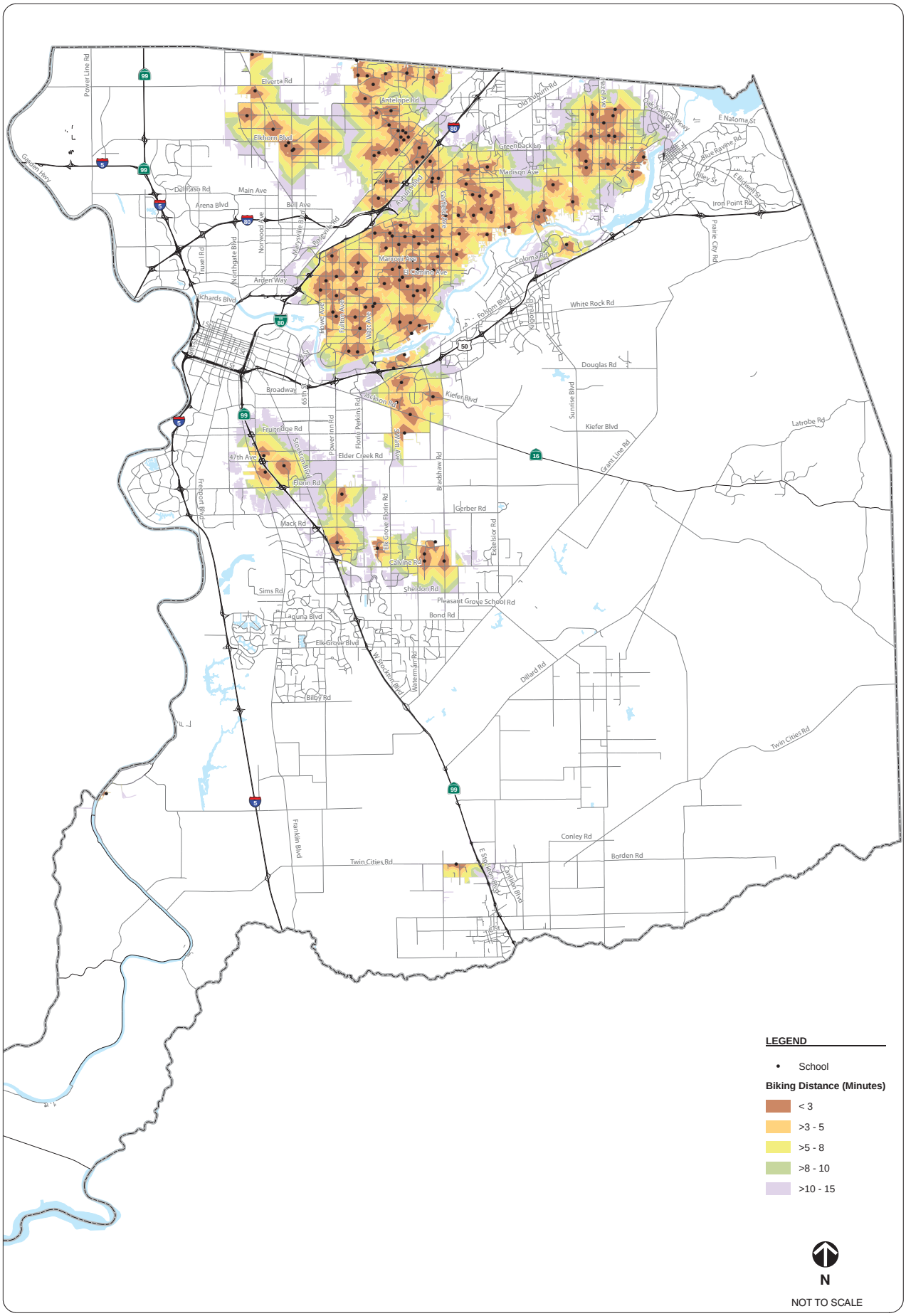
Source: Fehr & Peers

TABLE D-3: EXISTING CLASS III BIKE ROUTES

Street/Path Name	Start	End	Length (miles)
Bridge Street	Temescal Street	Bridge Street Bridge	0.2
California Avenue	Fair Oaks Boulevard	Jan Drive	0.3
California Avenue	Sutter Avenue	Grant Avenue	0.2
California Avenue	Landis Avenue	Kenneth Avenue	1.0
California Avenue	Tarshes Drive	Oak Avenue	0.4
Don Julio Boulevard	Watt Avenue	Elkhorn Boulevard	2.1
Garfield Avenue	Fair Oaks Boulevard	Cypress Avenue	2.4
Garfield Avenue	Cypress Avenue	Winding Way	1.0
Garfield Avenue	Marmith Avenue	Madison Avenue	0.2
Garfield Avenue	Verner Avenue	Greenback Lane	0.4
Hillsdale Boulevard	Madison Avenue	Elkhorn Boulevard	0.1
Jan Drive	Winding Way	Crestview Drive	0.2
Le Donne Drive	Underwood Way	47th Street	0.2
Oak Avenue	Fair Oaks Boulevard	California Avenue	0.2
Salmon Falls Drive	La Riviera Drive	Water Tree Way	0.5
		TOTAL	**9.4**

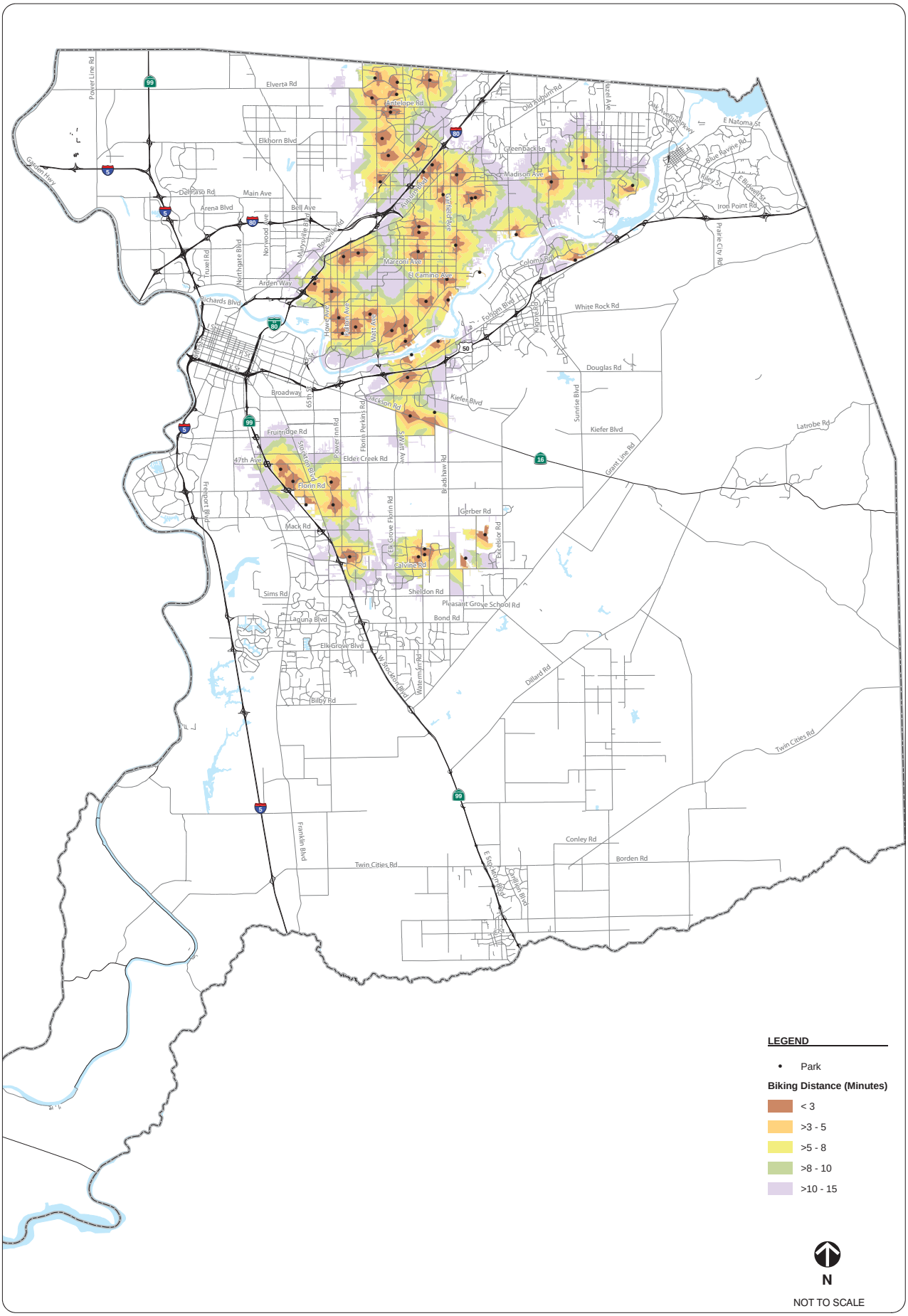
Source: Sacramento County Collision Data

APPENDIX E:
DEMAND/ATTRACTOR MAPS



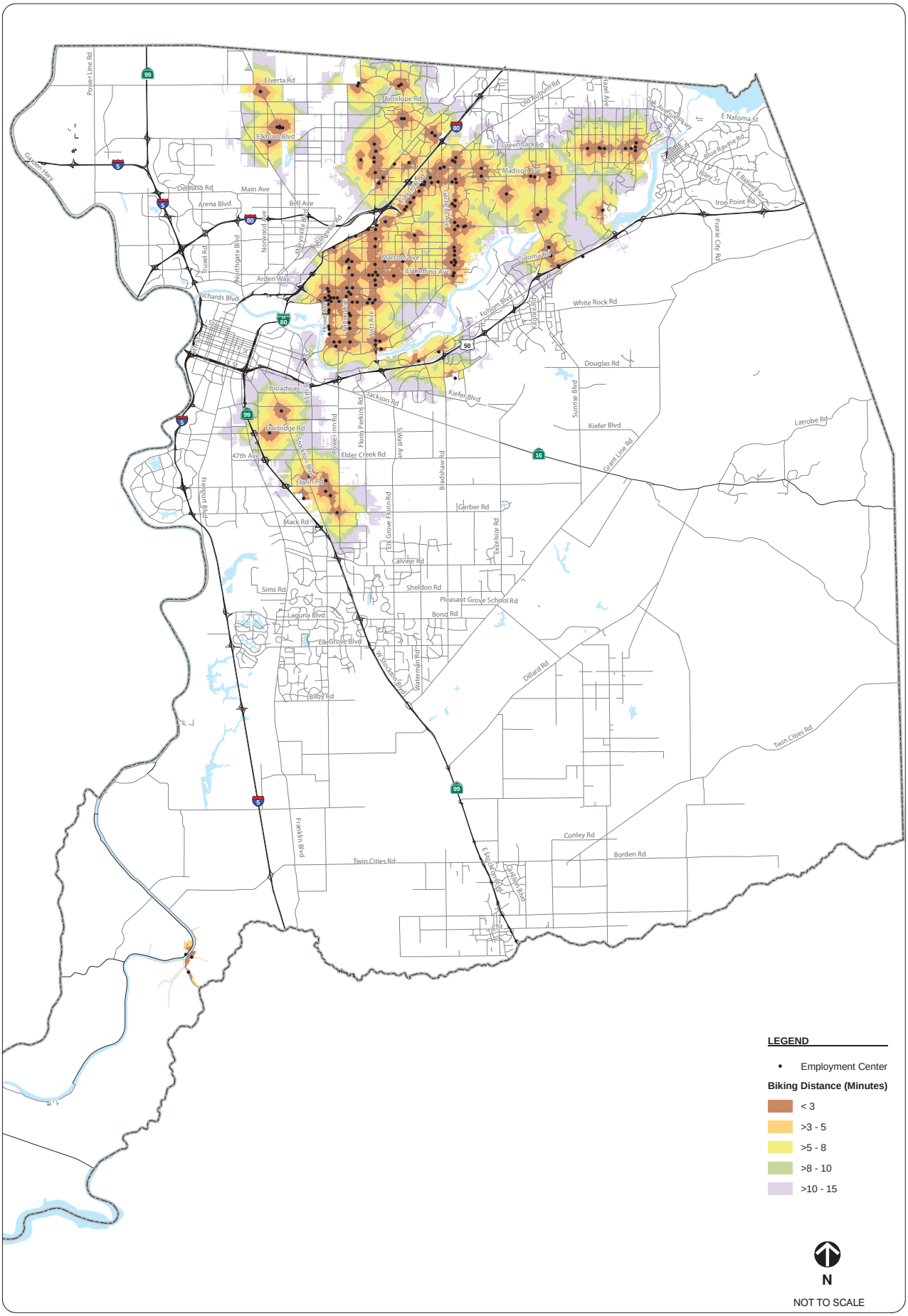
PROXIMITY TO SCHOOLS

FIGURE E-1



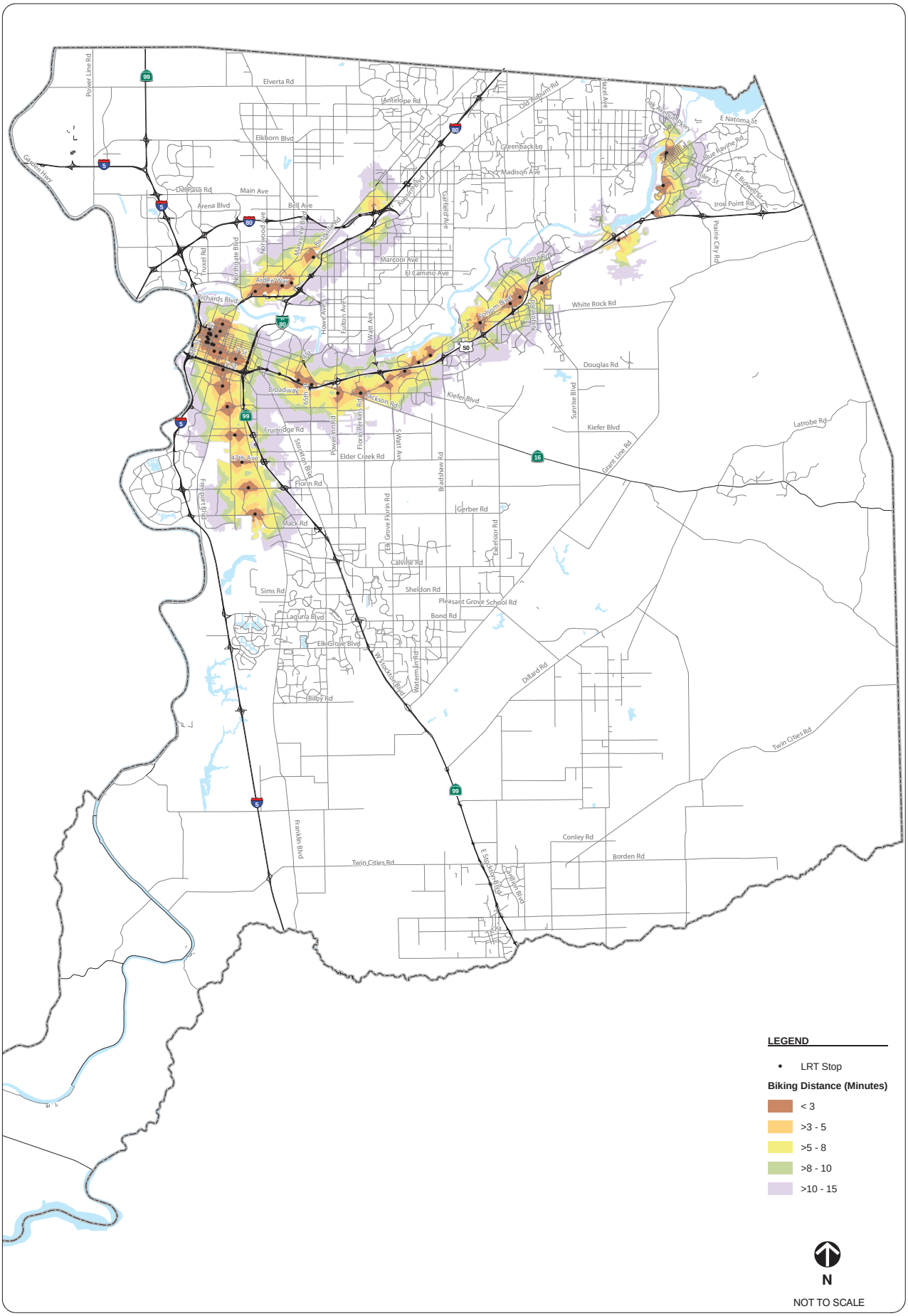
PROXIMITY TO PARKS

FIGURE E-2



PROXIMITY TO EMPLOYMENT CENTERS

FIGURE E-3



PROXIMITY TO LIGHT RAIL TRANSIT STOPS

FIGURE E-4

APPENDIX F:
SUITABILITY METHODOLOGY AND MAPS

APPENDIX F: SUITABILITY METHODOLOGY AND MAPS

This section presents factors used to determine suitability scores, followed by suitability maps.

TABLE F-1: SUITABILITY FACTORS FOR CLASS I ROUTES

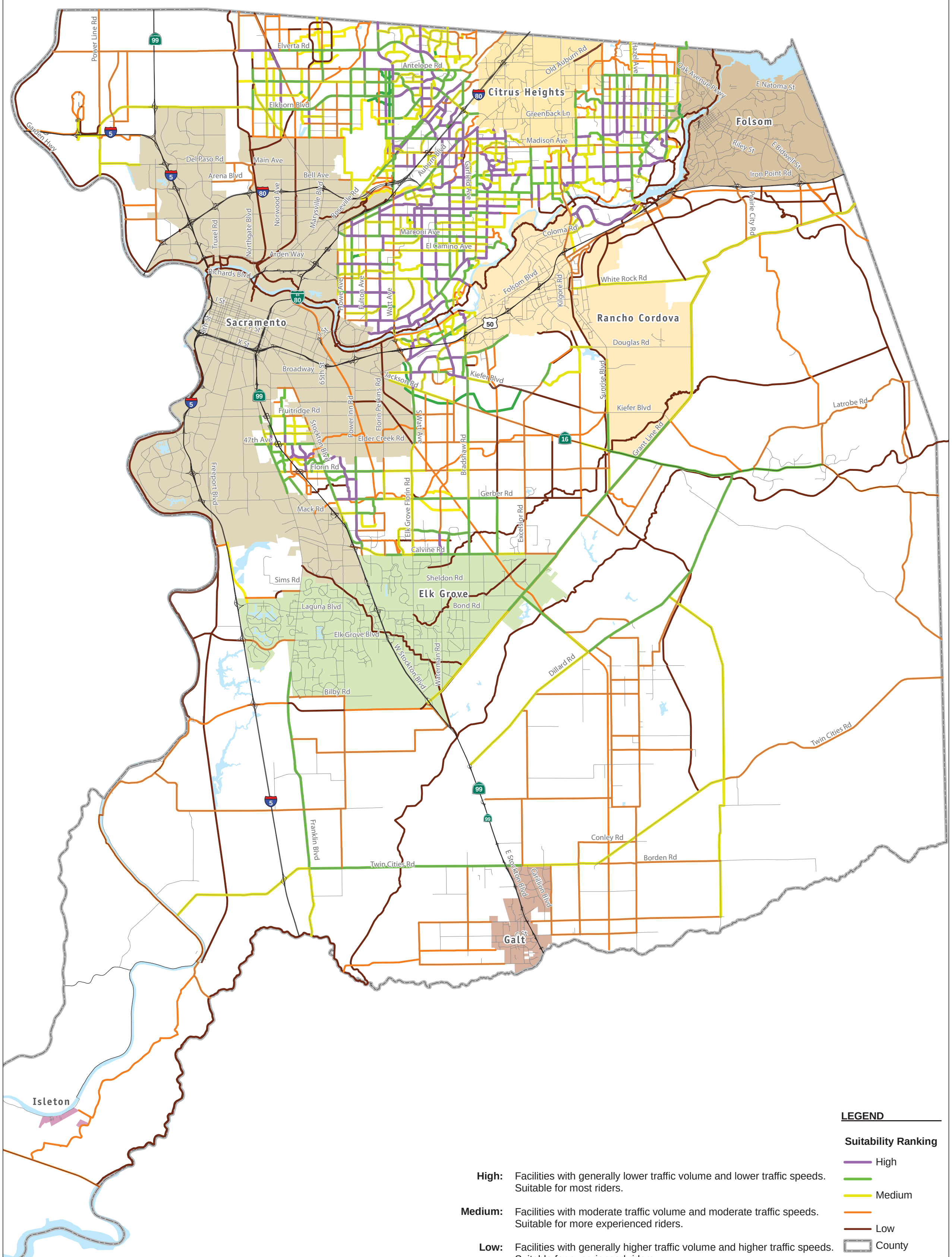
Variable	Value	Score
Proximity (in minutes)		
Parks	0 – 3	100
	3 – 5	80
	5 – 8	60
	8 – 10	40
	10 – 15	20
	> 15	0
Schools	0 – 3	100
	3 – 5	80
	5 – 8	60
	8 – 10	40
	10 – 15	20
	> 15	0
Employment Centers	0 – 3	100
	3 – 5	80
	5 – 8	60
	8 – 10	40
	10 – 15	20
	> 15	0
Light Rail Transit Stations	0 – 3	100
	3 – 5	80
	5 – 8	60
	8 – 10	40
	10 – 15	20
	> 15	0
Other Factors		
Priority Routes	No	-1.5x
Complexity	High	0
	Medium	50
	Low	100
Recreational Route	Yes	-1.5x

TABLE F-2: SUITABILITY FACTORS FOR CLASS II AND CLASS III ROUTES

Variable	Value	Score
On-Street Conditions		
Number of Lanes (by direction)	1	100
	2	60
	3	20
	4+	0
Posted Speed Limit	25 or less	100
	30	80
	35 or 40	60
	45	40
	> 45	20
Average Daily Traffic Volume (x 1,000)	< 4	100
	4 – 8	80
	8 – 14	60
	14 – 23	40
	> 23	20
Width of pavement (Stripe to edge of pavement)	> 6 feet of room for bicyclist No parking: > **6 feet** Parallel parking: > **14 feet**	100
	6 feet of room for bicyclist No parking: **6 feet** Parallel parking: **14 feet**	80
	5 feet of room for bicyclist No parking: **5 feet** Parallel parking: **13 feet**	60
	4 feet of room for bicyclist No parking, with curb: **3 feet** No parking, no curb: **4 feet** Parallel parking, with curb: **11 feet** Parallel parking, no curb: **12 feet**	40
	3 feet of room for bicyclist No parking, with curb: **2 feet** No parking, no curb: **3 feet** Parallel parking, with curb: **10 feet** Parallel parking, no curb: **11 feet**	20
Parking	No Parking	100
	Parking	0

TABLE F-2: SUITABILITY FACTORS FOR CLASS II AND CLASS III ROUTES		
Variable	**Value**	**Score**
Proximity (in minutes)		
Parks	0 – 3	100
	3 – 5	80
	5 – 8	60
	8 – 10	40
	10 – 15	20
	> 15	0
Schools	0 – 3	100
	3 – 5	80
	5 – 8	60
	8 – 10	40
	10 – 15	20
	> 15	0
Employment Centers	0 – 3	100
	3 – 5	80
	5 – 8	60
	8 – 10	40
	10 – 15	20
	> 15	0
Light Rail Transit Stations	0 – 3	100
	3 – 5	80
	5 – 8	60
	8 – 10	40
	10 – 15	20
	> 15	0
Safety		
Collision Density	0 – 6	100
	7 – 10	80
	11 – 18	60
	19 – 34	40
	35 +	20

TABLE F-2: SUITABILITY FACTORS FOR CLASS II AND CLASS III ROUTES		
Variable	**Value**	**Score**
Driveway Density	0 – 8	100
	9 – 14	80
	15 – 22	60
	23 – 27	40
	28 +	20
Other Factors		
Priority Routes	No	-1.5x



LEGEND

Suitability Ranking

- High
- Medium
- Low
- County

N

NOT TO SCALE

High: Facilities with generally lower traffic volume and lower traffic speeds. Suitable for most riders.

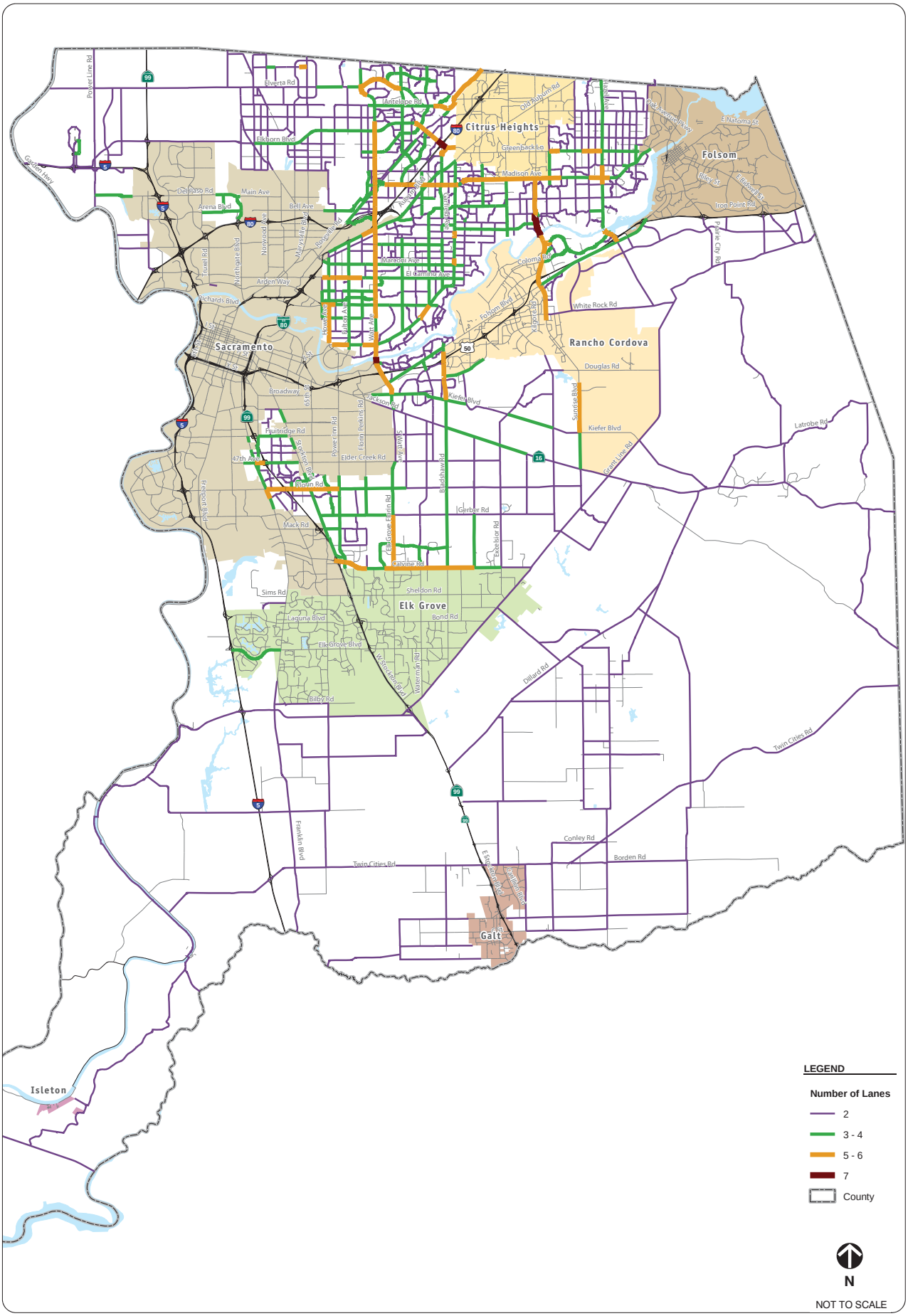
Medium: Facilities with moderate traffic volume and moderate traffic speeds. Suitable for more experienced riders.

Low: Facilities with generally higher traffic volume and higher traffic speeds. Suitable for experienced riders.

Note: Class I bike paths have a lower suitability ranking because of longer trip lengths. These facilities are generally suitable for all types of riders.

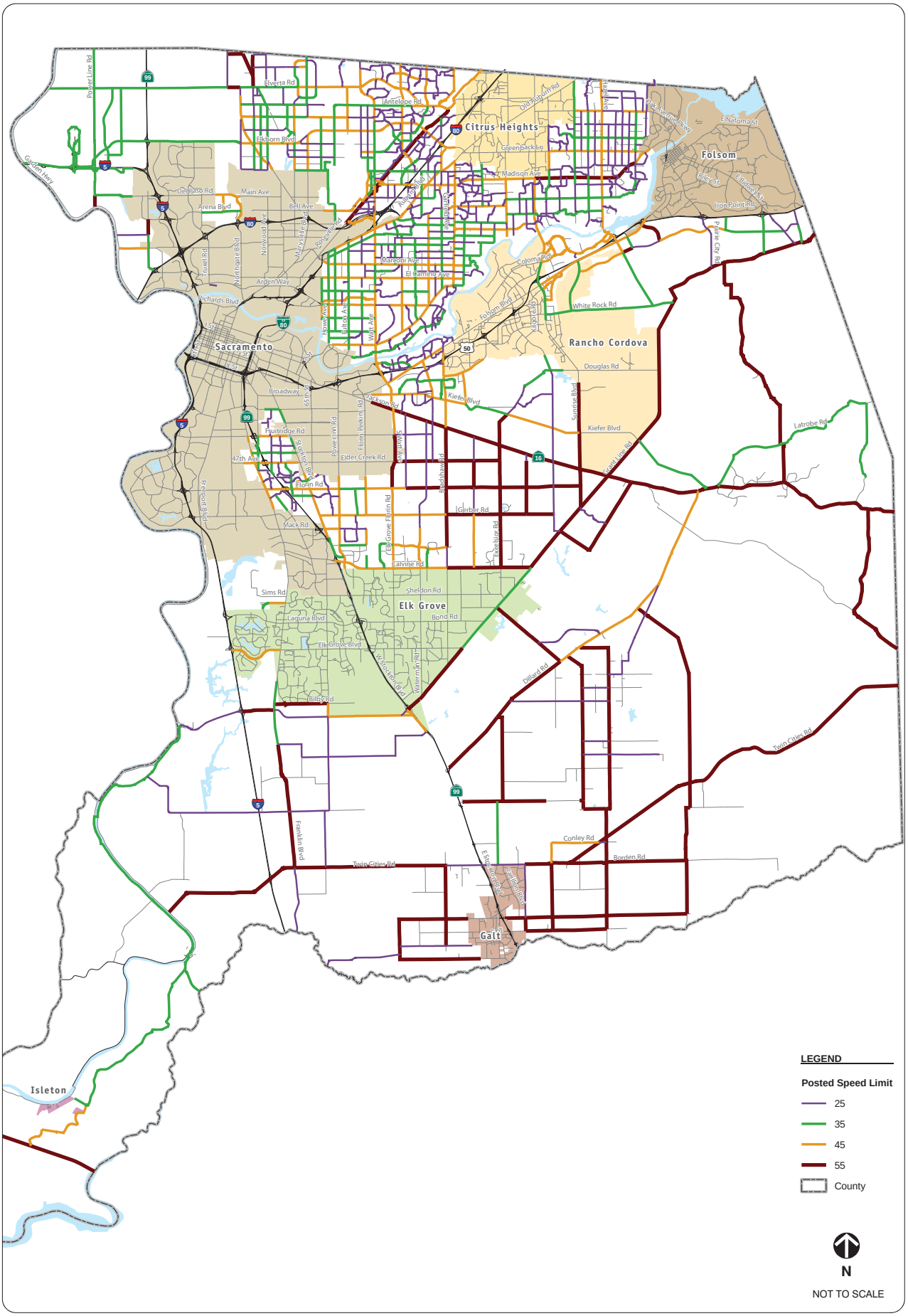
SUITABILITY RANKING

FIGURE F-1



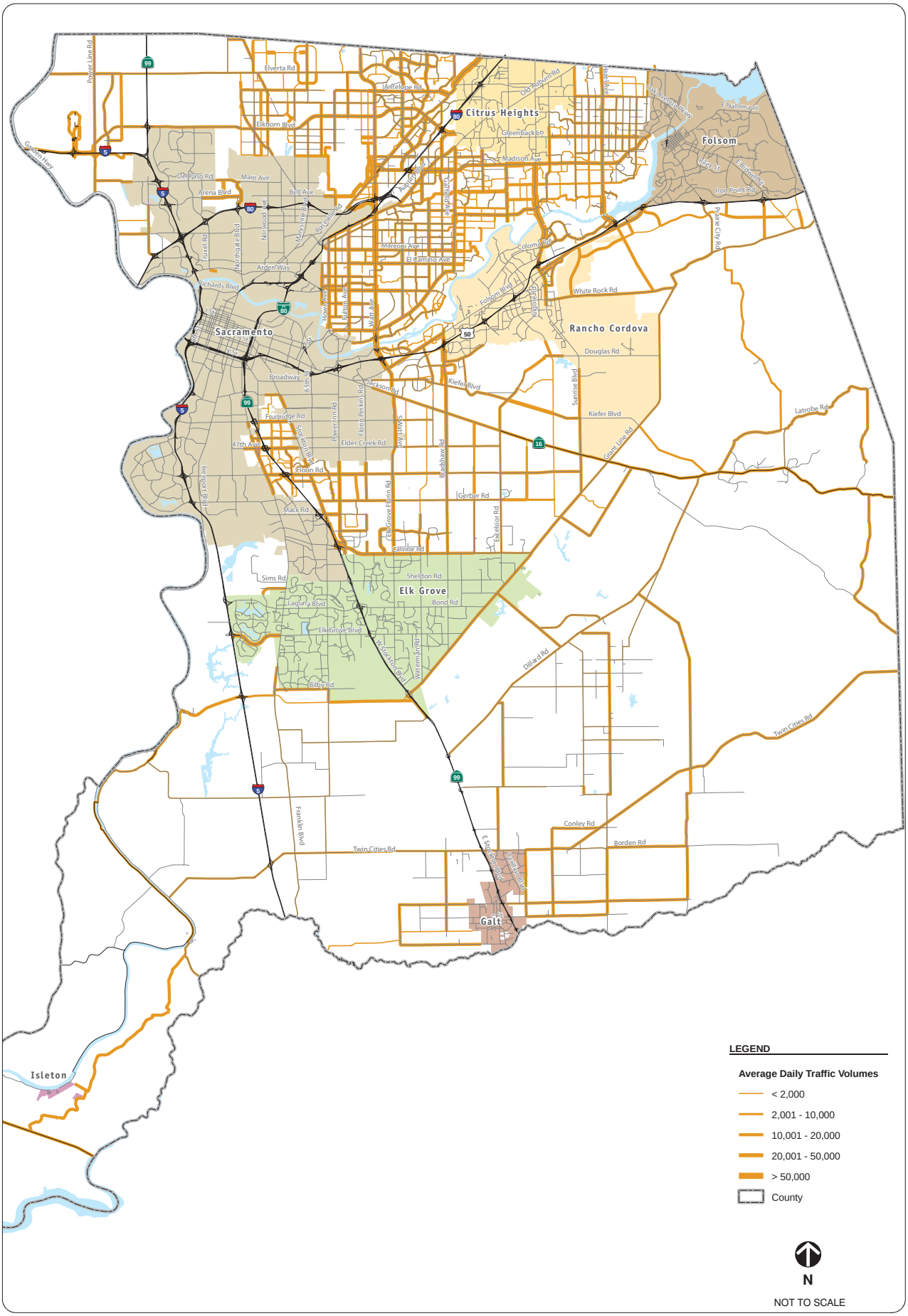
NUMBER OF LANES

FIGURE F-2



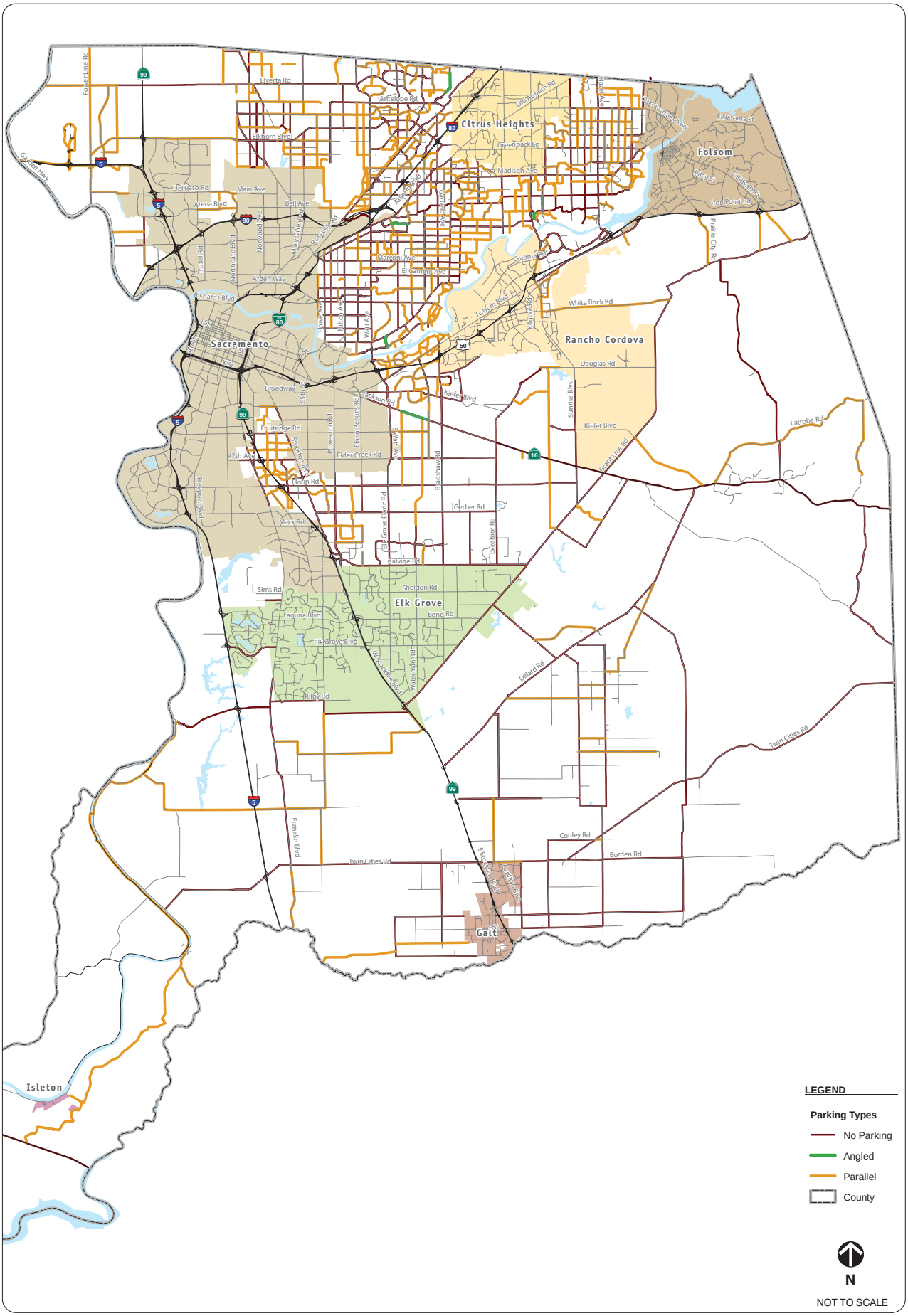
SPEED LIMIT

FIGURE F-3



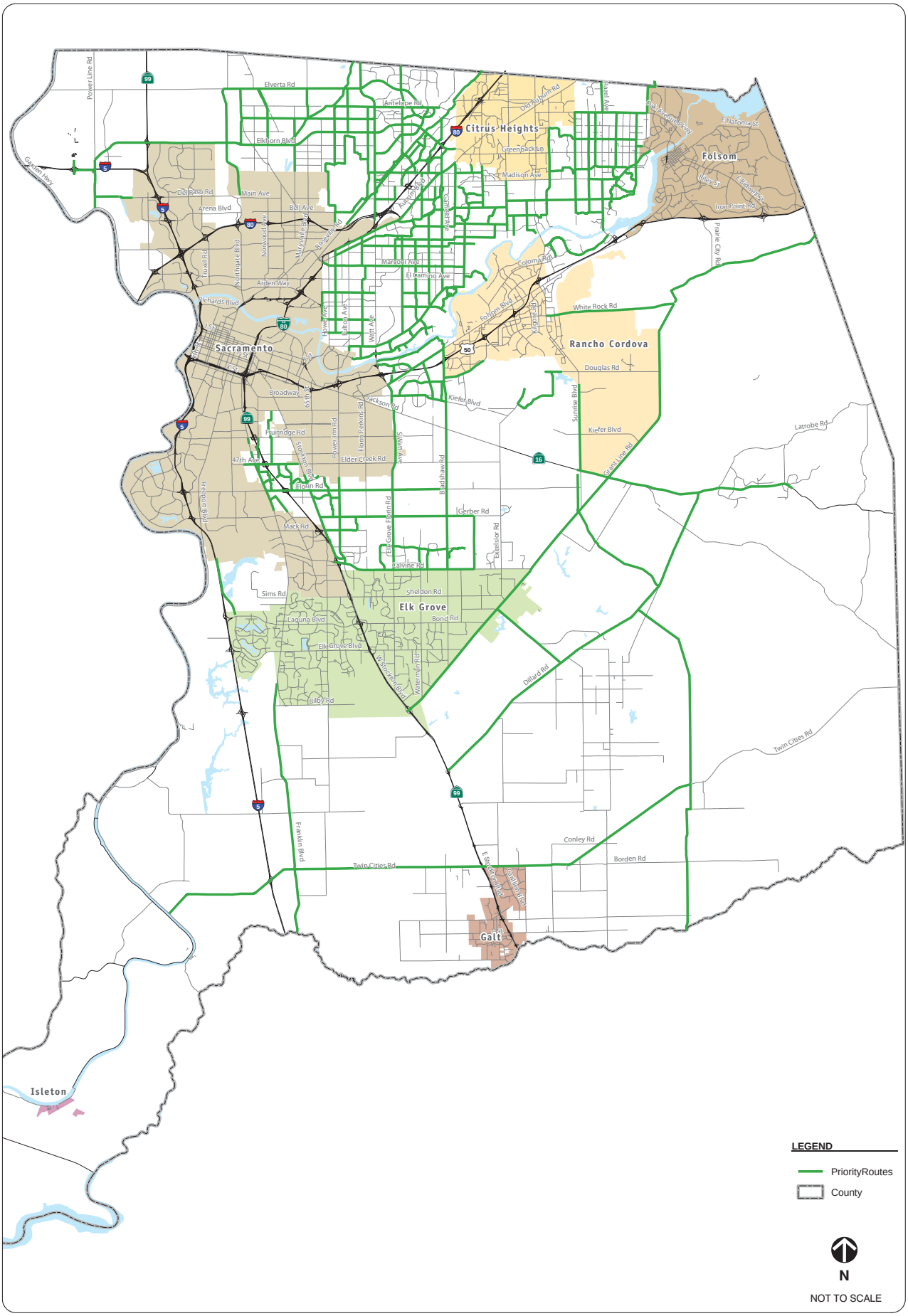
AVERAGE DAILY TRAFFIC VOLUMES

FIGURE F-4



ON-STREET PARKING TYPES

FIGURE F-5



ON-STREET PRIORITY ROUTES

FIGURE F-6

APPENDIX G:
PRIORITY LISTS

APPENDIX G: PRIORITY LISTS

This section includes the project priority lists for proposed bicycle path projects in Sacramento County. The information is presented in the following tables:

- Table G-1: Class I Crossings
- Table G-2: Class I Planned Facilities
- Table G-3: Class II Planned Facilities
- Table G-3: Class III Planned Facilities

ANALYSIS METHODOLOGY

This section describes the methodology used to determine the project priority score, which was used to develop the lists of projects. We used two scoring formulas: one for Class I bike paths and another for Class II and III on-street facilities.

Class I Bike Paths

The formula used to calculate the score for Class I bike paths is as follows:

Score = (P+S+E+T+Com)/5 + PR + RR

Where:

P = Distance to parks (minutes by bike) (0-100 score)

S = Distance to schools (minutes by bike) (0-100 score)

E = Distance to employment center (minutes by bike) (0-100 score)

T = Distance to LRT station (minutes by bike) (0-100 score)

Com = Project complexity to implement (engineering/environmental/community opposition) (0-100 score)

PR = Priority Route (yes/no) – determined by consultant team (-1.5 if answer is no)

RR = Recreation Route (yes/no) (-1.5 if answer is yes)

A score of 100 is best and a score of 0 is worst. A route can get a perfect score if travel time to a park, school, employment center, and LRT station is three minutes or less by bike, the project complexity is low, it is a priority route, and it is not a recreation route.

Table F-1 (in Appendix F) presents the detailed values for each of the equation variables.

Class II Bike Lanes and Class III Bike Routes

The formula used to calculate the score for Class II bike lanes and Class III bike routes is as follows:

Score = (P+S+E+T+ADT+L+SL+W+D+C+Pa)/11 + PR

Where:

P = Distance to parks (minutes by bike) (0-100 score)

S = Distance to schools (minutes by bike) (0-100 score)

E = Distance to employment center (minutes by bike) (0-100 score)

T = Distance to LRT station (minutes by bike) (0-100 score)

ADT = Daily traffic volume on the roadway (0-100 score)

L = Number of lanes (by direction) on the roadway (1 to 4+) (0-100 score)

SL = Speed Limit in MPH (25 to >45) (0-100 score)

W = Width of the bike lane (ft) (0-100 score)

D = Driveway density (driveways per mile) (0-100 score)

C = Bicycle collision density (bike collisions per mile) (0-100 score)

Pa = On-street parking (yes/no) (0-100 score) (score 0 if on-street parking is allowed)

PR = Priority Route (yes/no) – determined by consultant team (-1.5 if answer is no)

A score of 100 is best and a score of 0 is worst. A route can get a perfect score if travel time to a park, school, employment center, and LRT station is three minutes or less by bike, the number of lanes, ADT, speed limit, driveway density, and bicycle collision density on the roadway segment is low, the bike lane width is seven feet, and it is a priority route.

Table F-2 (in Appendix F) presents the detailed values for each of the equation variables.

The scores are for individual facility segments. The total facility score was calculated by multiplying the individual segment score by the segment length, adding all of the segment score weighted by distance, and then dividing by the total segment length.

Route score = (Segment score$_1$ x segment distance$_1$ + Segment score$_2$ x segment distance$_2$ …+ Segment score$_y$ x segment distance$_y$)/Total route length

TABLE G-1: CLASS I CROSSINGS

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Watt Avenue/ UPRR Crossing	Roseville Road	Watt Avenue	0.19	short	$207,000	8
Ancil Hoffman Bridge	Jedediah Smith Memorial Path	Ancil Hoffman Path	0.15	long	$6,000,000	0
Industry Drive (I-80) Overcrossing	Industry Drive	Industry Drive	0.13	long	$7,590,000	0
Jacob Lane Connector	So. American River Path	Jacob Lane	0.10	long	$7,990,000	5
Myrtle Avenue (I-80) Overcrossing	Myrtle Avenue	Myrtle Avenue	0.19	long	$5,560,000	8
Palm Avenue (I-80) Overcrossing	Palm Avenue	Palm Avenue	0.10	long	$6,177,000	5
Palm Avenue/ UPRR Crossing	Palm Avenue	A Street	0.26	long	$4,858,000	0
Sailor Bar Bridge	Jedediah Smith Memorial Path	Sailor Bar	0.19	long	$7,980,000	0
Winona Way/ UPRR Crossing	Roseville Road	Dudley Boulevard	0.05	long	$4,800,000	5

TABLE G-2: CLASS I PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Cottage Park Path	Morse Avenue	Cottage Way	0.14	short	$119,000	27
Jan Drive Path	Jan Drive	Jan Drive	0.05	short	$81,000	27
Oleander Drive Connection	Oleander Drive	Oleander Drive	0.15	short	$127,500	23
Phoenix Park Path	Groff Drive	Sunset Avenue	0.37	short	$314,500	22
Arnold Avenue Path	Peacekeeper Way	Palm Street	0.33	short	$281,000	21
Falcon View Path	Falcon View Drive	Poker Lane	0.24	short	$204,000	19
Phoenix/Windsock Connector	Windsock Avenue	Phoenix Avenue	0.03	short	$26,000	18
Santa Anita Park Path	Hernando Road	Bell Street	0.33	short	$281,000	18
Arcade Creek Path	Winding Way	Citrus Heights C.L.	6.14	short	$11,368,000	17
Watt Avenue Paseo Path	Freedom Park Drive	U Street	1.96	short	$1,680,000	17
Q Street Path	Watt Avenue	32nd Street	0.67	short	$567,000	16
Cowan School Path	Becerra Way	Clairidge Way	0.10	short	$79,000	15
Patrol Road	Dean Street	Kelly Way	4.80	short	$3,887,000	15
Elkhorn Path	Watt Avenue	Patrol Road Path	1.17	short	$996,000	14
Robla Creek Path	Watt Avenue	Patrol Road Path	0.77	short	$643,000	14
Placer Mine Connector	Jedediah Smith Memorial Path	Placer Mine Road	0.56	short	$511,000	13
Teichert Conveyor Path	Folsom Boulevard	Kiefer Boulevard	6.10	short	$5,054,000	13
Grant Avenue Path	Grant Avenue	Grant Avenue	0.10	short	$76,000	13
I-5 Path	Sacramento C.L.	Sacramento C.L.	2.29	short	$1,815,000	10
Sunrise Boulevard Path	Folsom Boulevard	Bridge Street	2.42	short	$15,800	10
Curragh Downs Path	Illinois Avenue	Curragh Downs Drive	0.05	short	$61,000	9
Florin Creek Path	Fleming Ave	Florin-Perkins Road	2.09	short	$1,720,000	8
Q Street Path	Sorento Road	Q Street	0.57	short	$519,000	8
Track Crossing Path	Unnamed Road	Roseville Road	0.11	short	$114,000	8
Morrison Creek Path	Florin Road	Conveyor Path	9.51	short	$7,836,000	8
Alder Creek Path	Hazel Avenue	Empire Ranch Road	6.94	short	$5,549,000	7
Waterman Path	Elder Creek Path	CCTC Path	0.93	short	$737,000	7
New Class I	9th Street	New Class 1	2.44	short	$1,984,000	7

TABLE G-2: CLASS I PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
New Class I	U Street	Cherry Brook Drive	1.22	short	$987,000	7
Gerber Creek Path	Elder Creek Path	Florin Road	4.51	short	$3,660,000	7
New Class I	El Verano Avenue	Gibson Ranch Park Road	2.86	short	$2,291,000	7
New Class I	U Street	Placer County Line	1.83	short	$1,504,000	7
Elder Creek Path	Folsom South Canal Path	Sacramento C.L.	12.91	short	$19,390,000	6
Golden Gate Avenue Path	Golden Gate Avenue	Golden Gate Avenue	0.12	short	$102,000	6
Sacramento Northern Path	Jedediah Smith Memorial Path	Placer County Line	10.27	short	$1,200,000	6
Escobar Way Connector	So. American River Path	Escobar Way	0.12	short	$92,000	5
Tillotson Parkway	Power Inn Road	Smedberg Middle School	3.62	mid	$294,000	8
Elm Avenue Path	Elm Avenue	Elm Avenue	0.07	mid	$102,000	6
White Rock Path	Grant Line Road	El Dorado County Line	5.89	mid	$4,683,000	5
Grant Line Path	Mosher Road	White Rock Road	18.86	mid	$7,567,000	5
So. American River Path	Watt Avenue	Gristmill Park	2.78	mid	$2,233,000	5
Ascot Avenue Path	4th Street	Dry Creek Road	1.00	mid	$819,000	4
Sailor Bar Path	Natomas Street	Illinois Avenue	1.22	mid	$966,000	4
Dry Creek Path	Ueda Path	Placer County Line	6.86	mid	$5,568,000	4
Gibson Ranch Park Road	Unnamed Road	End	0.28	mid	$222,000	4
Union Pacific RR Path	Sacramento C.L.	Florin Road	6.89	mid	$17,657,000	4
New Class I Connector	Harvest Falls Drive	Dry Creek Path	0.12	mid	$102,000	4
Santa Juanita Path	Oak Avenue	Placer County Line	0.98	mid	$783,000	4
I-5 Path Connector	I-5 Path	Sacramento River Path	0.39	mid	$12,340,000	4
Mercantile Drive Connector	Folsom South Canal Path	Mercantile Drive	0.11	mid	$90,000	4
New Class I Connector	Dry Creek Path	U Street	0.08	mid	$89,000	4
Placer County Trail	Hickory Avenue	Santa Juanita Trail	2.41	mid	$1,925,000	4
Routier Path	Old Placerville Road	SR 160	2.74	mid	$2,276,000	4

TABLE G-2: CLASS I PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
I-5 Path Connector	Dwight Road	I-5 Path	1.08	mid	$887,000	3
Granite Avenue Path	Granite Avenue	Hadleigh Drive	0.46	mid	$367,000	3
Arden Way Connector (Additional)	Jedediah Smith Memorial Path	Arden Way	0.15	mid	$121,000	3
Placerville Road Path	Folsom C.L.	El Dorado County Line	3.01	mid	$8,428,000	3
WPA Powerline Path	Fair Oaks Boulevard	Hazel Avenue	3.38	mid	$2,804,000	3
CCTC Path	Power Inn Road	San Joaquin C.L.	23.58	mid	$2,499,000	3
Mayhew Drain Path	Folsom Boulevard	So. American River Path	0.77	mid	$684,000	3
Deer Creek Path	Alder Creek Path	Cosumnes River Path	13.25	mid	$1,190,000	1
Folsom South Canal Path	Twin Cities Road	Jedediah Smith Memorial Path	25.06	mid	$1,345,000	1
Cosumnes River Path	Mokelumne River Path	El Dorado County Line	37.02	mid	$2,932,000	0
Isleton-Stone Lakes Path	Walnut Grove	Sacramento River Path	14.29	mid	$1,132,000	0
Mokelumne River Path	Cosumnes River Path	SR 12	19.03	mid	$1,558,000	0
Sacramento River Path	Hood-Franklin Road	Sacramento C.L.	7.96	mid	$6,437,000	0
Calvine Road Trail	Bruceville Road	Calvine Road	0.67	long	$543,000	3
Northrop Ave Trail	Northrop Ave	Jedediah Smith Memorial Path	0.09	long	$20,000	3
Florin Creek Path	Palmer House Drive	Persimmon Avenue	1.50	long	$1,200,000	1
Ascot Avenue Connector	Nemdec Path	Ascot Avenue	0.15	long	$128,000	0
Elk Grove UPRR Path	Cosumnes River Path	Elk Grove Creek Path	2.86	long	$2,431,000	0
L Street Path	Teichert Mine Path	L Street	0.09	long	$77,000	0
Laguna Creek Path	Elk Grove C.L.	Deer Creek Path	22.67	long	$19,160,000	0
Nemdec Path	Del Paso Road	Sutter County Line	5.74	long	$4,568,000	0
Pershing Avenue Path	Main Avenue	Jedediah Smith Memorial Path	0.88	long	$753,000	0
Hedge Ave Path	McCoy Ave	Elder Creek Path	1.65	long	$1,350,000	0
Gardner Ave Path	Elder Creek Path	Sacramento CL	1.43	long	$1,173,000	0

TABLE G-2: CLASS I PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Rogers Road Path	Florin Road	Churchhill Downs Park	1.47	long	$1,200,000	0
New Path	Leland Ave	Rogers Rd Path	1.03	long	$844,000	0
Passalis Ln Path	Elder Creek Path	Union House Creek	1.04	long	$853,000	0
River Road Path	Sacramento C.L.	Sutter County Line	15.74	long	$37,468,000	0
Stone Lakes Refuge Path	I-5	Sacramento River Path	1.92	long	$1,632,000	0

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Morse Avenue	Cottage Way	Fair Oaks Boulevard	2.01	short	$96,000	74
California Avenue	Jan Drive	Oak Avenue	2.50	short	$90,000	72
Jan Drive	Manzanita Avenue	Crestview Drive	1.20	short	$32,000	68
Hurley Way	Ethan Way	Watt Avenue	2.00	short	$613,000	66
Dewey Drive	Citrus Heights C.L.	Winding Way	1.59	short	$486,000	66
Norris Avenue	Engle Road	Marconi Avenue	1.09	short	$52,000	66
Edison Avenue	Howe Avenue	Pasadena Avenue	3.62	short	$172,000	65
Northrop Avenue	Watt Avenue	End	1.88	short	$66,000	65
Winding Way	Auburn Boulevard	San Juan Avenue	4.31	short	$968,000	65
Oak Hollow Drive	Walerga Road	Tacomic Drive	0.68	short	$32,000	65
Saverien Drive	Fair Oaks Boulevard	American River Drive	0.34	short	$16,000	65
47th Street	47th Avenue	51st Street	0.58	short	$19,000	65
Engle Avenue	Norris Avenue	Fair Oaks Boulevard	2.13	short	$101,000	64
Wings Way	Watt Avenue	Poplar Boulevard	0.24	short	$11,000	64
Rosemont Drive	Kiefer Boulevard	Mayhew Road	1.49	short	$48,000	64
Garfield Avenue	Greenback Lane	Fair Oaks Boulevard	5.40	short	$206,000	64
Hemlock Street	Myrtle Avenue	Palm Avenue	0.50	short	$24,000	64
Walerga Road	Palm Avenue	Placer County Line	4.23	short	$333,000	64
Moraga Drive	Jan Drive	Dewey Drive	0.56	short	$27,000	64
Morse Avenue	Marconi Avenue	El Camino Avenue	0.51	short	$24,000	64
Verner Avenue	Palm Avenue	Garfield Avenue	0.93	short	$44,000	64
Eastern Avenue	Edison Avenue	Fair Oaks Boulevard	3.66	short	$429,000	64
Cottage Way	Ethan Way	Watt Avenue	2.00	short	$611,000	63
Palmer House Drive	Florin Road	Gerber Road	1.06	short	$50,000	63
Palm Avenue	I-80	Auburn Boulevard	0.73	short	$35,000	63
Mission Avenue	Engle Avenue	Fair Oaks Boulevard	3.10	short	$99,000	63
Morse Avenue	Auburn Boulevard	Marconi Avenue	1.08	short	$51,000	63
Appalachian Drive	Escobar Way	Bradshaw Road	0.09	short	$4,000	63
Sunset Avenue	Isabella Avenue	Main Avenue	4.55	short	$204,000	63
Grant Avenue	Sue Pam Way	End	0.99	short	$47,000	62
Pershing Avenue	Kenneth Avenue	Madison Avenue	2.02	short	$24,000	62
34th Street	U Street	Freedom Park Drive	1.96	short	$599,000	62
Cottage Way	Eastern Avenue	Walnut Avenue	1.00	short	$48,000	62
Parkoaks Drive	Citrus Heights C.L.	Coyle Avenue	0.33	short	$16,000	62
Escobar Way	Mira Del Rio Drive	Appalachian Drive	0.28	short	$13,000	62
Beech Avenue	Pershing Avenue	Oak Avenue	2.01	short	$95,000	62

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Sutter Avenue	Fair Oaks Boulevard	Hollister Avenue	1.50	short	$71,000	62
Whitney Avenue	Morse Avenue	Sue Pam Drive	3.24	short	$994,000	62
Folsom Boulevard	South Watt Avenue	Rancho Cordova C.L.	2.48	short	$983,000	61
Walnut Avenue	Winding Way	Fair Oaks Boulevard	3.41	short	$70,000	61
College Oak Drive	Winding Way	Palm Avenue	1.65	short	$433,000	61
Mayhew Road	Folsom Boulevard	Oxwood Drive	1.77	short	$38,000	61
Treecrest Avenue	Fair Oaks Boulevard	Lumina Way	0.49	short	$23,000	61
Myrtle Avenue	Roseville Road	I-80	1.01	short	$48,000	61
Oak Avenue	Fair Oaks Boulevard	California Avenue	0.41	short	$19,000	60
Winding Oak Drive	Madison Avenue	Main Avenue	1.03	short	$49,000	60
Carmelo Drive	Arden Way	Shelfield Drive	0.39	short	$18,000	60
Stollwood Drive	Winding Way	Lincoln Avenue	0.75	short	$35,000	60
Skyridge Drive	Beauregard Way	Pershing Avenue	0.05	short	$2,000	60
Central Avenue	Woodmore Oaks Drive	Santa Juanita Avenue	3.30	short	$157,000	60
Marconi Avenue	SR 51	Fair Oaks Boulevard	4.94	short	$1,034,000	60
Shelfield Drive	Carmelo Drive	Fair Oaks Boulevard	0.56	short	$27,000	59
U Street	24th Street	Watt Avenue	1.48	short	$453,000	59
Diablo Drive	Hillsdale Boulevard	Roseville Road	2.06	short	$98,000	59
Kenneth Avenue	Oak Avenue	Winding Way	3.85	short	$1,180,000	59
Monument Drive	Antelope Road	Don Julio Boulevard	0.64	short	$30,000	59
Sue Pam Way	Whitney Avenue	Grant Avenue	0.13	short	$6,000	59
Illinois Avenue	Sailor Bar	Greenback Lane	2.87	short	$132,000	59
Poplar Boulevard	Wings Way	A Street	0.35	short	$17,000	59
Manzanita Avenue	Auburn Boulevard	Fair Oaks Boulevard	2.52	short	$26,000	59
Oakbank Drive	Diablo Drive	Jeanine Drive	0.05	short	$3,000	59
Jeanine Drive	Oak Bank Drive	I-80 Overcrossing	0.13	short	$6,000	59
MLK Jr. Boulevard	Fruitridge Road	Franklin Boulevard	1.33	short	$7,000	58
Bell Street	Auburn Boulevard	Northrop Avenue	3.10	short	$123,000	58
Main Avenue	Sunset Avenue	Oak Avenue	3.37	short	$1,031,000	58
Beauregard Way	Madison Avenue	Skyridge Drive	0.57	short	$27,000	58
Filbert Avenue	Pershing Avenue	Oak Avenue	2.20	short	$105,000	58
Auburn Boulevard	Howe Avenue	Citrus Heights C.L.	5.98	short	$1,831,000	58
Roseville Road	Sacramento C.L.	Antelope Road	5.85	short	$1,014,000	58
Elverta Road	Rio Linda Boulevard	Antelope Road	6.63	short	$1,601,000	57

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Gilman Way	Santa Fe Way	Kirkby Way	0.65	short	$31,000	57
San Vincente Way	A Street	Santa Fe Way	0.05	short	$2,000	57
Jacob Lane	Fair Oaks Boulevard	American River Drive	0.39	short	$19,000	57
Winding Way	San Juan Avenue	Fair Oaks Boulevard	1.25	short	$59,000	57
Palm Avenue	Roseville Road	I-80	1.04	short	$49,000	57
Lincoln Avenue	Manzanita Avenue	San Juan Avenue	1.96	short	$93,000	57
Waterton Way	Twin Falls Drive	Salmon Falls Drive	0.42	short	$20,000	56
Groff Drive	La Serena Drive	End (Phoenix Park)	0.09	short	$4,000	56
Orangevale Avenue	Main Avenue	Folsom City Limits	0.25	short	$12,000	56
Power Inn Road	Sacramento C.L.	Geneva Point Drive	3.56	short	$383,000	56
Hillsdale Boulevard	Madison Avenue	Elkhorn Boulevard	2.44	short	$708,000	56
South Watt Avenue	Folsom Boulevard	Florin Road	4.01	short	$1,589,000	56
Rio Linda Boulevard	Elverta Road	Sacramento C.L.	3.25	short	$772,000	55
Lumina Way	Sheraton Drive	Treecrest Avenue	0.63	short	$30,000	55
James Way	Dudley Boulevard	Watt Avenue	0.25	short	$76,000	55
A Street	Watt Avenue	Poplar Boulevard	0.46	short	$22,000	55
La Tour Drive	Don Julio Boulevard	Antelope Road	0.66	short	$31,000	55
Morse Avenue	El Camino Avenue	Cottage Park	0.37	short	$18,000	55
Palm Drive	Fair Oaks Boulevard	California Avenue	0.38	short	$18,000	55
Runway Drive	Sunset Avenue	Phoenix Avenue	0.54	short	$26,000	55
24th Street	U Street	McClellan Perimeter Road Trail	2.27	short	$108,000	54
Hickory Avenue	Greenback Lane	End	2.02	short	$96,000	54
Myrtle Avenue	I-80	Hemlock Street	1.36	short	$64,000	53
San Juan Avenue	Madison Avenue	End	2.16	short	$428,000	53
20th Avenue	42nd Street	44th Street	0.12	short	$6,000	53
26th Avenue	44th Street	42nd Avenue	0.07	short	$3,000	53
42nd Street	26th Avenue	20th Avenue	0.42	short	$20,000	53
44th Street	Fruitridge Road	26th Avenue	0.23	short	$11,000	53
44th Street	20th Avenue	Sacramento C.L.	0.35	short	$17,000	53
Santa Fe Way	San Vincente Way	Gilman Way	0.48	short	$23,000	53
Wilbur Way	Gerber Road	Elsie Avenue	0.53	short	$25,000	53
Oak Avenue	Wachtel Way	Folsom C.L.	2.70	short	$755,000	52
Old Placerville Road	Bradshaw Road	Rancho Cordova C.L.	1.67	short	$661,000	52
65th Street Expy.	Florin Road	Sacramento C.L.	1.00	short	$191,000	52

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Galbrath Drive	Larchmont Drive	Monument Drive	1.16	short	$55,000	52
47th Avenue	UPRR (Sac C.L.)	Sacramento C.L.	2.07	short	$98,000	52
44th Street	Fruitridge Road	End	1.50	short	$71,000	52
Franklin Boulevard	Fruitridge Road	Sacramento C.L.	0.24	short	$73,000	52
Sky Parkway	North Pkwy	65th Street Expy.	0.94	short	$45,000	52
Dry Creek Road	U Street	Ascot Avenue	2.46	short	$753,000	52
Winding Way	Fair Oaks Boulevard	Hazel Avenue	2.37	short	$113,000	52
Fair Oaks Boulevard	Howe Avenue	Citrus Heights C.L.	14.89	short	$3,183,000	52
Stockton Boulevard	Sacramento C.L.	E. Stockton Boulevard	2.58	short	$106,000	51
Turnbridge Drive	Franklin Boulevard	SR 99 Overcrossing	0.45	short	$21,000	51
Franklin Boulevard	Elk Grove C.L.	San Joaquin C.L.	9.54	short	$2,921,000	51
Salmon Falls Drive	Water Tree Way	Tuolumne Drive	0.38	short	$18,000	51
Vintage Park Drive	Calvine Road	Bradshaw Road	3.49	short	$166,000	51
Don Julio Blvd	32nd Street	Placer County Line	4.97	short	$918,000	50
Antelope Road	Watt Avenue	Citrus Heights C.L.	3.15	short	$220,000	50
Hollister Avenue	Grant Avenue	Lincoln Avenue	0.75	short	$36,000	50
Wilton Road	Dillard Road	Grant Line Road	3.12	short	$957,000	49
Waterman Road	New Connector	Calvine Road	1.51	short	$221,000	49
Q Street	Marysville Boulevard	Watt Avenue	4.98	short	$237,000	49
Grant Line Road	SR 99	White Rock Road	18.94	short	$499,000	49
Woodmore Oaks Drive	Fair Oaks Boulevard	Central Avenue	0.71	short	$34,000	49
Gerber Road	Stockton Boulevard	Excelsior Road	6.76	short	$2,070,000	49
Santa Juanita Avenue	Central Avenue	Placer County Line	2.44	short	$116,000	49
Bridge Street	Fair Oaks Boulevard	Temescal Street	0.09	short	$4,000	48
Dillard Road	SR 160	SR 99	14.34	short	$4,391,000	48
Freedom Park Drive	32nd Street	Watt Avenue	0.50	short	$154,000	48
Bradshaw Road	Mira Del Rio Drive	Calvine Road	8.70	short	$1,209,000	48
North Pkwy	Sky Pkwy	Sky Pkwy	0.47	short	$16,000	48
Oak Lane	M Street	10th Street	0.19	short	$6,000	47
Marmith Avenue	Hemlock Street	Garfield Avenue	0.19	short	$9,000	47
Watt Avenue	Placer County Line	Folsom Boulevard	12.47	short	$3,099,000	47
Stoughton Way	Butterfield Way	Mira Del Rio Drive	0.41	short	$20,000	47
Butterfield Way	Mira Del Rio Drive	Oates Drive	0.49	short	$23,000	47
Central Avenue	Sacramento Street	Winding Way	0.09	short	$4,000	47

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Arden Way	Ethan Way	McClaren Drive	4.72	short	$992,000	46
Pasadena Avenue	Auburn Boulevard	Winding Way	1.54	short	$430,000	46
Norris Avenue	Auburn Boulevard	Engle Road	0.69	short	$33,000	46
Elk Grove-Florin Road	Florin Road	Calvine Road	3.01	short	$444,000	46
Larry Way	Don Julio Boulevard	Bruce Way	0.50	short	$24,000	46
Oleander Drive	Saint James Drive	End	0.18	short	$9,000	46
Tuolumne Drive	La Riviera Drive	La Riviera Drive	0.58	short	$28,000	46
Calvine Road	SR 99	Grant Line Road	7.44	short	$1,143,000	46
Elsie Avenue	Stockton Boulevard	Cottonwood Lane	1.56	short	$31,000	46
Clay Station Road	Simmerhorn Road	Dillard Road	11.51	short	$547,000	46
Chicago Avenue	Kaula Drive	Madison Avenue	0.31	short	$15,000	45
Woodring Drive	Excelsior Road	Eagles Nest Road	1.54	short	$73,000	45
Goethe Road	Mayhew Road	Existing End	1.29	short	$61,000	45
North Loop Boulevard	Elverta Road	Don Julio Blvd	1.77	short	$160,000	45
Palm Avenue	Heritage Drive	Dewey Drive	0.40	short	$19,000	45
Sunrise Boulevard	Rancho Cordova C.L.	Grant Line Road	4.67	short	$1,105,000	45
Rutland Drive	Ellerslee Drive	Heritage Drive	0.62	short	$29,000	45
Flagstone Street	Madison Avenue	Palm Avenue	0.23	short	$11,000	45
Millburn Street	Coyle Avenue	Madison Avenue	0.31	short	$15,000	45
Curved Bridge Road	Oak Lane	Dry Creek Road	0.37	short	$17,000	45
Chicago Avenue	Winding Way	Yvonne Way	0.78	short	$37,000	45
Elkhorn Boulevard	Crossfield Drive	Citrus Heights C.L.	14.96	short	$3,485,000	44
Palm Avenue	Garfield Avenue	Manzanita Avenue	0.51	short	$24,000	44
Rogue River Drive	Whitewater Way	La Riviera Drive	0.47	short	$22,000	44
Munroe Street	Fulton Avenue	Sacramento C.L.	0.69	short	$211,000	44
Whitewater Way	Rogue River Drive	Stansberry Way	0.05	short	$2,000	44
Navaho Drive	Watt Avenue	Blackfoot Way	1.02	short	$49,000	44
Hilltop Drive	Manzanita Avenue	Park Oaks Drive	0.65	mid	$31,000	44
McKinley Avenue	Clay Station Road	Twin Cities Road	0.93	mid	$44,000	44
Dudley Boulevard	Freedom Park Drive	Winters Street	2.98	mid	$913,000	43
El Rio Avenue	Elverta Road	W. Delano St	0.31	mid	$15,000	43
Huntsman Drive	Kiefer Boulevard	Mayhew Road	1.05	mid	$50,000	43
Oates Drive	Butterfield Way	Bradshaw Road	0.59	mid	$28,000	43
North Avenue	Mission Avenue	Fair Oaks Boulevard	1.46	mid	$70,000	43

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
SR 16	Sacramento C.L.	Amador County Line	20.59	mid	$8,155,000	43
Montclair Street	Whitney Avenue	Marconi Avenue	0.75	mid	$36,000	43
Bruce Way	Larry Way	La Cienega Drive	0.20	mid	$10,000	43
Ethan Way	El Camino Avenue	End	1.59	mid	$631,000	42
Aztec Way	Elverta Road	Navaho Drive	0.36	mid	$17,000	42
Don Crest Lane	Bruce Way	La Cienega Drive	0.24	mid	$12,000	42
Ellerslee Drive	Manzanita Avenue	Rutland Drive	0.16	mid	$7,000	42
Falcon View Drive	Palmerson Drive	North Loop Boulevard	0.39	mid	$18,000	42
Gibbons Drive	Walnut Avenue	Garfield Avenue	0.50	mid	$24,000	42
Gothberg Avenue	Larchmont Drive	Weddigen Way	0.27	mid	$13,000	42
Kirkby Way	Larry Way	Walerga Road	0.15	mid	$7,000	42
McKay Street	Madison Avenue	Treecrest Avenue	0.31	mid	$15,000	42
Rustic Road	Papaya Drive	Winding Way	0.19	mid	$9,000	42
Sierra Boulevard	Munroe Street	Morse Avenue	0.61	mid	$29,000	42
Westcamp Road	Rimwood Drive	Fair Oaks Boulevard	0.15	mid	$7,000	42
Winona Way	Roseville Road	Watt Avenue	0.41	mid	$20,000	42
Tributary Point Drive	Tributary Crossing Drive	Hazel Avenue	0.41	mid	$19,000	42
Mira Del Rio Drive	Folsom Boulevard	Escobar Way	1.12	mid	$53,000	42
White Rock Road	Sunrise Boulevard	El Dorado County Line	11.29	mid	$4,471,000	42
10th Street	Oak Lane	U Street	0.83	mid	$22,000	42
W. 6th Street	End of Roadway	Ascot Avenue	2.09	mid	$639,000	42
Twin Cities Road	River Road	Amador County Line	30.26	mid	$9,266,000	41
El Camino Avenue	Ethan Way	Fair Oaks Boulevard	4.93	mid	$1,511,000	41
Black Eagle Drive	Watt Avenue	Redwater Drive	0.39	mid	$19,000	41
Date Avenue	Myrtle Avenue	Madison Avenue	0.49	mid	$23,000	41
Falcon View Drive	North Loop Boulevard	End	0.38	mid	$18,000	41
La Cienega Drive	Don Julio Boulevard	Larchmont Drive	0.35	mid	$16,000	41
La Sierra Drive	Watt Avenue	El Camino Avenue	1.75	mid	$83,000	41
Longdale Drive	Walerga Road	Keema Avenue	0.57	mid	$27,000	41
Northham Drive	Redwater Drive	Elverta Drive	0.55	mid	$26,000	41
Sprig Drive	Elkhorn Boulevard	Don Julio Boulevard	0.38	mid	$18,000	41
Tributary Crossing Drive	Gold Country Boulevard	Tributary Point Drive	0.11	mid	$5,000	41

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Robertson Avenue	Watt Avenue	Eastern Avenue	1.00	mid	$48,000	41
Alta Arden Expy.	Ethan Way	Watt Avenue	2.07	mid	$401,000	41
16th Street	Q Street	Placer County Line	2.28	mid	$699,000	41
Marysville Blvd	W. 6th Street	Rio Linda Blvd	2.22	mid	$679,000	41
Robertson Avenue	Mission Avenue	Fair Oaks Boulevard	1.45	mid	$69,000	41
W. 2nd Street	U Street	Ascot Avenue	2.43	mid	$115,000	41
Pope Avenue	Fulton Avenue	Watt Avenue	1.00	mid	$47,000	41
McDermott Drive	Galbrath Drive	Elkhorn Boulevard	0.35	mid	$17,000	41
Palm Street	Dudley Boulevard	Watt Avenue	0.22	mid	$67,000	41
Hackberry Lane	Palm Avenue	Cypress Avenue	2.00	mid	$94,000	40
Barrett Road	Winding Way	Lincoln Avenue	0.61	mid	$29,000	40
Blackfoot Way	Watt Avenue	Navaho Drive	0.70	mid	$33,000	40
Kenneth Avenue	Mission Avenue	Garfield Avenue	1.00	mid	$47,000	40
Landis Avenue	Fair Oaks Boulevard	California Avenue	0.38	mid	$18,000	40
Minnesota Avenue	Sunset Avenue	Winding Way	0.56	mid	$26,000	40
Poker Lane	Elverta Road	Existing Gap	0.28	mid	$13,000	40
Madison Avenue	Roseville Road	Greenback Lane	10.64	mid	$2,672,000	40
2nd Street	U Street	Ascot Avenue	2.45	mid	$117,000	40
Heartland Drive	Don Julio Boulevard	Palmerson Drive	0.39	mid	$19,000	40
Pecan Avenue	Pershing Avenue	Elm Avenue	1.53	mid	$73,000	40
Stanley Avenue	Fair Oaks Boulevard	Marshall Avenue	1.00	mid	$48,000	40
Almond Avenue	Oak Avenue	Greenback Lane	1.51	mid	$72,000	40
Wildridge Drive	Primrose Drive	Rimwood Drive	0.43	mid	$20,000	39
Stewart Road	Arden Way	Fair Oaks Boulevard	0.81	mid	$38,000	39
Summer Sky Drive	Turnbury Drive	Sunrise Greens Drive	0.07	mid	$3,000	39
Turnbury Drive	Iona Way	Summer Sky Drive	0.44	mid	$21,000	39
Iona Way	Elsie Avenue	Turnbury Drive	0.48	mid	$23,000	39
Redwater Drive	Black Eagle Drive	North Loop Boulevard	1.24	mid	$59,000	39
Kingsford Drive	Arden Way	End	0.98	mid	$10,000	39
Florin Road	Franklin Boulevard	Sunrise Boulevard	11.77	mid	$4,662,000	39
M Street	Marysville Boulevard	Oak Lane	1.49	mid	$71,000	39
Arnold Avenue	James Way	Dudley Boulevard	0.96	mid	$46,000	39
Flyway Drive	Vought Drive	Madison Avenue	0.23	mid	$11,000	39
Linda Sue Way	Dewey Drive	Madison Avenue	0.61	mid	$29,000	39
Marshall Avenue	Stanley Avenue	Grant Avenue	0.50	mid	$24,000	39

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Marshall Avenue	Sutter Avenue	Lincoln Avenue	0.50	mid	$24,000	39
Poker Lane	Don Julio Boulevard	Antelope Road North	0.94	mid	$45,000	39
Templeton Drive	Rutland Drive	Dewey Drive	0.91	mid	$43,000	39
Trajan Drive	Greenback Lane	Central Avenue	0.67	mid	$32,000	39
Del Paso Road	Power Line Road	Sacramento C.L.	1.43	mid	$437,000	39
Vought Drive	Phoenix Avenue	Flyway Drive	0.09	mid	$4,000	38
Mira Del Rio Drive	End	Paseo Rio Way	0.36	mid	$17,000	38
Elwyn Avenue	Elverta Road	U Street	0.65	mid	$31,000	38
(McClellan) Patrol Road	Dean Street	Magpie Creek	1.85	mid	$88,000	38
Dean Street	Winters Street	McClellan Perimeter Rd. Trail	0.25	mid	$12,000	38
Douglas Road	Mather Boulevard	Sunrise Boulevard	0.72	mid	$284,000	38
Winters Street	Dean Street	Sacramento C.L.	0.75	mid	$229,000	38
New Road	Winona Way	Orange Grove Avenue	0.38	mid	$18,000	38
10th Street	Elkhorn Boulevard	E Street	0.51	mid	$24,000	38
16th Street	Ascot Avenue	Elkhorn Boulevard	1.32	mid	$404,000	38
Chestnut Avenue	Pershing Avenue	Oak Avenue	2.04	mid	$97,000	38
Palmerson Drive	Elverta Road	Poker Lane	2.65	mid	$126,000	38
Paseo Rio Way	Mira Del Rio Way	Folsom Boulevard	0.14	mid	$7,000	38
G Street	10th Street	16th Street	0.75	mid	$36,000	38
Isabella Avenue	Sunset Avenue	Winding Way	0.26	mid	$12,000	38
Lake Natoma Drive	Main Avenue	Greenback Lane	0.81	mid	$38,000	38
Locust Avenue	Walnut Avenue	Manzanita Avenue	0.98	mid	$46,000	38
Los Rios Drive	McClaren Drive	Shelato Way	0.06	mid	$3,000	38
Palmyra Drive	Madison Avenue	Dory Way	0.34	mid	$16,000	38
Andrea Boulevard	Roseville Road	Tupelo Drive	1.47	mid	$70,000	37
Greenback Lane	Fair Oaks Boulevard	Folsom C.L.	3.37	mid	$1,031,000	37
Van Alstine Avenue	Fair Oaks Boulevard	California Avenue	0.38	mid	$18,000	37
La Serena Drive	Hazel Avenue	End	0.63	mid	$30,000	37
Walnut Avenue	Blue Oak Drive	Pershing Avenue	0.21	mid	$10,000	37
Wittenham Way	Greenback Lane	Woodlake Hills Drive	0.36	mid	$17,000	37
Elm Avenue	Elm Avenue Trail	Main Avenue	1.93	mid	$92,000	37
Fulton Avenue	SR 51 (Business 80)	Munroe Street	3.35	mid	$1,026,000	37
Walnut Avenue	Madison Avenue	Oak Avenue	2.03	mid	$97,000	37
Tallyho Drive	Kiefer Boulevard	Kiefer Boulevard	1.16	mid	$55,000	37

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Shelato Way	Los Rios Drive	McClaren Drive	0.50	mid	$24,000	36
Mayhew Road	Mayhew Road Connection	Elder Creek Road	1.75	mid	$83,000	36
14th Street	Elkhorn Boulevard	I Street	0.11	mid	$5,000	36
Curragh Downs Drive	Curragh Downs Trail	Hazel Avenue	0.50	mid	$24,000	36
El Modena Avenue	Elverta Road	Placer County Line	1.26	mid	$60,000	36
Flight Lane	Arnold Avenue	New Class I UPRR Crossing	0.07	mid	$3,000	36
I Street	14th Street	24th Street	1.25	mid	$59,000	36
Keema Avenue	Walerga Road	Longdale Drive	0.38	mid	$18,000	36
Rimwood Drive	Madison Avenue	West Camp Road	0.57	mid	$27,000	36
Stevenson Avenue	Power Inn Road	Cottonwood Lane	1.00	mid	$48,000	36
Orange Grove Avenue	Roseville Road	Watt Avenue	1.02	mid	$48,000	36
Mayhew Road Connection	Oxwood Drive	Mayhew Road	0.30	mid	$14,000	36
Industry Drive	Industry Drive (I-80) Overcrossing	Orange Grove Ave	0.08	mid	$4,000	36
Grant Avenue	End	Hollister Avenue	0.63	mid	$30,000	36
Artesia Road	Elwyn Avenue	El Modena Avenue	0.49	mid	$23,000	36
Sand City Drive	Antelope Road	Elverta Road	0.26	mid	$12,000	36
Howe Avenue	Auburn Boulevard	Fair Oaks Boulevard	3.41	mid	$1,350,000	36
Granite Avenue	Oak Avenue	Cherry Avenue	0.75	mid	$36,000	36
Fruitridge Road	S. Watt Avenue	Mayhew Road	1.42	mid	$434,000	35
32nd Street	U Street	Freedom Park Drive	1.96	mid	$93,000	35
Dory Way	Lake Knoll Lane	Greenridge Way	0.39	mid	$18,000	35
Elm Avenue	Kenneth Avenue	Elm Avenue Trail	0.29	mid	$14,000	35
Jackson Street	Myrtle Avenue	Madison Avenue	0.50	mid	$24,000	35
New Road	Roseville Road	Orange Grove Avenue	0.60	mid	$28,000	35
Old Ranch Road	Citrus Heights C.L.	Kenneth Avenue	0.44	mid	$21,000	35
55th Street	Florin Road	66th Avenue	0.25	mid	$12,000	35
Fruitridge Road	MLK Jr. Boulevard	Sacramento C.L.	1.10	mid	$336,000	35
Elwyn Avenue	Rio Linda Blvd	Placer County Line	0.80	mid	$245,000	35
Mountain Avenue	Oak Avenue	Cherry Avenue	0.75	mid	$36,000	35
Hedge Avenue	SR 16	Florin Road	2.78	mid	$132,000	34
Gibson Ranch Park	Elverta Road	Unnamed Road	1.12	mid	$53,000	34

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Road						
Peacekeeper Way	Dudley Boulevard	Watt Avenue	0.29	mid	$88,000	34
Trade Center Drive	Sunrise Boulevard	Mercantile Drive	0.52	mid	$25,000	34
Indian Hill Court	End	Indian Creek Drive	0.15	mid	$7,000	34
Antelope Road North	Antelope Road	Placer County Line	1.69	mid	$333,000	34
McClaren Drive	Kingsford Drive	Shelato Way	0.45	mid	$21,000	34
Golden Gate Avenue	Granite Avenue	Cardwell Avenue	0.80	mid	$38,000	34
Phoenix Avenue	Kenneth Avenue	Winding Oak Drive	1.39	mid	$66,000	34
Folsom Boulevard	Sunrise Boulevard	Folsom City Limits	4.79	mid	$27,000	34
Excelsior Road	Mather Boulevard	Calvine Road	7.10	mid	$2,175,000	34
Tupelo Drive	Roseville Road	Citrus Heights C.L.	0.52	mid	$25,000	33
El Verano Avenue	Elverta Road	Adair Street	0.75	mid	$36,000	33
Cardwell Avenue	Oak Avenue	Golden Gate Avenue	0.50	mid	$24,000	33
U Street	W. 6th Street	Dry Creek Trail	3.13	mid	$960,000	33
W. Elverta Road	Rio Linda Boulevard	Garden Hwy	7.77	mid	$3,077,000	33
Wachtel Way	Old Auburn Road	Oak Avenue	1.12	mid	$53,000	33
9th Street	U Street	Elverta Road	0.66	mid	$31,000	33
Cherry Lane	Curved Bridge Road	Elkhorn Boulevard	0.58	mid	$27,000	33
E Street	10th Street	24th Street	1.73	mid	$82,000	33
Roseville Road	Antelope Road	Roseville C.L.	1.67	mid	$512,000	33
Unnamed Road	Track Crossing Trail	Dudley Boulevard	0.07	mid	$3,000	33
66th Avenue	55th Street	Stockton Boulevard	0.75	mid	$36,000	32
East Parkway	Florin Road	Circle Parkway	0.16	mid	$9,600	32
Hood-Franklin Road	Bruceville Road	Franklin Boulevard	2.11	long	$836,000	32
Hood-Franklin Road	Franklin Boulevard	SR 160	3.72	long	$177,000	32
Ridgepoint Drive	Great Valley Drive	Antelope Road North	0.49	long	$23,000	32
Indian Creek Road	Country Creek Drive	Indian Hill Ct	0.15	long	$7,000	32
Scott Road	White Rock Road	Latrobe Road	7.92	long	$3,137,000	32
Ascot Avenue	W. 2nd Street	4th Street	0.52	long	$25,000	32
14th Avenue	Lissetta Avenue	Stockton Boulevard	0.56	long	$27,000	32
20th Street	Q Street	Ascot Avenue	2.00	long	$95,000	32
Aerojet Road	Folsom Boulevard	Easton Valley Parkway	0.47	long	$145,000	32
Arno Road	Riley Road	SR 99	1.51	long	$72,000	32
Country Lake Drive	Country Trail Dr	Petite Creek Drive	0.44	long	$21,000	32
Petite Creek Drive	Country Lake Drive	Placer County Line	0.23	long	$11,000	32

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Stone House Road	Latrobe Road	Jackson Road	1.47	long	$70,000	32
Valensin Road	Alta Mesa Road	Colony Road	2.48	long	$118,000	32
Valensin Road	Colony Road	Arno Road	1.38	long	$66,000	32
W. Ascot Street	W. 6th Street	W. 2nd Street	0.50	long	$24,000	32
Sunrise Gold Circle	Sunrise Boulevard	Mercantile Drive	0.93	long	$44,000	32
Mercantile Drive	Sunrise Gold Circle	Folsom Boulevard	0.55	long	$26,000	32
South Bayou Way	Airport Boulevard	Sacramento C.L.	2.56	long	$122,000	32
Colony Road	Valensin Road	Dillard Road	6.01	long	$286,000	31
Elder Creek Road	South Watt Avenue	Excelsior Road	3.92	long	$1,200,000	31
Eagles Nest Road	Grant Line Road	Douglas Road	6.26	long	$1,917,000	31
Happy Lane	Old Placerville Road	Kiefer Boulevard	1.20	long	$367,000	31
Power Line Road	Garden Hwy	Sutter County Line	5.92	long	$1,814,000	31
Cherry Avenue	Hazel Avenue	Mountain Avenue	1.27	long	$60,000	31
Mather Boulevard	Douglas Road	Excelsior Road	0.99	long	$47,000	31
Crestview Drive	Schuyler Drive	Winding Way	1.35	long	$15,000	31
Hazel Avenue	White Rock Road	Placer County Line	8.99	long	$2,226,000	30
Airport Boulevard	S. Bayou Drive	End	3.78	long	$1,497,000	30
Blake Road	Colony Road	Alta Mesa Road	0.99	long	$47,000	30
Bruceville Road	Elk Grove C.L.	Twin Cities Road	6.14	long	$292,000	30
Conley Road	Cherokee Lane	Alta Mesa Road	2.06	long	$98,000	30
Core Road	Ed Rau Road	Franklin Blvd	0.87	long	$41,000	30
Cottonwood Lane	Elsie Avenue	Stevenson Avenue	0.63	long	$30,000	30
Cresthill Drive	Sheldon Lake Drive	Sloughhouse Road	0.65	long	$31,000	30
Dwight Road	Franklin Boulevard	Elk Grove C.L.	0.62	long	$189,000	30
Ed Rau Road	Eschinger Road	Core Road	0.50	long	$24,000	30
Green Road	Dillard Road	Wilton Road	2.55	long	$781,000	30
Hobday Road	Colony Road	Folsom South Canal Trail	2.87	long	$136,000	30
Kammerer Road	SR 99	Bruceville Road	3.18	long	$1,260,000	30
New Hope Road	San Joaquin County Line	Galt C.L.	5.63	long	$268,000	30
Placerville Road	Folsom C.L.	White Rock Road	1.48	long	$70,000	30
Prairie City Road	US 50	White Rock Road	1.99	long	$787,000	30
Rio Linda Boulevard	Elverta Road	Sorrento Road	1.91	long	$585,000	30
Rising Road	Alta Mesa Road	Tavernor Road	0.50	long	$24,000	30
San Juan Road	Garden Highway	El Centro Road	1.11	long	$340,000	30

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Sheldon Lake Drive	Grant Line Road	Cresthill Drive	0.64	long	$30,000	30
Short Road	Calvine Road	Tillotson Pkwy Trail	0.50	long	$24,000	30
Sorento Road	Elverta Road	Placer County Line	1.38	long	$424,000	30
Tavernor Road	Rising Road	Dillard Road	3.81	long	$181,000	30
Tree View Road	SR 16	End of Existing Roadway	0.25	long	$12,000	30
Unnamed Road	El Centro Road	Garden Hwy	1.18	long	$56,000	30
Walmort Road	Dillard Road	Alta Mesa Road	3.71	long	$176,000	30
Waterman Road	SR 16	New Connector	3.99	long	$1,221,000	30
Waterman Road Connector	New Connector	New Connector	0.13	long	$39,000	30
Woods Road	Colony Road	Alta Mesa Road	0.99	long	$47,000	30
Golden Gate Avenue	Hazel Avenue	Golden Gate Avenue Trail	0.64	long	$30,000	30
Lambert Road	Bruceville Road	SR 160	7.86	long	$373,000	30
Marengo Road	Boessow Road	Twin Cities Road	2.50	long	$119,000	30
Christensen Road	New Hope Road	Twin Cities Road	3.01	long	$922,000	30
Borden Road	Twin Cities Road	Clay Station Road	4.35	long	$206,000	30
Florin-Perkins Road	Sacramento C.L.	Gerber Road	0.45	long	$139,000	30
4th Street	Marysville Boulevard	Ascot Avenue	0.36	long	$17,000	30
Simmerhorn Road	SR 99	Clay Station Road	6.79	long	$323,000	30
Ione Road	SR 16	Amador County Line	6.18	long	$294,000	30
Longview Drive	Roseville Road	Watt Avenue	1.12	long	$53,000	30
Alta Mesa Road	Boessow Road	Dillard Road	11.74	long	$558,000	30
Cherokee Lane	Boessow Road	Conley Road	3.30	long	$157,000	29
Sloughhouse Road	Grantline Road	SR 16	4.30	long	$204,000	29
Sunrise Boulevard	Madison Avenue	Rancho Cordova C.L.	5.50	long	$2,177,000	29
Bilby Road	Franklin Boulevard	Bruceville Road	2.07	long	$633,000	29
Boessow Road	SR 99	Alta Mesa Road	3.04	long	$144,000	29
Kost Road	New Hope Road	Galt CL	3.22	long	$153,000	29
Orr Road	New Hope Road	Galt CL	3.91	long	$1,198,000	29
Riley Road	Dillard Road	Arno Road	3.32	long	$158,000	29
SR 12	San Joaquin County Line	SR 160	5.64	long	$1,728,000	29
SR 160	SR 12	Contra Costa C.L.	10.74	long	$3,290,000	29
SR 160	Hood-Franklin Road	Walnut Grove-	12.59	long	$598,000	29

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
		Thornton Road				
Walnut Grove-Thornton Road	SR 160	Mokelumne River	1.01	long	$48,000	28
El Centro Road	Arena Blvd	West El Camino Road	1.84	long	$562,000	28
Eschinger Road	SR 99	Ed Rau Road	5.45	long	$259,000	28
Kiefer Boulevard	Sunrise Boulevard	So. Watt Avenue	3.23	long	$989,000	28
Kiefer Boulevard	Grant Line Road	SR 16	8.13	long	$362,000	27
Latrobe Road	SR 16	Michigan Bar Road	7.25	long	$345,000	27
Jackson Slough Road	Terminous Road	SR 12	0.91	long	$43,000	27
Lone Tree Road	Meister Way	W. Elverta Road	2.51	long	$767,000	27
McKenzie Road	Arno Road	Twin Cities Road	2.38	long	$113,000	27
Meister Way	Metro Air Parkway	Lone Tree Road	0.50	long	$153,000	27
Michigan Bar Road	Latrobe Road	Cosumnes River Trail	2.91	long	$138,000	27
N. Bayou Way	Crossfield Drive	Garden Hwy	1.89	long	$90,000	27
Oxbow Drive	Tyler Island Road	Terminous Road	1.95	long	$93,000	27
Race Track Road	Walnut Grove-Thornton Road	Tyler Island Road	2.39	long	$114,000	27
Reese Road	Florin Road	Gerber Road	1.00	long	$47,000	27
Scott Road	US 50	White Rock Road	1.45	long	$574,000	27
Terminous Road	Jackson Slough Road	Oxbow Drive	0.60	long	$29,000	27
West El Camino Road	El Centro Road	I-80	0.22	long	$67,000	27
Aviation Drive	Crossfield Drive	Airport Blvd	0.51	long	$24,000	27
Ascot Avenue	Dry Creek Road	McClellan Perimeter Rd. Trail	1.24	long	$59,000	26
Tyler Island Road	Race Track Road	SR 160	5.29	long	$251,000	25
Metro Air Parkway	South Bayou Way	W. Elverta Road	3.11	long	$1,230,000	25
Elk Grove Boulevard	I-5	Franklin Boulevard	2.08	long	$822,000	24
Poker Lane	Existing Gap	Don Julio Boulevard	0.22	long	$11,000	23
Crossfield Drive	Airport Boulevard	Aviation Drive	0.19	long	$59,000	23
Vineyard Road	SR 16	Calvine Road	4.91	long	$1,504,000	23
Del Paso Road	Sacramento C.L.	Natomas Main Drain	0.94	long	$371,000	23
N. Market Boulevard	Gateway Park Boulevard	Northgate Boulevard	1.48	long	$452,000	23

TABLE G-3: CLASS II PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Bell Avenue	Winters Street	Dayton Street	0.45	long	$21,000	22
National Drive	Del Paso Road	N. Market Boulevard	0.65	long	$199,000	22
Northgate Blvd	I-80	Del Paso Road	0.93	long	$285,000	22
W. Stockton Road	Kammerer Road	Eschinger Road	0.81	long	$38,000	22
Guthrie Street	Don Julio Boulevard	Keema Avenue	0.54	long	$13,000	19
Adair Street	Elwyn Avenue	16th Street	2.02	long	$96,000	18
W. 6th Street	Marysville Boulevard	End of Roadway	0.16	long	$8,000	15
Dwight Road Extension	Existing Dwight Road	Elk Grove C.L.	0.38	long	$117,000	10
El Rio Avenue	W Delano St	U Street	0.33	long	$16,000	10
Empire Ranch Road	US 50	White Rock Road	1.26	long	$385,000	10
Gerber Road	Excelsior Road	Eagles Nest Road	2.01	long	$614,000	10
Glenborough Drive	Folsom Boulevard	Easton Valley Parkway	1.00	long	$305,000	10
Goethe Road	Existing End	Bradshaw Road	0.28	long	$106,000	10
New Loop Road	16th Street	16th Street	4.01	long	$1,227,000	10
New Road	New Loop Road	U Street	0.38	long	$116,000	10
Oak Avenue Parkway	US 50	Easton Valley Parkway	0.48	long	$147,000	10
Rancho Cordova Parkway	US 50	White Rock Road	1.94	long	$770,000	10
Tree View Road	End of Existing Roadway	Gerber Road Extension	2.00	long	$95,000	10
Zinfandel Drive	Rancho Cordova C.L.	Douglas Road	0.62	long	$244,000	10
Easton Valley Parkway	Rancho Cordova Parkway	Empire Ranch Road	8.75	long	$3,466,000	4

TABLE G-4: CLASS III PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Tacomic Drive	Roseville Road	Hillsdale Boulevard	0.38	Short	$2,000	69
Bannister Road	Winding Way	Bannister Park	0.81	short	$4,300	66
Loucreta Drive	Palmerhouse Drive	Power Inn Road	0.33	short	$1,700	66
Estates Drive	American River Drive	End	0.20	short	$1,100	64
Mills Street	Fair Oaks Boulevard	Huntington Road	0.22	short	$1,200	64
Harrison Street	Myrtle Avenue	Madison Avenue	0.50	short	$2,600	61
Magnolia Avenue	New York Avenue	Pennsylvania Avenue	0.25	short	$1,300	59
Kingsbridge Drive	Vintage Park Drive	Calvine Road	0.74	short	$3,900	58
Jacob Lane	American River Drive	End	0.28	short	$1,500	58
New York Avenue	Sunset Avenue	Magnolia Avenue	1.11	short	$5,900	57
Pennsylvania Avenue	Magnolia Avenue	End	0.17	short	$900	56
Linda Rio Drive	La Riviera Drive	Mira Del Rio Drive	0.79	short	$4,200	52
Classic Place	Claremont Road	River Oak Way	0.06	short	$300	51
Claremont Road	Newbury Way	Classic Place	0.10	short	$500	50
Newbury Way	Shelfield Drive	Claremont Road	0.07	short	$400	50
Sierra Boulevard	Howe Avenue	Munroe Street	0.75	short	$4,000	47
Oleander Drive	Palm Avenue	Saint James Drive	0.31	short	$1,600	47
Whitewater Way	Stansberry Way	Linda Rio Drive	0.17	short	$900	47
Boyer Drive	Sarah Court	Oak Avenue	0.09	short	$500	47
Sarah Court	River Oak Way	Boyer Drive	0.21	short	$1,100	46
Ashton Drive	Saverien Drive	End	0.64	short	$3,400	46
River Oak Way	Classic PL	Sarah Court	0.33	short	$1,700	46
Arutas Drive	Galbrath Drive	Bainbridge Drive	0.25	short	$1,300	46
Bainbridge Drive	Watt Avenue	Walerga Road	1.20	short	$6,300	46
Heritage Drive	Palm Avenue	Saint James Drive	0.25	short	$1,300	46
Hinsey Way	Bramhill Way	Kaula Drive	0.03	short	$200	46
Hemlock Street	Palm Avenue	Garfield Avenue	1.00	short	$5,300	46
Bramhall Way	Osgood Way	Hinsley Way	0.18	short	$900	45
Gibbons Drive	Garfield Avenue	Fair Oaks Boulevard	0.47	mid	$2,500	44
Gold Flat Drive	Gold Country Boulevard	Prospect Hill Drive	0.06	mid	$500	44
Kenneth Avenue	Garfield Avenue	California Avenue	0.82	mid	$4,300	44
Nonnie Avenue	Hackberry Lane	Manzanita Avenue	0.26	mid	$1,400	44
Kaula Drive	Fair Oaks Boulevard	Buena Vista Avenue	0.68	mid	$3,600	43
Sheraton Drive	Lunina Way	Illinois Avenue	0.72	mid	$3,800	43

TABLE G-4: CLASS III PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Becerra Way	Whitney Avenue	Woodcrest Road	0.27	mid	$1,400	42
Cozzins Court	Chicago Avenue	End	0.03	mid	$200	42
Eloise Avenue	Delano Street	Elverta Road	0.31	mid	$1,600	42
Sprig Drive	Golden Aspen Drive	Elkhorn Boulevard	0.14	mid	$700	42
Weddigen Way	Gothberg Avenue	Elkhorn Boulevard	0.26	mid	$1,400	42
Kings Way	Watt Avenue	Marilona Drive	0.64	mid	$3,400	42
Papaya Drive	Cardinal Road	Will Rogers Drive	0.61	mid	$3,200	42
Gunn Road	Marconi Avenue	Fair Oaks Boulevard	1.18	mid	$6,200	42
Cardinal Road	Papaya Drive	San Juan Avenue	0.53	mid	$2,800	41
Delano Street	Elwyn Avenue	Rio Linda Boulevard	0.30	mid	$1,600	41
Golden Aspen Drive	McDermott Drive	Sprig Drive	0.10	mid	$500	41
Old Dairy Drive	Walerga Road	Palmerson Drive	0.41	mid	$2,200	41
Will Rogers Drive	Dewey Drive	Papaya Drive	0.33	mid	$1,700	41
Old Winding Way	Winding Way	Fair Oaks Boulevard	0.17	mid	$800	41
Candell Court	Underwood Way	End	0.07	mid	$400	41
Hernando Road	Fulton Avenue	Santa Anita Park Trail	0.21	mid	$1,100	41
Stansberry Way	Whitewater Way	End	0.08	mid	$400	41
37th Avenue	44th Street	Stockton Boulevard	0.83	mid	$4,400	40
Buffalo Avenue	Main Avenue	End	0.46	mid	$2,400	40
Cathay Way	Winding Creek Road	Rockwood Drive	0.09	mid	$500	40
Clairidge Way	Robertson Avenue	Norris Avenue	0.40	mid	$2,100	40
Lake Knoll Lane	Dory Way	Primrose Drive	0.13	mid	$700	40
Larchmont Drive	Don Julio Boulevard	Walerga Road	0.26	mid	$1,400	40
Primrose Drive	Lake Knoll Lane	Wildridge Drive	0.04	mid	$200	40
Rockwood Drive	Cathay Way	Eastern Avenue	0.17	mid	$900	40
Sky Parkway	North Pkwy	1st Pkwy	0.16	mid	$800	40
Turner Drive	Watt Avenue	Larchmont Drive	0.40	mid	$2,100	40
Winding Creek Road	Watt Avenue	Cathay Way	1.07	mid	$5,700	40
Wright Street	Cottage Way	Arden Way	0.51	mid	$2,700	40
Dredger Way	Main Avenue	Buffalo Avenue	0.52	mid	$2,700	39
Marilona Drive	Kings Way	Marconi Avenue	0.39	mid	$2,100	39
Buena Vista Avenue	Kaula Drive	Madison Avenue	0.31	mid	$1,700	39
Gary Way	McClaren Way	Arden Way	0.60	mid	$3,200	39
Muldrow Road	Hackberry Lane	Manzanita Avenue	0.27	mid	$1,400	39
Sampson Boulevard	Fruitridge Road	47th Avenue	1.01	mid	$5,300	39

TABLE G-4: CLASS III PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
Natoma Avenue	Ramona Street	Sailor Bar Access	0.44	mid	$2,300	39
Chenu Avenue	Morse Avenue	Watt Avenue	0.37	mid	$2,000	38
Roseport Way	Oxwood Drive	Mayhew Road	0.35	mid	$1,800	38
Palmerson Drive	Harston Way	Poker Lane	0.22	mid	$1,200	38
Oxwood Drive	Tallyho Drive	Roseport Way	0.05	mid	$300	38
Minnesota Avenue	Greenridge Way	Sunset Avenue	0.23	mid	$1,200	38
41st Avenue	Franklin Boulevard	44th Street	0.74	mid	$3,900	38
Firestone Way	Poker Lane	Harston Way	0.22	mid	$1,200	38
Harston Way	Firestone Way	Palmerson Drive	0.17	mid	$900	38
Lemon Hill Avenue	44th Street	Sacramento C.L.	0.93	mid	$4,900	38
Pennsylvania Avenue	Wildridge Drive	Winding Way	1.13	mid	$6,000	38
Rampart Drive	Winding Way	Barrett Road	0.80	mid	$4,200	38
Tyler Street	Myrtle Avenue	Date Avenue	0.62	mid	$3,300	37
Cook Riolo Road	Pearlstone Drive	Great Valley Drive	0.14	mid	$700	37
Greenridge Way	Dory Way	Minnesota Avenue	0.22	mid	$1,100	36
Great Valley Road	Cook Riolo Road	Antelope Road North	0.52	mid	$2,800	36
Mirandy Drive	Huntsman Drive	Mayhew Road	0.54	mid	$2,900	36
Foxfire Drive	Woodlake Hills Drive	Trajan Drive	0.27	mid	$1,400	36
Palm Drive	California Avenue	Ancil Hoffman Park	0.56	mid	$2,900	36
Marlynn Street	Stanley Avenue	Perth Way	0.18	mid	$1,000	36
Perth Way	Marlynn Street	Palm Drive	0.09	mid	$500	36
Sand Bar Circle	McClaren Drive	River Walk Way	0.11	mid	$600	35
McClaren Drive	Shelato Way	Arden Way	0.36	mid	$1,900	35
23rd Avenue	Sacramento C.L.	42nd Street	0.26	mid	$1,400	35
Golden Drive	Main Avenue	Buffalo Avenue	0.55	mid	$2,900	35
Micron Avenue	Mayhew Road	Bradshaw Road	0.73	mid	$3,800	33
River Walk Way	Sand Bar Circle	End	0.04	mid	$200	33
Woodlake Hills Drive	Fair Oaks Boulevard	Foxfire Drive	0.53	mid	$2,800	33
Pearlstone Road	Palmerson Drive	Cook Riolo Road	0.14	long	$700	32
East Parkway	A Parkway	Circle Parkway	0.05	long	$300	32
Orange Avenue	Circle Pkwy	Persimmon Avenue	0.15	long	$800	32
Persimmon Avenue	Orange Avenue	Pomegranate Avenue	0.31	long	$1,600	32
Pomegranate Avenue	Persimmon Avenue	Sacramento C.L.	0.11	long	$600	32
A Pkwy	East Pkwy	Center Pkwy	0.22	long	$1,200	30
Circle Pkwy	East Pkwy	End	0.95	long	$5,000	30

TABLE G-4: CLASS III PLANNED FACILITIES

Roadway	To	From	Total Distance	Term	Cost	Normalized Score
San Lorenzo Way	Palm Drive	Tarshes Drive	0.37	long	$2,000	30
Robert Frost Way	Oak Hollow Drive	Hillsdale Boulevard	0.54	long	$1,400	22
Main Street	Fair Oaks Boulevard	Temescal Street	0.08	mid	$500	41
Temescal Street	Main Street	Bridge Street	0.18	mid	$1,000	41

APPENDIX H:
FUNDING SOURCES

APPENDIX H: FUNDING SOURCES

This appendix presents several potential funding sources for bicycle master plans.

Federal Sources

Federal funding through the SAFETEA-LU (Safe, Accountable, Flexible, and Effective Transportation Equity Act – Legacy for Users) could provide the bulk of non-local funding. Federal funding requires compliance with NEPA. For the County, applicable SAFETEA-LU programs include the programs listed below.

- Surface Transportation Program (STP)
- Transportation Enhancement Activities (TE)
- Federal Safe Routes to School (Section 1404 SAFETEA-LU
- Bicycle Transportation and Pedestrian Walkways Program
- Recreational Trails Program
- Job Access and Reverse Commute Grants
- Congestion Mitigation/Air Quality Program (CMAQ)

SAFETEA-LU funding is administered through the state and regional governments. Most of the funding programs are transportation versus recreation oriented, with an emphasis on (a) reducing auto trips and (b) providing inter-modal connections. Funding criteria includes completion and adoption of a Bikeway Master Plan and quantification of the costs and benefits of the system, proof of public involvement and support, CEQA compliance, and commitment of local resources. In most cases, SAFETEA-LU provides matching grants of 80 to 90 percent.

State Sources

The following state sources provide funding that is applicable to bikeway funding.

Bicycle Transportation Account (BTA)

The State Bicycle Transportation Account (BTA) is an annual program that is available for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects which benefit bicycling for commuting purposes. Funding for this program is typically about $7,000,000 annually statewide.

State Transportation Improvement Program (STIP)

The STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the State Highway Account and other funding sources. STIP programming generally occurs every two years.

Local Transportation Fund (LTF)

Under Article 3 of the Transportation Development Act (TDA), up to two percent of the LTF allocation to cities and counties can be used for bicycle and pedestrian projects. Revenues to the LTF program are derived from ¼ cents of the statewide sales tax.

Environmental Enhancement and Mitigation Program (EEM)

Bicycle projects can qualify for EEM funds if they meet the program's requirements. Any non-profit organization can sponsor projects, which are submitted to the State Resources Agency for evaluation in June/July of each year.

Assembly Bill 1475 – Safe Routes to School Bill T

This bill redefines transportation safety in California by investing $20 million per year in bike lanes, bicycle and walking trails, new sidewalks and traffic-calming projects near California schools. Several rounds of solicitation and funding have been completed. It is anticipated that this program will continue for future years.

Local Sources

A variety of local sources may be available for funding bikeway and pedestrian facilities. However, their use is often dependent on political support.

New Construction

Future road widening and construction projects are one means of providing on-street bikeways. To ensure that roadway construction projects provide these facilities where needed, roadway design standards need to include minimum cross-sections that have sufficient pavement for on-street bikeways and the review process for new development should include input pertaining to consistency with the proposed system.

Impact Fees

Another potential local source of funding is developer impact fees. There are several different impact fees which may be used for bikeway development. Traffic mitigation fees are typically tied to trip generation rates and traffic impacts produced by the proposed development, and are often used to install Class II bike lanes during road widening projects but are not used for Class I facilities. Bike trail development fees are often used in new specific plan areas as a way to finance construction of Class I trails.

Assessment Districts

Different types of assessment districts can be used to fund the construction and maintenance of bikeway facilities. Examples include Infrastructure Financing Districts (SB 308), Open Space Districts, or Lighting and Landscape Districts. These types of districts have specific requirements relating to their establishment and use of funds.

Measure A

Sacramento County voters recently passed the extension Measure A to allocate $.005 of sales tax for transportation projects. Measure A includes funding for roadway widening (including on-street bicycle lanes), bicycle lanes and paths, and pedestrian facilities.

Other Sources

Local sales taxes, developer or public agency land dedications, private donations, and fund-raising events and in some instances volunteer labor are other local options to generate funding for bikeway projects. Creation of these potential sources usually requires substantial local support.

TABLE H-1:
FUNDING SUMMARY

Grant Source	Application Deadline	Agency	Program Funds Available	Matching Requirement	Eligible Applicants	Commute	Recreation	Safety/ Education	Comments
Federal Funding									
Regional Surface Transportation Program (RSTP)	Varies by RTPA	RTPAs, Caltrans	$320 million	11.47% non-federal match	cities, counties, transit operators, Caltrans, and MPOs	X	X		RSTP funds may be exchanged for local funds for non-federally certified local agencies; no match may be required if project improves safety.
Congestion Mitigation and Air Quality Program (CMAQ)	December 1, yearly	RTPAs, Caltrans	$400 million	11.47% non-federal match	federally certified jurisdictions	X			Counties redesignated to attainment status for ozone may lose this source.
Transportation Enhancement Activities (TEA)	Varies by RTPA	RTPAs, Caltrans	$60 million	11.47% non-federal match	federally certified jurisdictions	X	X		Funds are dispersed through the four shares listed below.
Regional Share	Varies by RTPA	RTPAs, Caltrans	$45 million	Varies	federal, state, or local depending on category	X	X		Funding share to RTPAs.
Caltrans Share	Varies by RTPA	Caltrans	$6.6 million	Varies	Caltrans	X	X		Funding share to Caltrans. Available only if regional TEA funds are not used.
Statewide Transportation Enhancement Share	Varies by RTPA	Caltrans, State Resources Agency	$20-30 million	Varies	federal, state (except Caltrans), regional and local agencies with a state partner	X	X		Funding share for all 12 TEA categories except conservation lands.
Conservation Lands Share	Varies by RTPA	Caltrans, State Resources Agency	$11 million	Varies	RTPAs, counties, cities and non-profits	X	X		Funding share for conservations lands category – acquisitions of scenic lands with high habitat conservation value.

TABLE H-1:
FUNDING SUMMARY

Grant Source	Application Deadline	Agency	Program Funds Available	Matching Requirement	Eligible Applicants	Commute	Recreation	Safety/ Education	Comments
Federal Safe Routes to School	TBD	Caltrans	$68 million over five years statewide	None	RTPAs, counties, cities, school districts, non-profits, Native American Tribes			X	Projects that connect schools and provide for safe transport of students, education, encouragement, created by Section 1404 of SAFETEA-LU.
Recreational Trails Program (RTP)	October 1	State DPR	$3 million	20% match	Jurisdiction special districts, non-profits with management responsibilities over the land		X		For recreational trails to benefit bicyclists, pedestrians, and other users.
Transportation and Community and System Preservation Pilot Program	Pending	FHWA	$25 million nationwide	—	state, local, MPOs	—	—	—	Projects that improve system efficiency, reduce environmental impacts of transportation, etc.
Land & Water Conservation Fund (LWCF)	May 1	State DPR	$7.7 million statewide	50%, including in-kind	federal, state, city, county, eligible districts		X		Federally-funded. Projects that acquire and develop outdoor recreation areas and facilities.
State Funding									
Safe Routes to School (SB 10)	May 31	Caltrans	$18 million	11.5% minimum	city, county	X	X	X	Primarily construction program to enhance safety of pedestrian and bicycle facilities.
Bicycle Transportation Account	December	Caltrans	$7.2 million	minimum 10% local match on construction	city, county	X		X	State-funded. Projects that improve safety and convenience of bicycle commuters.
Regional Transportation Improvement Program (RTIP)	December 15, odd years	RTPA	—	—	city, county, transit operators, Caltrans	X		X	Part of State Transportation Improvement Program (STIP), the main state program for transportation project funding. For "improving transportation within the region." RTPA must program funds.
Petroleum Violation Escrow Account (PVEA)	Ongoing	State Legis-lature	$5 million	—	city, county, transit operators, Caltrans	—	—	—	Bicycle and trail facilities have been funded with this program.
Community Based Transportation Planning Demonstration Grant Program	November	Caltrans	$3 million	20% local	MPO, RPTA, city, county	X			Projects that exemplify livable community concepts.
Office of Traffic Safety Grants	January 31	Office of Traffic Safety	—	—	state, city, county			X	Bicycle and pedestrian projects have been funded through this program.

TABLE H-1:
FUNDING SUMMARY

Grant Source	Application Deadline	Agency	Program Funds Available	Matching Requirement	Eligible Applicants	Commute	Recreation	Safety/ Education	Comments
Regional Funding									
Measure A	Varies	STA			Sacramento County agencies	X	X		Bike projects may be eligible.

Notes:

- AQMD – Air Quality Management District
- Caltrans – California Department of Transportation
- CMAQ – Congestion Management and Air Quality
- CTC – California Transportation Commission
- FHWA – Federal Highway Administration
- RTPA – Regional Transportation Planning Agency
- State DPR – California Department of Parks and Recreation (under the State Resources Agency)
- TEA – Transportation Enhancement Activities

Resources:

- FHWA SAFETEA-LU Web site: www.fhwa.dot.gov/safetealu

APPENDIX I:
ENVIRONMENTAL MITIGATION PLAN

APPENDIX I: ENVIRONMENTAL MITIGATION PLAN

The mitigation measures in this Plan were adopted by the Sacramento County Board of Supervisors as a provision of approval of the Sacramento County Bicycle Master Plan (SCBMP).

Future projects within the SCBMP must be developed consistent with the applicable measures contained in the following table:

TABLE OF MEASURES

☐ PS-1 EMERGENCY ACCESS

Emergency vehicle access shall be available on Class I paths and designed in coordination with the Fire District, and the Sheriff's Department.

☐ TR-1 BICYCLE SAFETY

Include Class I bicycle safety programs in the final version of the SCBMP.

☐ BR-1 RIPARIAN HABITAT

Preparation and implementation of a habitat restoration plan to mitigate individual project-related disturbance to riparian habitat by a qualified restoration specialist acceptable to DERA shall include at a minimum, the following elements:

Restoration plantings for the construction disturbance of riparian habitat. The replacement planting area for construction disturbance shall be based on a 2:1 ratio. Following construction, the construction area shall be calculated to determine the actual area of riparian habitat disturbance and the mitigation acreage shall be based on that calculation.

The location of the restoration areas shall include areas directly disturbed by project-related activities and other areas in the immediate project vicinity as approved by DERA.

The restoration plan shall include only riparian habitat indigenous to the restoration location.

Plant density, species mix, and the overall planting design shall be based on and conform to what the physical site conditions (e.g. soils, hydrology) are expected to naturally support and not conflict with existing infrastructure and maintenance requirements (e.g. transmission lines, underground pipelines, levees, culverts).

Performance standards shall be as follows:

a. Performance standards for replacement trees shall be 80% survival for the first year and 100% survival thereafter.

b. Performance standards for other woody vegetation in mixed riparian woodland shall be 75% absolute non overlapping cover by year 3 and 90% by year 5.

c. Vegetation cover shall be measured annually by the establishment of permanent, parallel transects throughout the restoration areas and the recording of the length of vegetation cover by species that intersects a measuring tape laid on the transect line.

d. Maintenance, monitoring and reporting of all restoration sites shall be conducted for a minimum of five (5) years following complete installation. If monitoring determines that performance goals are being met as of year five (5), the site shall be considered established, and all required maintenance, monitoring and reporting activities may be considered completed at the end of year five (5) at the discretion of the Director of DERA. If performance standards are not met, then all required maintenance, monitoring and reporting activities shall continue until year five (5) goals are met or until year eight (8), whichever occurs first.

e. Performance standards shall be evaluated on an individual site bases.

Implement a maintenance and monitoring plan that includes the following:

a. Temporary irrigation methods and irrigation rate to ensure growth during re-establishment of the vegetation. Hand watering of planted materials, as necessary, when irrigation systems are not in place.

b. Temporary enclosures (fencing) that will be used to protect replacement vegetation from grazing animals (rabbits, beaver and deer).

c. Weed control around all woody plant materials shall be a minimum 2-foot diameter zone. Weed control shall include hand pulling, mechanical removal, or spot applications of herbicide as determined by the restoration specialist.

d. Maintenance measures for the elimination and non-establishment of invasive non-native vegetation such as yellow starthistle, Spanish broom, pampas grass, fennel, saltceder, giant reed amundo, Chinese red wisteria, Chinese tallow tree, tree of heaven, and/or white topped pepper grass.

e. Volunteer seedlings of native species shall be preserved unless they are establishing within permanent easements, are within the 2 foot wide weed-free zone around the woody plant materials, and/or threaten public safety.

f. Preparation of record (as maintained) drawings, monthly logs and annual monitoring reports by a qualified biologist.

    i. Record drawings shall contain information such as location, individual plant counts, the size of plantings and other revegetation-related features. These drawings shall be revised annually and submitted with the annual monitoring report. The revised drawings shall include summary tables or hand-written notes showing the species and location of all replacement plantings. At the end of the reporting period, the final record drawings shall show the final status of the replacement plantings and revegetation.

    ii. Annual Monitoring Reports shall include information pertaining to the monthly logs, the percentage of reestablishment of revegetation as it applies to the performance standard, a description of environmental and human factors adversely affecting plants, and the record drawings for the year. The annual monitoring report shall be submitted to DERA for compliance with the Mitigation Monitoring and Reporting Program.

☐ BR-2 VELB AVOIDANCE

Project construction will be prohibited within 100 feet of elderberry shrubs during the VELB emergence and mating period (March 15 – June 15) to eliminate any indirect effects of construction on the beetle or its eggs. These areas shall be fenced and flagged as areas to be avoided.

☐ BR-3 VELB ENCROACHMENT

In areas where encroachment on the 100-foot buffer has been approved by the Fish and Wildlife Service, protective fencing and flagging shall be installed, providing a minimum setback of at least twenty feet outside the perimeter of the dripline of each elderberry plant prior to initiating any construction activities on the site. There will be no physical alterations of any type within the area enclosed by the fencing. No application of herbicides, insecticides and/or other chemical agents shall occur within the proximity of the

elderberry plants or where they might drift or wash into the area of the elderberry plants. Protective fencing shall be removed following project completion.

☐ BR-4 VELB AWARENESS TRAINING

A qualified wildlife biologist shall inform all construction personnel that elderberry shrubs may occur in the area, the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements. A description of the VELB natural history and identifying characteristics shall be provided, along with regulations regarding the restriction on harming or handling this species.

☐ BR-5 VELB SIGNAGE

Erect signs every 50 feet along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

☐ BR-6 VERNAL POOL AVOIDANCE

In order to protect and preserve special status species, project construction and construction-related activities shall be located a minimum of 250 feet from vernal pools. If a 250 foot buffer is not possible or vernal pools are directly impacted by the project, consultation with the USFWS regarding shall occur. Requirements generated during this consultation shall apply.

☐ BR-7 VERNAL POOL CONSTRUCTION FENCING

Adequate fencing will be placed and maintained around any avoided (preserved) vernal pool habitat to prevent impacts from construction.

☐ BR-8 VERNAL POOL AWARENESS TRAINING

All on-site construction personnel shall receive instruction regarding the presence of listed species and the importance of avoiding impacts to these species and their habitat.

☐ BR-9 RAPTOR NEST SURVEY

If construction, grading, or project-related improvements are to occur between March 1 and September 15, a focused survey for raptor nests on the site and on nearby trees (within ½ mile of the site for urban areas, or ¼ mile of the site for rural areas) shall be conducted by a qualified biologist within 14 days prior to the start of construction work (including clearing and grubbing). If active nests are found, the California Department of Fish and Game (CDFG) shall be contacted to determine appropriate protective measures. If no active nests are found during the focused survey, no further mitigation will be required.

☐ BR-10 TRICOLORED BLACKBIRD SURVEYS

In order to mitigate potential impacts to tricolored blackbird (TBB), two pre-construction surveys of the project impact area and areas of appropriate habitat within 100 yards of a project shall be performed by a qualified biologist. The surveys shall be done during the months of March and April (one each month) the year of project construction. If tricolored blackbirds are found nesting within the survey area, project construction shall be postponed until fledging of all nestlings (about July 15). If no tricolored blackbirds are found during the pre-construction survey, no further mitigation would be required.

☐ BR-11 TRICOLORED BLACKBIRD AVOIDANCE

If breeding or nesting tricolored blackbirds are found a TBB Mitigation Plan shall be submitted to the CDFG for review and approval. The plan should include the following measures:

1. Perform preconstruction surveys to determine the number of nesting or breeding TBB and amount of nesting habitat onsite.

Avoidance of active nesting colonies should be practiced through establishment of temporary setbacks and fencing. A qualified biologist shall verifies that the setbacks and fencing are adequate and will determine when the colonies are no longer dependent on the nesting habitat (i.e. nestling have fledged and are no longer using habitat). Breeding season typically last from April to July.

☐ BR-12 TRICOLORED BLACKBIRD HABITAT COMPENSATION

If existing TBB habitat is to be permanently destroyed it will be necessary to recreate nesting habitat on or adjacent to the site in wetland or riparian habitat by planting tules, cattails, native blackberries, etc, at an appropriate location. Open accessible water, foraging habitat with adequate insect prey nearby (0-2 km from nests) and nesting substrate protected from predators should be present and adequately preserved and protected from future destruction. Habitat needs to be of adequate size (according to CDFG biologist) to support a breeding colony of similar or greater size to the one destroyed by construction.

☐ BR-13 BANK SWALLOW SURVEYS

A focused survey for bank swallow nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on the site. If active nests are found, the applicant shall consult with the California Department of Fish and Game for appropriate avoidance measures. If no active nests are found during the focused survey, no further mitigation will be required.

☐ BR-14 BURROWING OWL SURVEYS

Prior to construction activity a focused survey shall be conducted by a qualified biologist for burrowing owls where suitable habitat is present in the project area. Suitable habitat includes agricultural field margins, drainage ditches, and fallow fields. Surveys shall be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities. Surveys shall be conducted in accordance with CDFG protocol (CDFG 1995).

1. If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings shall be prepared and no further mitigation is necessary.

If an occupied burrow is found, consult with the California Department of Fish (CDFG), prior to construction, to determine if avoidance is possible or if burrow relocation will be required.

In order to avoid direct impacts to owls, no activity shall take within 160 feet of an active burrow from September 1 to January 31 (wintering season) or 250 feet from February 1 through August 31 (breeding season). Protective fencing shall be place, at the distances above, around the active burrows and no activity shall occur within the protected buffer areas.

Any impact to active owl burrows, relocation of owls or mitigation for habitat loss shall be done in accordance with CDFG guidelines. Written evidence from CDFG staff shall be provided to DERA attesting to the permission to remove burrows or relocate owls.

☐ BR-15 CALIFORNIA TIGER SALAMANDER SURVEY

Prior to specific project construction in the vicinity of potential California tiger salamander habitat, survey all California tiger salamander (CTS) habitat that may be directly affected by proposed project activities. Not less than two weeks before ground-disturbing activities begin, a qualified biologist shall survey appropriate habitat within the project site that may be directly affected by project activities for the presence of CTS using the protocol provided by the USFWS (2003). Daily visual clearance surveys shall also be conducted during initial ground-disturbing activities. If any CTS is identified where habitat disturbance is proposed, work shall be halted and a USFWS-approved biologist shall be contacted to determine appropriate actions, unless already stipulated by the USFWS. If the USFWS approves moving salamanders, the qualified biologist shall be allowed sufficient time to move the species from the work site before work activities resume. Only USFWS-approved biologists shall participate in the capturing, handling, and translocation of CTS. Any CTS relocated by the project shall be moved to nearby appropriate habitat, as determined by the qualified biologist. Results of the preconstruction surveys shall be reported to USFWS.

☐ GIANT GARTER SNAKE AVOIDANCE

To minimize the potential for direct take of giant garter snakes, a state and federally threatened species, the following mitigation measures shall be implemented for specific projects that are in the vicinity of giant garter snake habitat:

1. All construction activity within giant garter snake habitat (aquatic habitat and adjacent upland habitat within 200 feet of aquatic habitat) should be conducted between May 1 and October 1.

Construction and maintenance personnel should participate in a USFWS approved worker environmental awareness training program. Under the guidelines of this program, workers should be informed about the presence of GGS and habitat associated with this species.

Any dewatered habitat must remain dry for at least 15 days after April 15 and prior to excavating or filling of the dewatered habitat.

The site will be inspected by a Service-approved biologist within 24-hours of commencement of construction activities. The monitoring biologist will be available thereafter; if a snake is encountered during construction activities, the monitoring biologist shall have the authority to stop construction activities until appropriate corrective measures have been completed or it is determined that the snake will not be harmed. Giant garter snakes encountered during construction activities should be allowed to move away on their own. The biologist shall report within one working day to the Service any incidental take. The project area shall be re- inspected whenever a lapse in construction activity of two weeks or greater has occurred.

Clearing of wetland vegetation will be confined to the minimal area necessary to excavate toe of bank for riprap or fill placement. Excavation of channel for removal of accumulated sediments will be accomplished by equipment located on and operated from the top of the bank, with the least interference practical for emergent vegetation.

Minimize habitat disturbance by restricting movement of heavy equipment to and from the project site to established roadways and areas designated for construction and staging.

During project activities, properly contain or remove all trash that may attract predators to the worksite. Following construction, all trash and construction debris shall be removed from work areas.

No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes shall be placed on the project site when working within 200 feet of snake aquatic habitat. Possible substitutes include coconut coir matting, tackified hydroseeding compounds, or other materials approved by the Service.

After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.

☐ BR-17 NORTHWESTERN POND TURTLE AVOIDANCE

No project related activity may occur which causes “take” of a Northwestern pond turtle, which is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code -Section 86), unless the applicant has been authorized a “take” permit [Sections 2081(b) and (c) of the California Endangered Species Act]. Written proof of the permit must be submitted to the Department of Environmental Review and Assessment prior to any clearing, grubbing, or grading.

1. Twenty-four hours prior to ground disturbing activity (i.e. clearing, grubbing, or grading) have a qualified biologist perform a survey for Northwestern pond turtle The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the Department of Environmental Review and Assessment (DERA) prior to ground disturbing activity. If no Northwestern pond turtle(s) is found during the survey, no further mitigation will be required.

If northwestern pond turtle are detected the project proponent will be required to either avoid all impacts to northwestern pond turtle or if impacts are unavoidable apply for a “take” permit through the California Department of Fish and Game.

If a northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the turtle will not be harmed.

Northwestern pond turtles encountered during construction should be allowed to move away on their own. Trapped or injured individuals shall be move out of harm’s way outside of the construction zone but within suitable turtle habitat (wetland).

☐ BR-18 STEELHEAD AND SALMON AVOIDANCE

Minimize risk of direct take (Steelhead and Salmon) by avoiding in-channel construction on the main channel of the American River during the peak migration period (November through May).

☐ BR-19 FISH SALVAGE AND RESCUE PROGRAM

Develop and implement a fish salvage and rescue program (Program) that will help reduce direct take of fishes during coffer dam and pier placement, dewatering, and under any debris or spill clean-up operations. The Program shall require participation by a qualified fish biologist with all required ESA permits to oversee field operations, salvage activities, and determine suitable time(s) and location(s) of release for rescued fish.

☐ BR-20 WATER QUALITY FISH PROTECTION

To lessen the potential of overbank flood waters to entrain construction materials and result in injury to floodplain fish, and to prevent water quality impacts that result from over-wintering soil erosion or pollutant sources within the floodplain, implement the following:

1. Temporary stockpiling of construction material, including vehicles and portable equipment, supplies, fuels and chemicals, will be restricted to designated construction staging areas with the Project Area.

2. Construction activities that occur between October 15 and May 15, above the top of channel bank (within the floodplain), shall be limited to those actions that can adequately withstand high flows without resulting in the inundation of and entrainment of construction materials in floodflows.

☐ BR-21 EROSION AND WATER QUALITY PROTECTION PLAN

The applicant shall prepare and implement an erosion control and water quality protection plan that will be subject to the review and approval of the County Department of Water Resources. The Plan shall include, but not be limited to, the following measures to protect water quality during construction:

1. Construction activities within the area of the Ordinary High Water (OHW) line shall be limited to the period from May 30th to October 1st of each construction year.

2. Construction activities that occur between October 15 and May 15 within the floodplain, but above the OHW line, shall be limited to those actions that can adequately withstand high river flows without resulting in the inundation of and entrainment of materials in floodflows.

3. Stockpiling of construction materials, including portable equipment, vehicles and supplies, including chemicals, will be restricted to the designated construction staging areas and exclusive of the wetlands avoidance areas.

4. Sheet metal coffer dams will be used for all areas of extended in-water work, and pumped water will be routed to either: (1) a sedimentation pond located on a flat stable area above the OHW that prevents silt-laden runoff to enter the river; or, (2) a sedimentation tank/holding facility that allows only clear water to return to the river and includes disposal of settled solids at an appropriate off-site location.

5. Refueling of construction equipment and vehicles within the floodplain shall only occur within designated, paved, bermed areas where possible spills will be readily contained.

6. Between October 15 and May 15, truck and cement equipment wash-down will not occur within the floodplain.

7. Equipment and vehicle operated within the floodplain shall be checked and maintained daily to prevent leaks of fuels, lubricant or other fluids to the river.

8. Litter and construction debris shall be removed from below the OHW line daily, and disposed of at an appropriate site. All litter, debris and unused materials, equipment or supplies shall be removed from construction staging areas above OHW at the end of each summer construction season.

9. No on-site harvesting of in-situ gravels shall occur for temporary landings and ramps. Where additional earth material is required below the OHW line, clean washed gravels (from an off-site commercial/permitted source) will be the preferred material. If another type of engineered fill is required, it will likewise be obtained from an off-site permitted source, and all excess earth material will be properly disposed of outside the floodplain upon completion of the construction phase. If it is determined by DFG that the clean washed gravels used for fill would benefit fisheries, these clean washed gravels may be left on-site consistent with the DFG Streambed Alteration Agreement.

☐ BR-22 DEWATERING (BRIDGE PROJECTS)

Implement the following measures related to dewatering and drilling fluids:

1. Water pumped from between the sheetpile dams will be routed to a sedimentation tank/holding facility located above the OHW that allows only clear water to return to the American River and includes disposal of settled solids at an appropriate off-site location.

2. All tailings and drilling fluids from the construction of any cast-in-hold pilings for the existing bridge or new pedestrian bridge will be contained and end-hauled from the site for proper disposal.

☐ BR-23 RIPARIAN WOODY VEGETATION PROTECTION

Woody vegetation shall be cut only in the minimum area required to provide access or permanent footprint space. Where possible, vegetation will be cut rather than grubbed out, to allow for vegetative regeneration and to facilitate soil protection and stabilization.

☐ BR-24 WETLANDS AND WATERS OF THE UNITED STATES

All grading plans shall state:

“It is the Contractor’s responsibility to comply with all state and federal laws and regulations including but not limited to the Endangered Species Act, California Fish and Game Code (Section 1602), Porter-Cologne Act, and the Clean Water Act.”

To compensate for the permanent loss of wetlands, the applicant shall perform one of the following:

1. Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of achieving a no net loss of wetlands. The required Plan shall be submitted to the Sacramento County Department of Environmental Review and Assessment, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game for approval prior to its implementation.

2. Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development, and deposited into the Wetlands Restoration Trust Fund.

☐ BR-25 NATIVE TREE AVOIDANCE

With the exception of trees that must be removed or encroached upon for individual projects as determined through the design process and mitigated through measure BR-26, all native oak and California black walnut trees that are 6 inches dbh or larger (10 inches aggregate for multi trunk trees) and California sycamore trees that are 19 inches dbh or larger on the project site shall be protected from possible impact. All portions of adjacent off-site native oak, California black walnut, and California sycamore trees with driplines that extend onto the project site or may be impacted by the project, shall be preserved and protected as follows:

1. A circle with a radius measurement from the trunk of the tree to the tip of its longest limb shall constitute the dripline protection area of each tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each tree. Removing limbs that make up the dripline does not change the protected area.

2. Any protected trees on the site that require pruning shall be pruned by a certified arborist prior to the start of construction work. All pruning shall be in accordance with the American National Standards Institute (ANSI) A300 pruning standards and the International Society of Arboriculture (ISA) “Tree Pruning Guidelines.”

3. Prior to initiating construction, temporary protective fencing shall be installed at least one foot outside the driplines of the protected trees within 100-feet of construction related activities, in order to avoid damage to the tree canopies and root systems.

4. Any removal of paving or structures (i.e. demolition) that occurs within the dripline of a protected oak tree shall be done under the direct supervision of a certified arborist. To the maximum extent feasible, demolition work within the dripline protection area of the oak tree shall be performed by hand. If the certified arborist determines that it is not feasible to perform some portion(s) of this work by hand, then the smallest/lightest weight equipment that will adequately perform the demolition work shall be used.

5. No signs, ropes, cables (except those which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the protected trees. Small metallic numbering tags for the purpose of preparing tree reports and inventories shall be allowed.

6. No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of protected trees.

7. No grading (grade cuts or fills) shall be allowed within the driplines of protected trees.

8. Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of any protected tree.

9. No trenching shall be allowed within the driplines of protected trees. If it is absolutely necessary to install underground utilities within the dripline of a protected tree, the utility line shall be bored and jacked under the supervision of a certified arborist.

10. The construction of impervious surfaces within the driplines of protected trees shall be stringently minimized. When it is absolutely necessary, a piped aeration system per County standard detail shall be installed under the supervision of a certified arborist.

11. Trunk protection measures, per Sacramento County standards, shall be used for all protected trees whre development/construction activity occurs within 10 feet of the trunk of the tree.

☐ BR-26 NATIVE TREE REMOVAL COMPENSATION

Prior to the construction of specific projects within the SCBMP, the project proponents shall submit an arborist report for the project impact area if native or landmark trees are present on the site. The report shall include species, diameter, dripline and the health of the trees, and shall be prepared by an ISA certified arborist. The report shall include an exhibit that shows the trees and their dripline in proximity to the project modifications. The report shall identifiy any tree that will be removed and quantify the dripline encroachment from project equipment or facilities. The removal of native oak trees and California black walnut 6 inches dbh or larger, and California sycamore 19 inches dbh or larger shall be compensated by planting native oak trees, California black walnut, or California sycamore equivalent to the dbh inches lost, based on the ratios listed below, at locations that are authorized by the Department of Environmental Review and Assessment.

To the maximum extent feasible, all on-site healthy native oak trees shall be protected and preserved. Any substantial (>20%) encroachment and/or removal of native oak trees shall be compensated by planting native trees (valley oak/*Quercus lobata*, interior live oak/*Quercus wislizenii*, blue oak/*Quercus douglasii*, and California black walnut), equivalent to the dbh inches lost, based on the ratios listed below, at locations that are authorized by the Department of Environmental Review and Assessment. On-site preservation of native oak trees that are less than 6 inches (<6 inches) dbh, may also be used to meet this compensation requirement. Encroachment of over 20 percent within the dripline radius of native trees will require compensatory mitigation based on the percentage of encroachment multiplied by the dbh. Encroachment over 50 percent will require compensation for the entire tree.

Equivalent compensation based on the following ratio is required:

- one deepot seedling (40 cubic inches or larger) = 1 inch dbh
- one 15-gallon tree = 1 inch dbh
- one 24-inch box tree = 2 inches dbh
- one 36-inch box tree = 3 inches dbh

A Replacement Native Tree Planting Plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the Environmental Coordinator for approval. The Replacement Native Tree Planting Plan(s) shall include the following minimum elements:

1. Species, size and locations of all replacement plantings;
2. Method of irrigation;
3. The Sacramento County Standard Tree Planting Detail L-1, including the 10-foot deep boring hole to provide for adequate drainage;
4. Planting, irrigation, and maintenance schedules;

5. No replacement tree shall be planted within 15 feet of the driplines of existing oak trees or landmark size trees that are retained on-site, or within 15 feet of a building foundation or swimming pool. The minimum spacing for replacement oak trees shall be 20 feet on-center.

If oak tree replacement plantings are demonstrated to the satisfaction of the Environmental Coordinator to be infeasible for any or all trees removed, then compensation shall be through payment into the County Tree Preservation Fund. Payment shall be made at a rate of $325.00 per dbh inch removed but not otherwise compensated, or at the prevailing rate at the time payment into the fund is made.

☐ CR-1 CULTURAL RESOURCE AVOIDANCE

If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the Applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native American Heritage Commission shall be followed, and the monitor shall be retained at the Applicant's expense.

Work cannot continue within the 200-foot radius of the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources.

If a potentially-eligible resource is encountered, then the archaeologist, DERA, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations or total data recovery as mitigation. The determination shall be formally documented in writing and submitted to DERA as verification that the provisions of CEQA for managing unanticipated discoveries have been met.

In addition, pursuant to Section 5097.97 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

☐ CR-2 PALEONTOLOGICAL RESOURCE AVOIDANCE

1. As a condition of approval for discretionary SCBMP projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.

2. Projects located within areas known to be sensitive for paleontological resources, should be monitored to ensure proper treatment of resources and to ensure crews follow proper reporting, safeguards and procedures.

3. Require that a certified geologist or paleontological resources consultant determine appropriate protection measures when resources are discovered during the course of development and land altering activities.

☐ HM-1 HAZARDOUS MATERIALS CONTINGENCY PLAN

The Sacramento County Department of Transportation shall develop a contingency plan in the event that construction activities uncover contamination. This plan should include steps to contain any contamination, consultation with regulatory agencies and a work plan to evaluate and characterize any contamination. In addition, the Sacramento County Department of Transportation shall consult with the County Counsel's Office regarding potential liabilities if contamination is encountered during construction activities.

☐ HM-2 HAZARDOUS MATERIALS SITE ASSESSMENT

Prior to acquiring additional right-of-way or construction of the proposed project, conduct a Phase 1 Site Assessment to the satisfaction of Sacramento County Environmental Management Department. If contamination is identified within the acquisition area, responsibility of the clean up shall be identified and remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable agencies.