RESOLUTION NO. 2014-156

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ELK GROVE REPEALING THE 2004 BICYCLE AND PEDESTRIAN MASTER PLAN AND 2007 TRAILS MASTER PLAN; AND ADOPTING THE 2014 ELK GROVE BICYCLE, PEDESTRIAN, AND TRAILS MASTER PLAN, PROJECT NO. WTL008

WHEREAS, General Plan Policy PTO-2 and corresponding Action PTO-2-Action 3 directs the City to adopt a "comprehensive Parks and Trails Master Plan"; and

WHEREAS, in 2004, the City adopted the Bicycle and Pedestrian Master Plan; and

WHEREAS, in 2007, the City adopted the Trails Master Plan; and

WHEREAS, in 2010, the City adopted the Parks and Recreation Master Plan; and

WHEREAS, changes have occurred in State and Federal law regarding minimum qualifications for transportation funding; and

WHEREAS, the City desires to establish criteria for evaluating and prioritizing improvements as it relates to the City's annual Capital Improvement Plan; and

WHEREAS, the City desires to consolidate the existing Bicycle and Pedestrian Master Plan and Trails Master Plan into one Bicycle, Pedestrian, and Trails Master Plan (the Project), while concurrently updating the programs and policies; and

WHEREAS, the Project is a Project under the California Environmental Quality Act (CEQA); and

WHEREAS, the City prepared an Environmental Impact Report (EIR) under CEQA for the adoption of the General Plan in 2003; and

WHEREAS, Section 15183 of the State CEQA Guidelines provides an exemption for projects that are consistent with a General Plan for which an environmental impact report was prepared; and

WHEREAS, the Planning Commission held a duly-noticed public hearing on June 19, 2014 as required by law to consider all of the information presented by staff and public testimony presented in writing and at the meeting; and

WHEREAS, the Planning Commission directed certain changes in the draft materials and adopted a resolution recommending adoption of the Project by the City Council; and

WHEREAS, the City Council held a duly-noticed public hearing as required by law to consider all of the information presented by staff and public testimony presented in writing and at the meeting.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Elk Grove hereby repeals the 2004 Bicycle and Pedestrian Master Plan and the 2007 Trails Master Plan, and adopts the 2014 Elk Grove Bicycle, Pedestrian, And Trails Master Plan as provided in Exhibit A (and incorporated herein by this reference), based upon the following findings:

California Environmental Quality Act (CEQA)

Finding: The Bicycle, Pedestrian, and Trails Master Plan Project (the Project) is exempt from the California Environmental Quality Act pursuant to State CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning).

Evidence: The proposed project is exempt from CEQA pursuant to State CEQA Guidelines Section 15183 (*Projects Consistent* with a Community Plan, General Plan, or Zoning). This exemption applies to projects that are consistent with a General Plan. The Project would amend sections of the General Plan related to policies for parks and trails, update zoning regulations, and adopt a new Bicycle, Pedestrian, and Trails Master Plan. The proposed General Plan amendments correct references to the consolidated Bicycle, Pedestrian, and Trails Master Plan and remove the previous trails map from the General Plan document. These amendments update General Plan Policies PTO-1 through PTO-8 and are internally consistent with the balance of the General Plan as they continue to ensure the placement, design, and construction of parks and trails resources to the community consistent with the other polices of the General Plan. Further, the zoning changes implement the General Plan policies by ensuring the construction of bicycle parking as part of new development. The new Bicycle, Pedestrian, and Trails Master Plan implements the General Plan polices by providing an implementation plan for these services and facilities. Text amendments to Title 23 of the Municipal Code do not alter the allowed intensity or density of development beyond that contemplated in the General Plan and General Plan EIR. Therefore, no further environmental review is required for these amendments. Further, CEQA review for the individual construction projects identified in the Master Plan will be completed prior to the commitment of funding for their construction. Therefore, this project qualifies for the identified exemption and no further environmental review is required.

Elk Grove Bicycle, Pedestrian, and Trails Master Plan

Finding: The proposed Bicycle, Pedestrian, and Trails Master Plan is consistent with the Elk Grove General Plan.

Evidence: The proposed Bicycle, Pedestrian, and Trails Master Plan is consistent with and implements the goals and policies of the General Plan by providing the plans,

standards, and process for development and maintenance of bicycle, pedestrian and trail improvements throughout the City of Elk Grove. Specifically, the BPTMP implements the following General Plan goals, policies and implementation items: Guiding Goal 1 and subsequent focused Goals 1-2, 1-3, and 1-8; Policies C1-1 (circulation planning for all modes of travel), C1-3 (incentives for alternate modes of travel), C1-5 (encouraging use of transportation alternatives) and Action C1-5-5 (prepare and implement a bike and pedestrian master plan), PTO-1 (support citywide parks and trails), PTO-3 (funding of parks and trails), PTO-7 (trails system for connectivity), PTO-8 (trails map), PTO-9 (trail funding), PTO-10 (trailheads), PTO-11 (trails along streams), PTO-12 (trail safety), PTO-13 (trail location relative to farmland), and PTO-14 (support for volunteers to maintain trails).

PASSED AND ADOPTED by the City Council of the City of Elk Grove this 9th day of July 2014

JAMES COOPER, VICE MAYOR of the
CITY OF ELK GROVE

ATTEST:

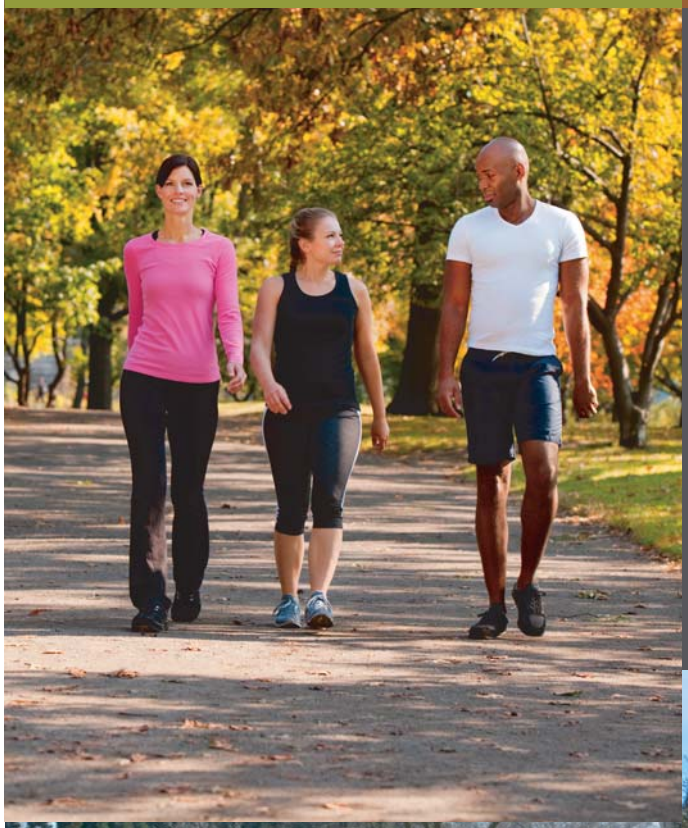
JASON LINDGREN, CITY CLERK

APPROVED AS TO FORM:

JONATHAN P. HOBBS,
CITY ATTORNEY

EXHIBIT A

CITY OF ELK GROVE



Bicycle, Pedestrian, and Trails Master Plan

ADOPTED
JULY 2014

Table of Contents

CONTENTS

CHAPTER 1: INTRODUCTION

CHAPTER 2: RELATIONSHIP TO OTHER PLANS

Table of Contents

CHAPTER 3: GOALS AND MILESTONES

CHAPTER 4: EXISTING CONDITIONS

CHAPTER 5: PROPOSED BIKEWAY, TRAILS AND PEDESTRIAN NETWORK

CHAPTER 6: EDUCATION, ENCOURAGEMENT, AND ENFORCEMENT PROGRAMS

CHAPTER 7: STANDARDS & GUIDELINES

CHAPTER 8: FUNDING AND IMPLEMENTATION

Table of Contents

FIGURES

TABLES

Table of Contents

Introduction 1

The Bicycle, Pedestrian, and Trails Master Plan (BPTMP or Master Plan) is intended to guide and influence pedestrian, bicycle, and trail policies, programs, and development standards to make biking and walking in the City of Elk Grove (City) more safe, comfortable, convenient, and enjoyable for all community members. The ultimate goal of the BPTMP is to increase the number of persons who walk and bicycle for transportation to work, school, and errands, and for recreation. The City seeks to have exemplary bicycle, pedestrian, and trail facilities that provide connectivity throughout the City and the wider Sacramento region in order to offer recreational opportunities and an alternative method for transportation for City residents.

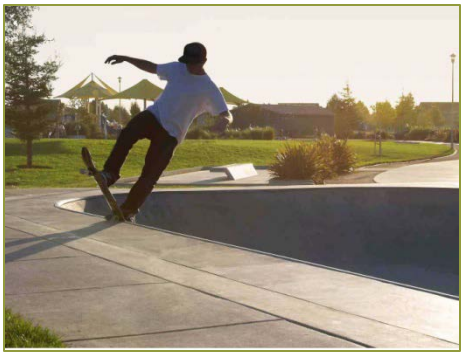
The BPTMP identifies existing facilities, opportunities, constraints, and destination points for bicycle users, pedestrians, and trail users in the City. The City's General Plan Circulation and Open Space Element goals and policies serve as the basis for developing BPTMP goals and supporting policies for planning and implementation of bikeway, pedestrian, and off-street, multi-use trail facilities within the public right-of-way. The BPTMP includes an overview of relationships to other plans; goals and policies; an existing conditions summary; recommended and proposed bikeway, trails, and pedestrian networks; existing programs; standards and guidelines; implementation criteria and priorities; and maps showing existing and recommended locations of bicycle and pedestrian paths and trails.

1 CHAPTER

1.1 PURPOSE/BACKGROUND

The BPTMP addresses bicycle, pedestrian, and equestrian facilities within the City public right-of-way.

Purpose



The purpose of the BPTMP is to:

- Improve and encourage bicycle and pedestrian transportation within the City.
- Improve and encourage the use of an off-street, multi-use trail system.
- Provide clear direction regarding location and design for future bicycle, pedestrian, and trail facilities and amenities.
- Enhance mobility throughout the City and to allow for connections with the surrounding area.
- Identify potential funding sources for future bicycle, pedestrian, and trail planning, construction, and maintenance.
- Establish prioritization criteria for implementation.

This update consolidates the City of Elk Grove Bicycle and Pedestrian Master Plan (adopted in July 2004) and the City Trails Master Plan (adopted in January 2007) for the following benefits:

- Consistency between the two plans and to eliminate redundancy.
- Consistency with current State and federal law.
- Creation of a single, current map showing all existing and planned bicycle, pedestrian, and trail facilities in the City.
- Reflecting updated physical conditions and projects in the City.
- Formalizing criteria for evaluating and prioritizing improvements as it relates to the City's annual Capital Improvement Plan.

The BPTMP will be continually updated as goals are achieved and as new funding sources become available, in order to ensure consistency with the City of Elk Grove General Plan.

Regional Context

Several plans have been produced for the Sacramento region over the past 30 years which detail walking, bicycling, hiking, and horseback riding facilities. The Sacramento County Bicycle Master Plan (BMP) is the most recent document developed to serve the recreational and transportation needs of the public. The Sacramento County BMP was prepared in 2011 and includes all of Sacramento County, including the City. The goal of the Sacramento County BMP is to develop a comprehensive plan which will meet the needs of all bicyclists.

In June 2013, the Sacramento Area Council of Governments (SACOG) adopted the Regional Bicycle, Pedestrian, and Trails Master Plan (SACOG MP). The primary goal of the SACOG MP is to identify and provide connections between communities and projects among jurisdictions to ensure that crucial linkages are created in a timely, cost-effective, and efficient manner.

Local Context

The BPTMP is a separate document from the Sacramento BMP and the SACOG MP. The need for a Bicycle, Pedestrian, and Trails Master Plan specific to City was identified during the preparation of the Elk Grove General Plan.

The City began to rapidly develop as a result of an increase in jobs to the Sacramento County region and the availability of land outside the downtown Sacramento area. In connection with the population growth experienced by the wider Sacramento region as a whole, the City has grown from a population of 72,665 in 2000 to a population of 160,688 in 2014. Increased population led to additional vehicle traffic throughout the City.

Motor vehicle traffic plays a major role in the creation of air pollution, which affects the City and the region. Encouraging modes of transport and movement which reduce reliance on motor vehicles, especially for shorter trips to local facilities, are part of the City's efforts to improve local and regional air quality. An improved transportation network for non-motorized modes of transportation, such as bicycling and walking, is ideal. Benefits include fewer vehicle trips resulting in less traffic, additional recreational opportunities, increased access to local destinations, improved public health, reduced noise, improved air quality, and energy conservation.

1.2 PLANNING AREA

The City originated as a small community that sprang up around James Hall's Elk Grove Hotel and Stage Stop. Today, the City consists of approximately 45 square miles (29,038 acres) in the southern portion of Sacramento County and is approximately 15 miles from downtown Sacramento (**Figure 1.1**).

There are many unique areas in the City due to its different periods of development and which reflect a diversity of land uses including agriculture, low-density residential areas, higher-density residential areas, parklands, shopping areas, and employment centers (**Figure 1.2**). Single-family homes are the City's predominant residential land use, with densities primarily ranging from 4 to 10 dwelling units per acre. These homes are typically within subdivisions that are connected to the main north/south and east/west thoroughfares by arterial streets.

The largest commercial and employment centers are located at the intersections of the major thoroughfares and also near the north/south-running Highway 99, which bisects the City. The western, central, and northern portions of the City are largely developed with some infill opportunities, whereas the eastern and southern portions of the City are undergoing current development. The General Plan (adopted in July 2009) guides land use planning in the Plan Area.

According to the land use section of the General Plan Background Report (2003), residential and agricultural were the two primary land uses in the City area. Institutional uses such as schools, churches, and other public entities also serve as major land uses. A number of large projects are under way that would increase the acreage of residential, commercial, schools, and park uses in the City; these projects are identified in the East Elk Grove Specific Plan, the Laguna Ridge Specific Plan, and the Southeast Policy Area Strategic Plan. There are other large projects within the City, as well as large specific plan and comprehensive plan projects located near the City limits.

FIGURE 1.1

REGIONAL CONTEXT: GREATER SACRAMENTO AREA

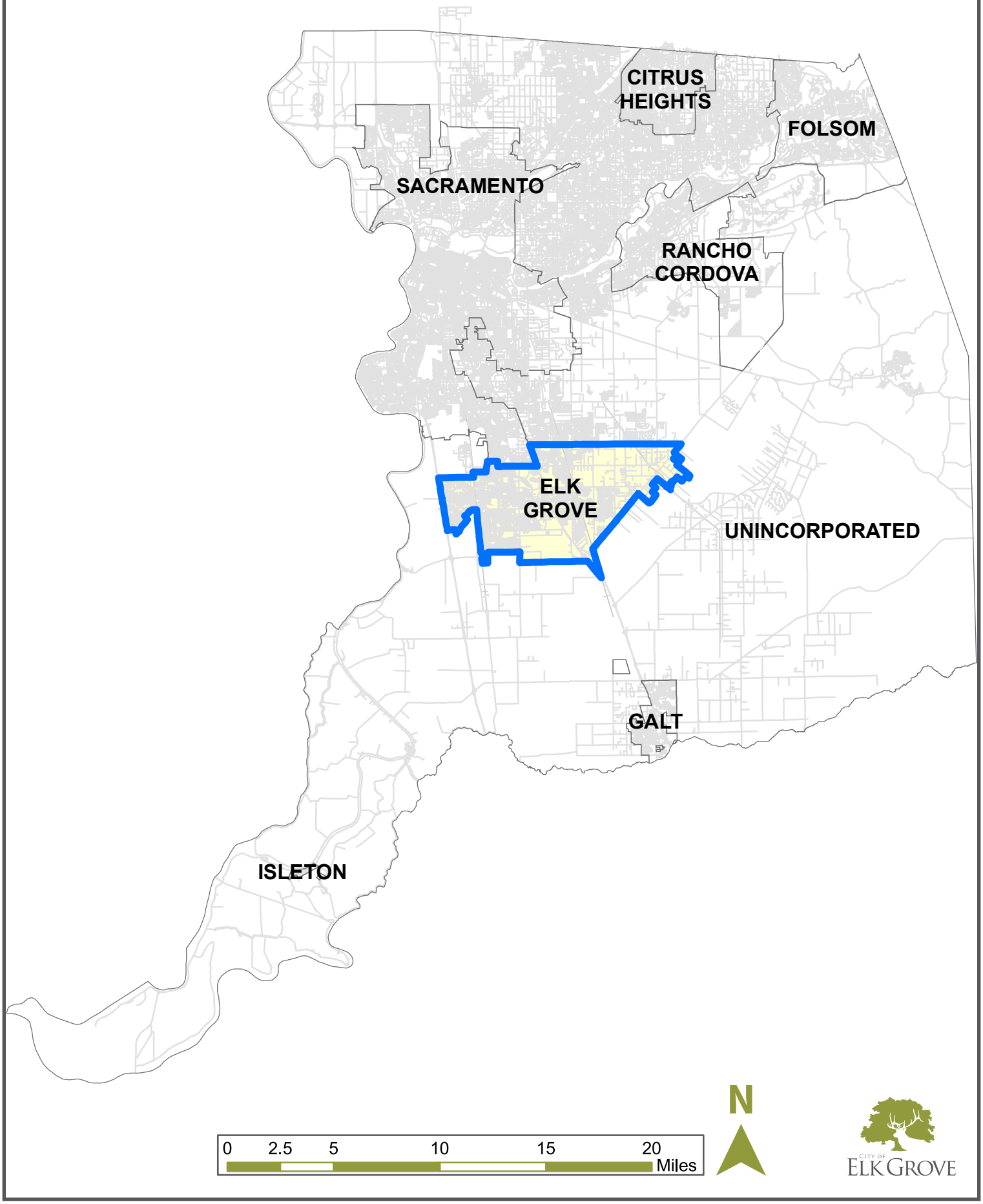
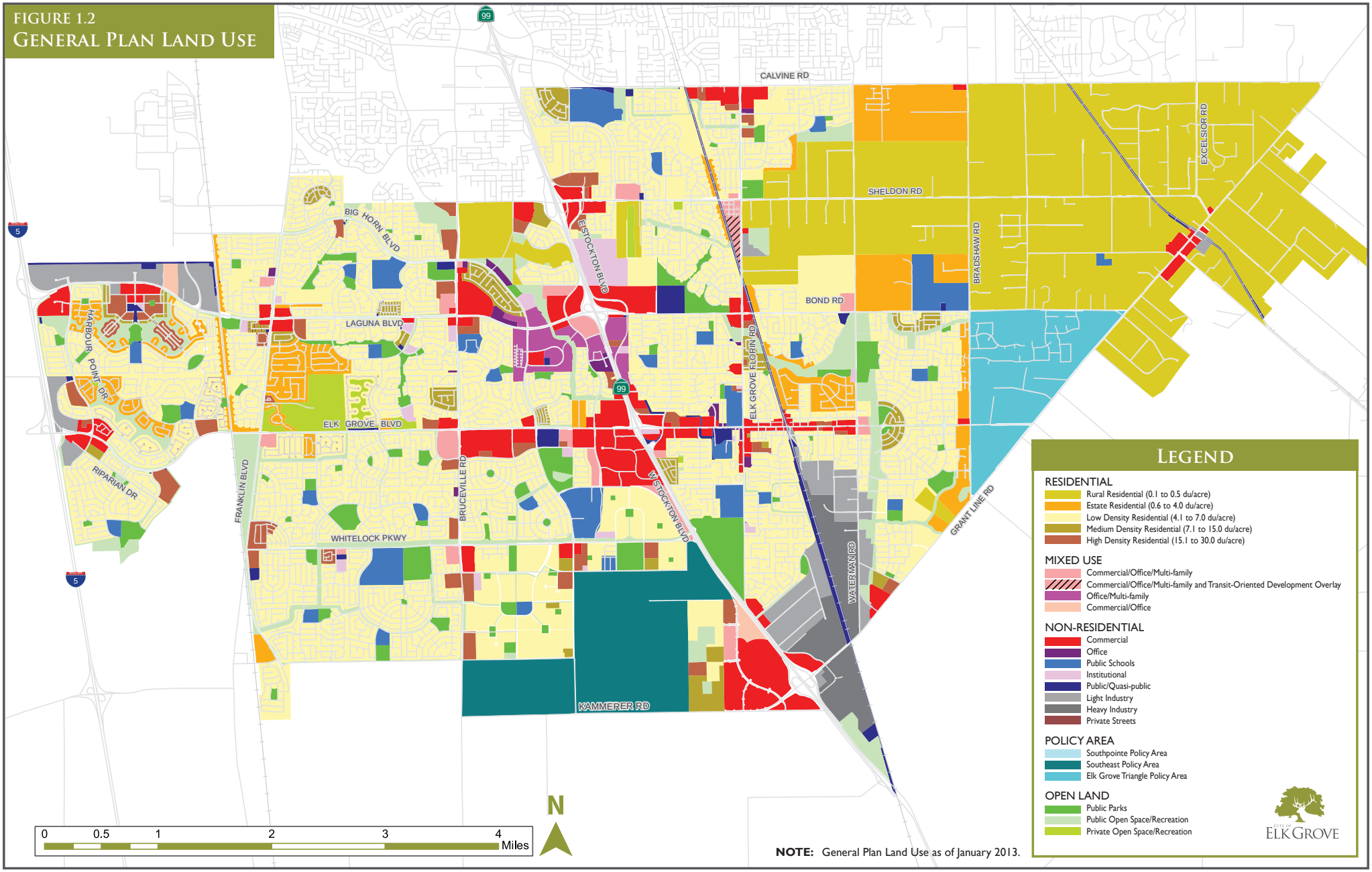


FIGURE 1.2
General Plan Land Use



1.3 EXISTING DATA

Demographic Data

In 2012, 159,064 residents and 47,747 families lived in the City. The median age was 33.1 and the median income was $76,835. The California Department of Finance projects that the Sacramento region's population will continue to increase in the future. Sacramento County's population is projected to increase 45 percent, from 1.4 million in 2010 to 2.1 million by 2050. Like the Sacramento region, the population of the City is projected to increase in the future. With the increased population, transportation and mobility needs will also increase.

City Mode Share Data

In 2012, 68,094 residents commuted to work in the City. The American Community Survey data in **Table 1.1** indicates that, in the City, 1 percent of commuters walked to work and 0.2 percent of commuters rode a bicycle to work—considerably less than in Sacramento County (2.3 percent and 1.3 percent) and California (2.7 percent and 1.1 percent), respectively.

The data is a limited resource because it asks respondents for their primary mode of travel to work; bicycling or walking can often be a secondary or linked mode of transit. In addition, bicycle or walking trips to schools are not counted, though they usually directly replace vehicle trips.

TABLE 1.1. COMMUTING TO WORK IN ELK GROVE, SACRAMENTO COUNTY, AND CALIFORNIA IN 2012

Commuting to Work	Elk Grove	Sacramento County	California
	Percentage	Percentage	Percentage
Car, truck, or van – drove alone	74.8%	76%	73.4%
Car, truck, or van – carpooled	16.9%	11.9%	11.1%
Public transportation	0.9%	2.4%	5.2%
Walked	1%	2.3%	2.7%
Bicycle	0.2%	1.3%	1.1%
Taxicab, motorcycle, or other means	0.5%	1.0%	1.3%
Worked at home	5.8%	5.1%	5.3%
Mean travel time to work (minutes)	29.7	25.6	27.5

Source: American Community Survey, 2012

The City has an opportunity to build on the existing mode split. Implementation of the BPTMP could potentially increase the percentage of people who commute by bicycle to 5 percent by 2030. The City of Elk Grove 2013–2021 Housing Element projects that the population will increase from 159,074 in 2013 to 193,783 in 2029, an annual growth rate of 1.24 percent. Assuming that the City population will increase at the same rate through 2030, the City's population and workforce are anticipated to grow to approximately 198,611 and 78,989, respectively. If the City could achieve its goal to increase the percentage of people who commute by bicycle to 5 percent by 2030, approximately 4,251 people would commute by bicycle in the City in 2030.

In 2001, SACOG completed the Pre-Census Travel Behavior Report Analysis of the 2000 SACOG Household Travel Survey. The SACOG Household Travel Survey details the travel behavior of persons in all of Sacramento, Yolo, Yuba, and Sutter counties, and the western portions of Placer and El Dorado counties. The survey attempted to capture typical weekday travel during the springtime months. Survey results suggest that the mode of travel was strongly influenced by the purpose of the trip, the ratio of vehicles to workers at the household, and the origin and destination areas of the trip. A breakdown of the work and non-work trips by mode of travel in suburban areas is provided in **Table 1.2**.

TABLE 1.2. WORK AND NON-WORK TRIPS BY MODE IN SUBURBAN AREAS

Travel Mode	Work Trips	Non-Work Trips
SOV[1]	85.4%	40.2%
HOV[2] – 2 Persons	7.6%	30.4%
HOV – 3 or More Persons	2.7%	22.3%
Transit (Walk Access)	1.4%	0.3%
Transit (Drive Access)	0.1%	0.3%
Walk	1.8%	4.1%
Bike	1.0%	0.8%
Other	0.0%	1.6%
TOTAL	**100.0%**	**100.0%**

1 Single-Occupant Vehicle

2 High-Occupancy Vehicle

Source: SACOG Pre-Census Travel Behavior Report Analysis of the 2000 SACOG Household Travel Survey, 2001

Survey Data

The City conducted an online survey in 2003 which examined, among other items, residents' travel preferences and interests by bicycle. In 2012, the City conducted two online surveys to explore respondents' current knowledge about the City's trail system and user satisfaction. Selected results from both 2003 and 2012 online surveys are shown below.

Question: Please tell us about the type of cycling you do in Elk Grove. From the following choices, tell us how you would describe most of your cycling:

Response	Number of Responses	Percentage*
Fitness and conditioning	46	29%
Fun and recreation	36	23%
Riding with my children	24	15%
Fast recreational riding	20	12%
Riding to work outside Elk Grove	11	7%
Shopping (grocery store, etc.)	5	3%
Riding to work in Elk Grove	6	3%
Riding to school	3	1%

** Note: Due to the fact that some survey takers did not provide answers to all of the questions figures do not add up to 100%.*

Source: City Online Survey, 2003

Question: What prevents you from riding more often?

Response	Number of Responses	Percentage*
Not enough safe routes	94	65%
Not enough time	23	15%
Too much traffic	16	11%
Can't get to my destination on a bicycle	5	3%
Can't bring family/children	4	2%
Too difficult	1	0.5%

** Note: Due to the fact that some survey takers did not provide answers to all of the questions figures do not add up to 100%.*

Source: City Online Survey, 2003

Question: From this general list of potential bikeway items, which do you think is the MOST important?

Response	Number of Responses	Percentage*
More off-street bike trails	78	52%
More on-street bike lanes	42	28%
Freeway or roadways underpasses/overpasses	15	10%
Education for cyclists and motorists	10	6%
Other safety improvements	2	1%
More bike racks at destinations	1	0%
Showers and lockers in the workplace	1	0%
Better signage	1	0%

** Note: Due to the fact that some survey takers did not provide answers to all of the questions figures do not add up to 100%.*

Source: City Online Survey, 2003

Question: How often do you use Elk Grove's trails system (bike, pedestrian, other)? Choose one answer

Response	Number of Responses	Percentage
More than once a week	54	42.8%
Once per week	28	22.2%
Once per month	21	16.7%
Hardly at all	23	18.3%
TOTAL	**126**	**100%**

Source: City Online Trails Survey, 2012

Question: Would your use of the trail system increase with any kind of the following?

Response	Number of Responses	Percentage
Connect the trails (too many dead ends)	19	38.8%
Safer trails (away from traffic/crossing major roads)	10	20.4%
Better dirt trails (for running)	4	8.2%
More trails	3	6.1%
Better maintenance	3	6.1%
Pet friendly (horse trails & dog-friendly)	3	6.1%
Finish the trails (pave them)	2	4.1%
Other	5	10.2%
TOTAL	**49**	**100%**

Source: City Online Trails Survey, 2012

Question: How do you get information about the City's trails system and maps (Select all that apply)?

Response	Number of Responses	Percentage
Through the Cosumnes Community Services District (CSD/Parks) Publications	56	38.1%
By looking at the City's website under the Planning Department, under Trails committee, or under the "Getting Around Elk Grove" feature	51	34.7%
By using the Elk Grove phone book maps (provided by the CSD)	4	2.7%
Other	36	24.5%
TOTAL	**147**	**100%**

Source: City Online Trails Survey, 2012

As shown in the results of the City's 2003 survey, 65 percent of respondents cited "not enough safe routes" as the most significant obstacle to increasing their cycling, making it the top impediment. Providing off-street bike trails received the highest number of responses for the most important bicycling improvement, followed by providing more on-street bike lanes. As shown in the results of the City's 2012 survey of trails, connecting existing trails would increase 38.8 percent of survey respondents' use of the trail system. Nearly half of survey respondents (42.8 percent) use the trail system more than once per week.

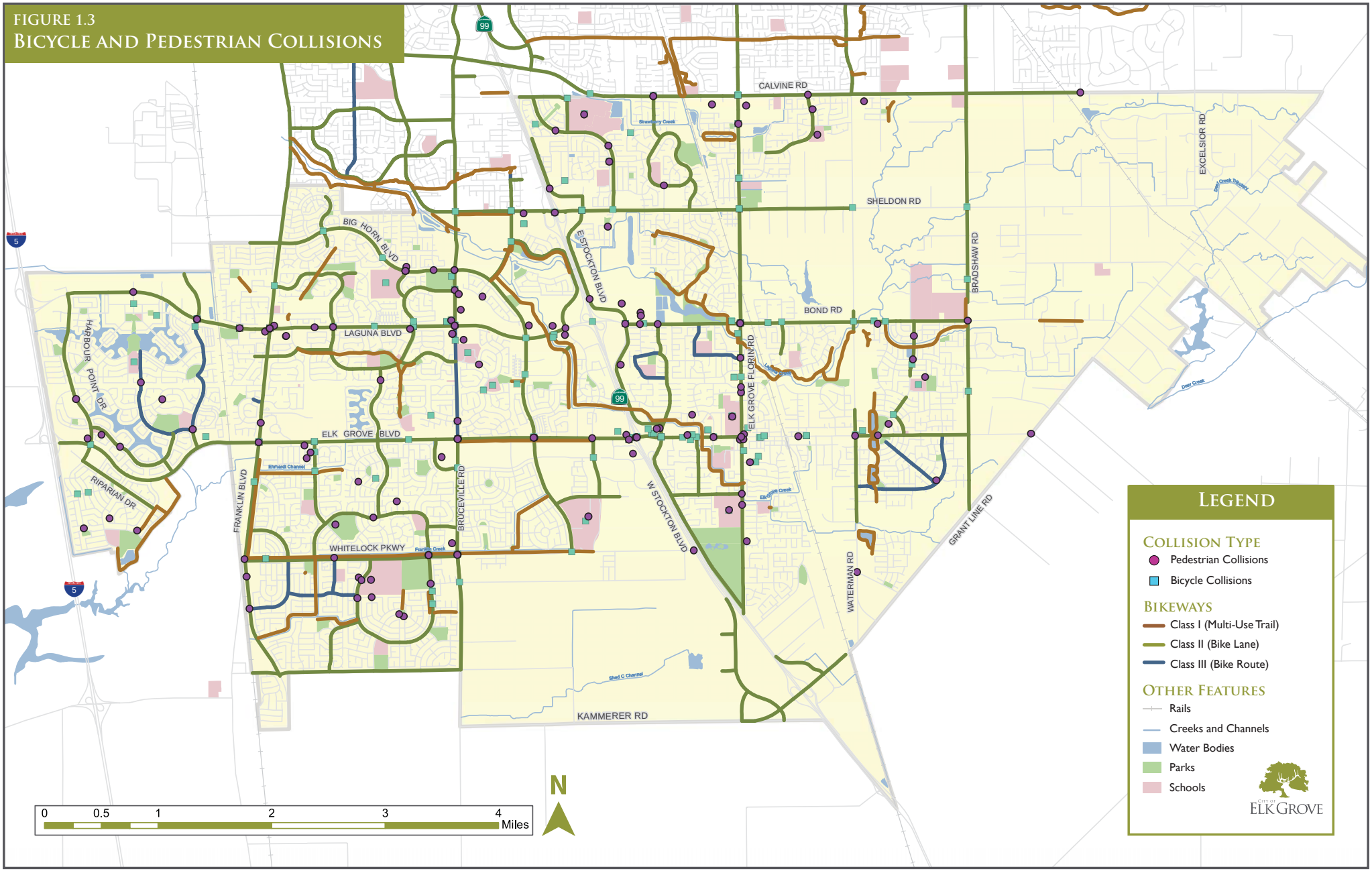
Based on this information, it is estimated that the facility improvements contained in the BPTMP could substantially increase the amount of both home-to-work and other cycling trips in the City by providing more safe routes and, in particular, an increase in the number of dedicated on-street bike lanes. The elimination of "not enough safe routes" as an impediment to cycling could double or triple bicycle use in the City. Additionally, implementing proposed trail connections included in the BPTMP would greatly increase use of the trail system in the City.

Collisions Data

Data collected by the City of Elk Grove Police Department states that from May 2009 to May 2014, there were 180 bicycle-automobile collisions and 165 pedestrian-automobile collision incidents in the City. During this time period, bicycle-automobile collisions accounted for 8 percent of total collisions and pedestrian-automobile collisions accounted for 7 percent of total collisions. **Figure 1.3** illustrates the location of these reported collision incidents.

FIGURE 1.3

Bicycle and Pedestrian Collisions



1.4 PLANNING PROCESS

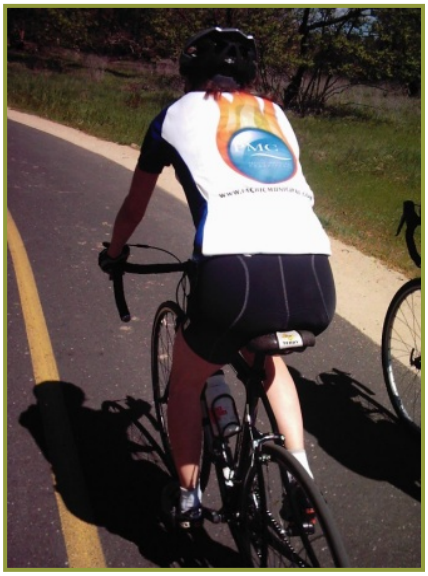
The BPTMP update process involved the consolidation of the City Bicycle and Pedestrian Master Plan (adopted in July 2004) and the City Trails Master Plan (adopted in January 2007). The City built on the research and analysis conducted for the existing plans, worked with key stakeholders, and updated key sections, as necessary, to achieve consistency between the two plans and to eliminate redundancy, to establish criteria for evaluating and prioritizing improvements, and to reflect updated conditions and projects in the City.

Stakeholder Engagement

The Elk Grove Trails Committee took a lead role in advising City staff during preparation of the BPTMP. The Trails Committee consists of five members, each a resident of Elk Grove and appointed by the elected mayor and confirmed by City Council.

In addition:

- The Disability Advisory Committee provided comments on existing conditions, opportunities, and challenges related to pedestrians, bicycles, and trails.
- The Elk Grove Unified School District provided comments on existing education, encouragement, and enforcement programs related to walking and bicycling and existing sidewalk gaps in proximity to schools.
- The Cosumnes Community Services District (CSD) provided direction regarding the trails maintenance services agreement between the City and CSD and plant palette revision suggestions. Members of the public participated in the monthly Trails Committee meetings and provided comments on the proposed Bicycle, Pedestrian, and Trails Facilities Map.



In 2003 and 2012, surveys were posted to the City's Planning website (**www.egplanning.org**) to collect comments on bikeway and trail usage in the City and the types of facilities or improvements that would help residents ride and/or walk more often. These comments aided with preparation of the BPTMP goals and helped to identify potential bikeway and pedestrian projects.

Facility Inventory

In June 2003, Fehr & Peers Transportation Consultants completed an assessment of bicycle facilities for the City, identifying existing and potential bicycle facilities. Fehr & Peers conducted field surveys, utilized the City Trails Committee map, and referenced other area transportation, bicycling, and pedestrian organizations to develop the bicycle facilities database. Since 2003, City staff has maintained and updated the bicycle facility database to reflect current conditions.

1.5 FACILITY TYPES/LANGUAGE OF PLAN

A bicycle, pedestrian, and trails master plan is intended to be a user-friendly document that provides direction for staff while also capturing and accurately reflecting a community's long-term vision for its bicycle, pedestrian, and trails transportation network. To ensure better understanding of the more technical aspects of this Master Plan, bicycle facility types and cyclist types are described below.

Bicycle Facility Types

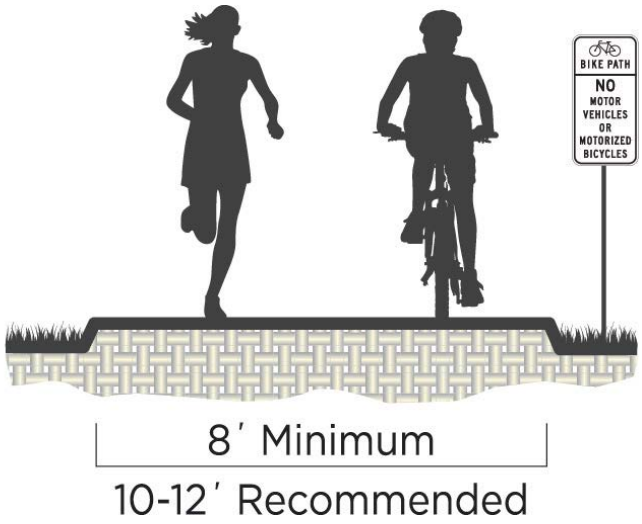
Bike "sharrow" symbol

Bikeway planning and design in California typically relies on the guidelines and design standards established and documented in Chapter 1000 of the California Department of Transportation (Caltrans) *Highway Design Manual*. Caltrans standards provide for three distinct types of bikeway facilities, as generally described below.

Class I Bikeways

A Class I Bikeway, often referred to as a bike path, is a completely separated right-of-way for the exclusive use of bicycles, pedestrians, and, in some cases, equestrians and other non-motorized travel such as roller skating, skateboarding, and so forth. These facilities provide an alternative to sidewalks or on-street bicycle lanes. Crossflow by motor vehicles is minimized. Often referred to as multi-use trails, Class I facilities are usually located near rivers, creeks, canals, utility rights-of-way, parks, and other open spaces. Class I Bikeways provide important recreational opportunities, but can also be used to close gaps to bicycle travel caused by construction of freeways or natural barriers (rivers, streams, etc.). See **Figure 1.4.**

Figure 1.4. Class I Bicycle Type

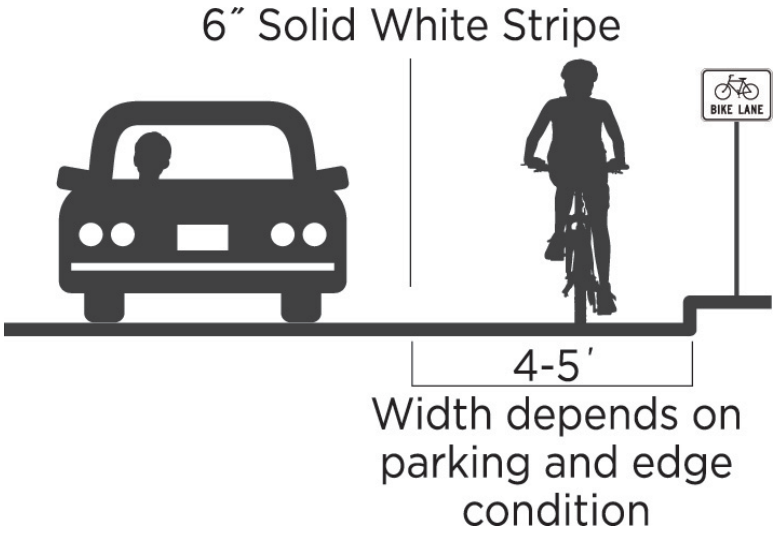


Class II Bikeways

Class II Bikeways, otherwise known as bike lanes, provide a striped lane for one-way bike travel directly on the roadway. Vehicle crossflow generally occurs at intersections and driveways. Bike lanes are usually at least 4 to 5 feet wide and delineated from the motor vehicle lane by a solid white stripe. They serve to separate motor vehicle and bicycle traffic and provide for more predictable movements by each. Bike lanes are often established along streets in corridors where there is significant bicycle demand. See **Figure 1.5.**

Example Class II bike lane

Figure 1.5. Class II Bicycle Type



Example Class III bike route

Class III Bikeways

Class III Bikeways are on-street routes that provide for shared use of the roadway by bicycles and motor vehicles. Class III facilities are usually designated by Bike Route signs and permanent markings, such as "sharrow symbols," that illustrate to drivers that bicyclists are legitimate users of the lane space. Class III routes are often designated on roadways with low levels of motor vehicle traffic or are used as alternative routes through high-demand corridors. See **Figure 1.6.**

Figure 1.6. Class III Bicycle Type

Cyclist 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 utilitarian and recreational user groups. Specific categories of bicycle user types are outlined in the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*:

Experienced and Confident

This group includes bicyclists who are comfortable riding on most types of bicycle facilities. This group also includes utilitarian and recreational riders of many ages who are confident enough to ride on busy roads and navigate in traffic when necessary to reach their destination. However, some may prefer to travel on low-traffic residential streets or shared-use paths. Such bicyclists may deviate from the most direct route to travel in their preferred riding conditions. Experienced bicyclists may include commuters, long-distance road bicyclists, racers, and those who regularly participate in rides organized by bicycle clubs.

Casual and Less Confident

This group includes a majority of the population and a wide range of people: those who ride frequently for multiple purposes; those who enjoy bicycling occasionally but may only ride on paths or low-traffic streets in favorable conditions; those who ride for recreation, perhaps with children; and those for whom the bicycle is a necessary mode of transportation. In order for this group to regularly choose bicycling as a mode of transportation, a physical network of visible, convenient, and well-designed bicycle facilities is needed. People in this category may move over time to the "experienced and confident" category.

Support Facility Types

Bicycle support facilities refer to the many small items of bicycle-related infrastructure for use by bicyclists while en route or once they have reached their destination. Bicycle support facilities include Class I trail amenities (signage, water fountains, restrooms), bike parking, shower and changing areas, and secure storage for bicycle gear. Bicycle parking facilities are described in more detail below.

Short-Term Bike Parking

Short-term bicycle parking facilities typically consist of bike racks where cyclists can park their bike for several hours or less. They are targeted to visitors, customers, and other short-term users.

Long-Term Bike Parking

Long-term bicycle parking facilities include bike lockers, bike cages, and bike rooms and are targeted to residents, employees, and other long-term users. Long-term bicycle parking facilities are typically provided at major destinations such as transportation hubs/stations, employment centers, and schools. These facilities restrict access to users, providing a higher level of security and allowing cyclists to leave their bikes for longer periods of time.

Shower and Changing Facilities

People are more likely to commute to work by bicycle if they have convenient access to showers and changing facilities. Showers and locker rooms are typically implemented in new commercial buildings and are managed by the building owner. The City does not currently have any publicly owned and operated shower and changing facilities.

Relationship to Other Plans 2

In many cases, the practices that are covered by these guidelines are also the subject of other regulations, codes, and planning documents at the City, State, and federal levels. This section outlines the current requirements and guiding documents that impact bicycle, pedestrian, and trails planning in the City.

2.1 CITYWIDE PLANS AND POLICIES

The Elk Grove General Plan contains several policies which support and direct the preparation of a BPTMP and construction of improved pedestrian and bicycle facilities with the goal of improving local air quality. The policies also direct non-motorized transportation planning to focus on positive incentives, such as provision of more convenient, safer facilities. The City Code, which includes the Zoning Code, the traffic code, and the public improvements code, contains language regulating capital facilities such as bike parking and showers, and trip reduction.

Elk Grove Class I Bikeway, Jeff Werner

The BPTMP bears relation to numerous other City plans, policies, and codes, including:

- **City of Elk Grove General Plan.** The City of Elk Grove General Plan contains basic trail policies and an initial location map of where trails should be built within the City. The BPTMP is consistent with, builds upon, and refines these General Plan policies and initial map.
- **City of Elk Grove Transportation Capital Improvement Program.** The BPTMP lists projects that can be included within this program, which is regularly updated by the City Council.
- **The City of Elk Grove Municipal Code.** The City of Elk Grove Municipal Code, which includes zoning regulations, contains code applicable to requirements viewed as central to trail implementation and increasing trail usage. For example, Title 23, which deals with zoning, establishes the development project approval process and requires that development projects include the installation of bicycle parking spaces.
- **City Specific Plans and Approved Development Guidelines.** Numerous specific plans and approved development guidelines cover large areas within the City, many

of which were in existence prior to the City's incorporation. In instances where they provide direction for the development of off-street, multi-use trails, those plans and guidelines take precedence over the standards contained in the BPTMP. However, given its comprehensiveness, the BPTMP provides additional policies, refinements, and implementation actions that should be implemented within those areas covered by specific plans and approved development guidelines.

- **City Rural Road Policy and Standards.** In 2007, the City Council adopted the Rural Road Improvement Policy for phasing road improvements incrementally to maintain the character of the rural residential area of the City. This policy works in conjunction with the Rural Road Improvement Standards, which establish unique road improvement design standards that are rural (rather than urban) in character. Bicycle, pedestrian, and trail improvements within the public right-of-way in the rural area will be consistent with the current adopted Rural Road Improvement Policy and Standards.
- **Cosumnes Community Services District Master Plan.** The BPTMP calls for a collaborative relationship between the City and the CSD for the construction and maintenance of trails, and calls for the construction of trails additional to those that are shown on the CSD's Master Plan Map.

Goals from the General Plan and Climate Action Plan that specifically reference or call for pedestrian and bicycle network improvements are listed in **Table 2.1**. The task of the BPTMP is to ensure compatibility of all of these efforts while planning for areas of the City not already targeted by other studies. The goals, policies, and actions listed in **Table 2.1** have been reviewed and studied for consistency, and where appropriate, folded into the BPTMP.

Table 2.1. Relevant Policy and Plan Direction for the BPTMP

Elk Grove Policy and Plan Direction
City of Elk Grove General Plan (2003)
Circulation Element (CI)-1 Circulation planning for all modes of travel (vehicle, transit, bicycle, pedestrian, etc.) shall be coordinated with efforts to reduce air pollution.
CI-2 The City shall coordinate and participate with the City of Sacramento, Sacramento County and Caltrans on roadway improvements that are shared by the jurisdictions in order to improve operations. This may include joint transportation planning efforts, roadway construction and funding.
CI-3 The City's efforts to encourage alternative modes of transportation will therefore focus on incentives to reduce vehicle use, rather than disincentives (which are generally intended to make driving and parking less convenient, more costly, or both). Incentives may include: • Preferential carpool and vanpool parking, • Bus turnouts, and • Pedestrian-friendly project designs
CI-4 Specific Plans, Special Planning Areas, and development projects shall be designed to promote pedestrian movement through direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area.
CI-5 The City shall encourage the use of transportation alternatives that reduce the use of personal motor vehicles: CI-5-Action 1 Funding for development, operations, and maintenance of facilities for mass transit, bicycle, pedestrian modes of transportation shall be given appropriate priority in the City's budgeting process. CI-5-Action 2 Implement policies and actions in the Conservation/Air Quality Element which seek to encourage non-vehicle transportation alternatives in Elk Grove. CI-5-Action 3 The City will support positive incentives such as carpool and vanpool parking, bus turnouts, and pedestrian-friendly project designs to promote the use of transportation alternatives. CI-5-Action 4 The City shall participate in the preparation and implementation of a Congestion Management Plan (CMP) consistent with legal requirements which gives priority to air quality goals, alternatives to automobile travel, and the development of demand reduction measures over additional road capacity. CI-5-Action 5 The City shall develop and implement Pedestrian and Bikeway Master Plans to provide safe and convenient pedestrian and on- and off-street bicycle facilities throughout the City.
CI-6 The City shall require that transit service is provided in all areas of Elk Grove, including rural areas, so that transit dependent residents of those areas are not cut off from community services, events, and activities. CI-6-Action 1 The City shall require that RT or any other local or regional transit agency serving Elk Grove include bus service to the rural areas of Elk Grove.

Elk Grove Policy and Plan Direction
CI-7 The City shall encourage an approach to public transit service in Elk Grove which will provide the opportunity for workers living in other areas of Sacramento County to use all forms of public transit—including bus rapid transit and light rail—to travel to jobs in Elk Grove, as well as for Elk Grove workers to use public transit to commute to jobs outside the City.
CI-16 Where a development project is required to perform new roadway construction or road widening, the entire roadway shall be completed to its planned width from curb to- curb prior to the operation of the project for which the improvements were constructed, unless otherwise approved by the City Engineer. Such roadway construction shall also provide facilities adequate to ensure pedestrian safety as determined by the City Engineer.
Conservation and Air Quality Element (CAQ)-26 It is the policy of the City of Elk Grove to minimize air pollutant emissions from all City facilities and operations to the extent feasible and consistent with the City's need to provide a high level of public service. CAQ-26-Action 1: The City shall encourage all its employees to use transportation alternatives such as public transit, bicycling, walking, and carpooling for commute and other work-related trips. The City shall provide information on these and other applicable programs to all employees.
Parks, Trails, and Open Space Element (PTO)-1 The City of Elk Grove supports the development, maintenance, and enhancement of parks and trails serving a variety of needs at the neighborhood, area, and citywide level. The City may seek to accomplish the provision of parks and trails in cooperation with the Cosumnes Community Services District. PTO-1-Action 1 As part of the review of development projects, ensure that public parks and trails are provided which meet the City's criteria and which implement the City's Parks and Trails Master Plan.

Elk Grove Policy and Plan Direction

PTO-2 The City specifically supports the pro-vision of parkland at a rate which exceeds the levels historically (prior to adoption of this General Plan) provided in Elk Grove. Parks shall be provided which meet community needs and desires.

PTO-2-Action 1 The City shall conduct a "nexus study" to determine the demand for parkland in the City and the reasonable relationship between the demand and the type of development project to support the imposition of parkland dedication and/or fees.

PTO-2-Action 2 To the extent consistent with applicable state law, the City shall develop criteria defining the types of parks and trails to be developed, including criteria defining desired:

- Park types and sizes
- Park facilities by type
- Locational criteria
- Spacing
- Trails and related facilities by type and function

PTO-2-Action 3 The City shall adopt a comprehensive Parks and Trails Master Plan which provides information on parks criteria, planned parks, and off-street recreational, walking, equestrian, and multi-use trails. Prior to the adoption of the parks standards and the Parks and Trails Master Plan, the City shall require the provision of parks as part of development projects to implement the City's parkland standards. The size, location, and facilities provided in these parks may be determined on a case-by-case basis.

PTO-3 Funding for maintenance of parks and/or trails shall be assured to the City's satisfaction prior to the approval of any Final Subdivision Map which contains or contributes to the need for a public parks and facilities.

PTO-3-Action 1 The City shall pursue the implementation of funding mechanisms to provide for the long-term maintenance of parks and/or trails in those instances where funding is not available from other sources. Such mechanisms may include local or regional assessment districts, homeowners associations, or other methods as determined appropriate by the City.

PTO-7 The trails system in Elk Grove should provide for connectivity, so that all trails are linked to the extent possible for greater use as recreational and travel routes. The following features should be included in the trails system in Elk Grove:

- Trails should link residential areas with parks, commercial and office areas, and other destinations.
- Trails along major roadways should avoid meanders or other design features which make bicycle use less convenient or safe.
- Trails should be located off-street to the extent possible.
- Easements such as access roads should be placed in joint use as trails.

Elk Grove Policy and Plan Direction
PTO-8 The City's desired trails system is shown in Figure PTO-2. Flexibility shall be considered when making decisions on specific trail locations within projects, so long as the trails shown in Figure PTO-2 are implemented and other policies (such as connectivity) are incorporated in the trails system. PTO-8-Action 1 As part of the review of development projects, ensure that trails are provided which meet the City's criteria and which implement the City's desired trails plan.
PTO-9 Funding for maintenance of City trails shall be assured prior to the approval of any project which contains a City-owned trail.
PTO-10 Trailheads should be provided at appropriate locations to provide safe starting points on the trails system for equestrians, cyclists, and pedestrians. PTO-10-Action 1 Develop standards for and locations of potential trailhead locations, including sufficient space for the off-street parking of equestrian trailers and vehicles. PTO-10-Action 2 To the extent possible, coordinate with the Elk Grove CSD in the review of projects containing trails.
PTO-11 Trails which parallel streams should be primarily located beyond the riparian corridor and wetlands to minimize wildlife impacts and shall be restricted to non-motorized traffic.
PTO-12 Trails should be designed with the safety of users and adjacent property owners in mind. To the extent possible, the bicycle trails system should provide safe, off-street options suitable for use by children and less-experienced riders. PTO-12-Action 1 Involve the Elk Grove Police Department in the review of proposed trail locations and designs.
PTO-13 Recreational trails should not be placed adjacent to or on farmland if feasible alternative routes exist elsewhere in the vicinity. However, if no other feasible routes exist, trail facilities should be designed in cooperation with adjacent property owners to minimize adverse impacts on farming practices.
PTO-14 The City supports the use of volunteers and community groups to provide maintenance and safety patrols on trails.
PTO-15 The City views open space lands of all types as important resource which should be preserved in the region, and supports the establishment of multi-purpose open space areas to address a variety of needs, including, but not limited to: • Maintenance of agricultural uses; • Wildlife habitat • Recreational open space • Aesthetic benefits • Flood control To the extent possible, lands protected in accordance with this policy should be in proximity to Elk Grove, to facilitate use of these areas by Elk Grove residents, assist in mitigation of habitat loss within the City, and provide an open space resource close to the urbanized areas of Elk Grove.

Elk Grove Policy and Plan Direction
PTO-15-Action 1 Consider the establishment of a citywide fee and/or assessment system which would provide funding for the purchase of open space land or easements and the maintenance of these areas. PTO-15-Action 2 Work with the County of Sacramento and other resource agencies to develop a regional open space plan which provides for multiple uses of open space (e.g., agriculture and wildlife foraging) PTO-15-Action 3 Consider using funds collected under existing (2003) fee programs (e.g., Swainson's Hawk mitigation and East Franklin Specific Plan agricultural mitigation) to fund this expanded open space program.
PTO-16 Stream corridors, floodways, electrical transmission corridors, and similar features shall be considered for inclusion in the citywide trails and open space system. PTO-16-Action 1 Involve the Elk Grove CSD in the identification of appropriate open space and trails corridors which could be identified in this General Plan and the Elk Grove CSD's Master Plan.
PTO-17 The City encourages the creation of a regional trail/open space system which links the Cosumnes River with the Sacramento River and provides for trail connections between Elk Grove and these open space areas. The City's vision for regional open space and trails is shown in Figure PTO-1 and in the "Planning Area Land Use Concept" in the Land Use Element of this General Plan. PTO-17-Action 1 Within the Cosumnes River floodplain, the City will encourage the dedication or acquisition of easement or fee title for trails as part of an overall trail system linking the Cosumnes and Sacramento rivers. Note: This policy affects lands within the planning area but outside of the 2002 City limits only.
Safety Element (SA)-27 The City shall initiate as well as cooperate in improvements at existing railroad-at-grade crossings to improve public safety. This may include construction of grade-separated crossings and other appropriate safety features.
SA-28 The City shall take all appropriate measures to ensure that railroad crossings in Elk Grove are made as safe as possible. SA-28-Action 1 The City will coordinate with the railroads operating in Elk Grove to ensure that all appropriate safety measures are implemented in their operations in the City. SA-28-Action 2 The City will seek to improve the safety at rail crossings by continuing to investigate improvements in crossing gates and warning devices. SA-28-Action 3 The City will make available information on railroad crossing safety at City Hall and on the City's web site to encourage safe practices by Elk Grove residents and businesses.

Elk Grove Policy and Plan Direction
Sustainability Element (S)-10 Support higher-density, compact, residential development along transit by placing high-density residential or mixed-use sites near transit opportunities. (Please see CAP reduction measures) S-10-Action 1 Review the existing TOD designation in the Land Use Plan to determine if additional opportunities exist. Review should give consideration to the recommendations presented in the SACOG Blueprint Growth Principles. (Please see CAP.) S-10-Action 2 Review the existing TOD designation in the Land Use Plan and revise the definition to emphasize mixed-use, compact, higher-density development around transit stations. S-10-Action 3 Review and update the City's design guidelines to ensure appropriate design of TODs, and establish standards to prioritize pedestrians, cyclists, and public transit over private vehicles.
S-11 Support strategies that reduce reliance on single-occupancy private vehicles and promote the viability of alternative modes of transport. (Please see CAP reduction measures.) S-11-Action 4 Ensure new multi-family and commercial developments provide bicycle parking and other bicycle support facilities appropriate for the users of the development. S-11-Action 6 Continue to implement the Safe Routes to School policy. Continue working with the Sacramento Area Council of Governments (SACOG) on implementation. S-11-Action 7 Establish an employee incentive program to encourage the use of transportation alternatives, such as a parking space cash-out program.
S-12 Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emissions that contribute to climate change. S-12-Action 1 Ensure that new development is consistent with the City's Climate Action Plan.
S-24 Emphasize placemaking design principles in new development projects. S-24-Action 1 Identify locations for major streetscape improvements such as landscaped medians, enhanced crosswalks, street trees, directional signage, benches, and public art. S-24-Action 2 Identify key entry points into the City and provide major entry features or monuments at these locations to create a sense of arrival to Elk Grove. S-24-Action 3 Review the Land Use Plan to develop community focal points by allowing greater densities and a mix of uses at key locations.S-24-Action 4 New development should prioritize the pedestrian by implementing the following measures: - Parking areas and curb cuts should be minimized along commercial street frontages; - Encourage a vertical and horizontal mix of land uses; - Provide urban plazas and gathering spaces in commercial and multi-family development; - Provide pedestrian amenities such as lighting, landscaping, and benches.

Elk Grove Policy and Plan Direction
S-29 Support programs that promote healthy living. S-29-Action 1 Demonstrate leadership in efforts to promote community health by implementing a Healthy Living at Work Program for City employees. A Healthy Living at Work Program may include, but should not be limited to, (a) provision of healthy food at meetings, on-site cafeterias, vending machines and food vendors; (b) flexible work hours so that employees have more opportunities to participate in fitness programs as part of their working day; (c) Employee Assistance Program; (d) health education programs and online Web tools that help employees work toward their health goals; (e) a healthy commuter program that encourages or offers incentives for employees to walk and/or bike to work; and (f) planned events and group activities to encourage employees to become active, such as team sports or lunchtime walks. S-29-Action 2 Work with businesses to implement and participate in healthy living programs. S-29-Action 3 Continue to support the Neighborhood Livability Program, which is dedicated to improving safety in residential areas through traffic calming. S-29-Action 4 Continue to support the Cosumnes Community Services recreational activity programs for people of all ages and abilities. S-29-Action 5 Support SACOG in the development and implementation of a Safe Routes to School program. (Please see CAP reduction measures)
City of Elk Grove Climate Action Plan (2013)
Transportation Alternatives and Congestion Management (TACM)-3. Intracity Transportation Demand Management - The City shall continue to implement strategies and policies that reduce the demand for personal motor vehicle travel for intracity (local) trips.
TACM-5. Pedestrian and Bicycle Travel - Provide for safe and convenient pedestrian and bicycle travel through implementation of the Bicycle and Pedestrian Master Plan and increased bicycle parking standards.
TACM-11. Safe Routes to School - Implement SACOG's Safe Routes to School policy.
Municipal Programs (MP)-1. Employee Commute - Establish an employee incentive program to encourage the use of transportation alternatives.

2.2 REGIONAL PLANS AND POLICIES

In addition to Citywide bicycle, pedestrian, and trail development policies, the development of bicycle and pedestrian facilities in the City must fit in with regional planning efforts and bike/pedestrian networks. The following regional planning documents have been reviewed, consulted, studied for consistency, and where appropriate, folded into this plan.

- The Regional Bicycle, Pedestrian, and Trails Master Plan as adopted by the Sacramento Area Council of Governments in June 2013.
- The Sacramento County Bicycle Master Plan as adopted by Sacramento County in April 2011.

Table 2.2 lists the specific goals and policies pertinent to bicycle and pedestrian planning at the regional level.

TABLE 2.2. REGIONAL PLANNING DIRECTION FOR BPTMP

Regional Reference Documents
Sacramento County Bicycle Master Plan (2011)
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 wellbeing. Create and target programs to reach students at all educational levels, employers and employees, and resident groups.
Policy 1-2: Integrate land use and transportation planning to provide for more and safer bicycle trips.
Policy 1-3: Increase and improve bicycle access to employment, commercial, recreational, educational, social services, housing, and other transportation modes through planning and design.
Policy 1-4: Expand established education and encouragement programs, and develop new education programs to encourage and support bicycling.

Regional Reference Documents
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. 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.
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. Policy 3-2: Collaborate with regional agencies to coordinate planning and development of County bikeways to support a regional bicycle network.
Goal 4: Ensure funding proportionate to mode share for County bicycle facilities, transportation programs, and staff support.
SACOG Regional Bicycle, Pedestrian, and Trails Master Plan (2013)
Goal 1: Increase and improve bicycle and pedestrian access and mobility for residents and visitors of all ages and abilities. 1.A: Develop a continuous bicycle and pedestrian network over the next 20 years (e.g., remove barriers, add crossings, fill gaps, connect spurs to existing networks). 1.B: Improve access from residential areas to activity centers, particularly schools, transit, and employment centers. 1.C: Improve access within a half mile around transit and schools. 1.D: Create regional wayfinding system. 1.E: Make bicycle and pedestrian travel available to a wider audience through better integration with other travel modes (i.e., transit). Efforts include working with public and private partners to develop and implement a bikeshare program in the SACOG region.
Goal 2: Improve and maintain the quality and operation of bikeway and walkway networks. 2.A: Remove physical barriers to walking and biking. 2.B: Create and implement the improvements needed to promote an attractive and desirable bicycle and pedestrian network. 2.C: Apply technological improvements (e.g., flashing lights, crosswalk buttons, and bike detection). 2.D: Maintain bikeway and walkway facilities in good condition.

Regional Reference Documents
Goal 3: Improve bicycle and pedestrian safety. 3.A: Create a safe environment for bicycle and pedestrian travel at intersections and street crossings. 3.B: Promote complete streets and application of context-sensitive complete streets treatments, including constructing and retrofitting new and existing facilities and networks to increase bicyclist and pedestrian safety, and separating motorist, bicycle, and pedestrian facilities from each other to reduce conflicts through appropriate designs, when necessary. 3.C: Increase support of bicycling and walking as travel modes through treatments such as street signage, median refuge islands, dynamic lighting, traffic calming devices, and feedbacks signs, especially in congested areas such as school zones, central business districts, activity centers and high volume bicycle/pedestrian/automobile roadways and networks. 3.D: Increase coordination with law enforcement to create safe environments for bicycling and walking using a variety of resources available (e.g., enhanced enforcement of traffic laws, feedback signs), especially around schools and other high bicycle and pedestrian traffic areas.
Goal 4: Increase the number of bicycle and pedestrian trips. 4.A: Work with local jurisdictions to facilitate bicycle-friendly and pedestrian-friendly development activity and support facilities around transit stations. 4.B: Support programs aimed at increasing bicycle and walking trips by providing incentives, recognition, or services that make bicycling and walking more convenient transportation modes. 4.C: Increase the number of bicycle and pedestrian facilities in the region, specifically targeting areas with a high number of current and potential users. 4.D: Improve convenience of bicycle and pedestrian travel through innovative projects and programs (e.g., bikeshare program). 4.E: Encourage physical activity by supporting projects that promote active and recreational activities. 4.F: Encourage strategic location of new bicycle and pedestrian facilities where existing or planned development patterns offer the greatest opportunity for high use (e.g., to and around transit priority areas).
Goal 5: Increase the number of high quality support facilities to complement the bicycle and walkway networks. 5.A: Involve community and business organization in siting locations for support facilities, e.g., bike corrals, lockers, bike parking, showers, bike storage, water fountains. 5.B: Build support facilities at pivotal areas within the bicycle and pedestrian network, e.g., high-volume transit stations, converging non-motorized network trails and paths, activity centers. 5.C: Provide support to local jurisdictions and/or special districts interested in constructing facilities.

Regional Reference Documents
Goal 6: Increase education, encouragement and awareness programs about bicycle and pedestrian travel. 6.A: Promote public education of vehicle, bicycle and walking safety and traffic laws to a variety of stakeholders, including law enforcement, motorists, bicyclists, and pedestrians. 6.B: Promote public awareness of safe driving, cycling, and walking behaviors, including travel on rural roads. 6.C: Promote public and stakeholder awareness of public health and safety benefits of increased bicycling and walking. 6.D: Promote cycling and walking programs through schools, community events and campaigns; at community workshops and other public forums. 6.E: Promote public and stakeholder awareness of widespread benefits affiliated with bicycle and pedestrian infrastructure, including increased public health, property values, recreation benefits, and environmental benefits.
Goal 7: Create a comprehensive regional bicycling and walking network within and between communities with strong current and future demand. 7.A: Improve connectivity and planning of non-motorized networks within and between communities and jurisdictions in the region. 7.B: Plan and construct facilities with the greatest potential to support utilitarian bicycle and walking trips that are less than three miles. 7.C: Plan and construct facilities for distances greater than three miles to support bicycle commuters as well as recreational users. 7.D: Define a comprehensive regional bicycling network that connects jurisdictions; provides connections to transit priority areas, major activity centers and business districts; considers state-designated bike routes; utilizes Rails-to-Trails when feasible; and includes the American River Parkway.
Goal 8: Increase collaboration among stakeholders throughout the region to seek funding and implement bicycle and pedestrian projects, programs, and related efforts. 8.A: Encourage partnerships with community organizations and agencies outside of the transportation field. 8.B: Encourage and support local agencies to apply for funding outside of SACOG sources (e.g., Safe Routes to School, Highway Safety Improvement Program, Bicycle Transportation Account, and other funding opportunities) for projects and programs. 8.C: Collaborate with local law enforcement agencies and local elected officials. 8.D: Support regional agencies in assembling consistent funding measures to maintain, coordinate and allocate efforts for thriving non-motorized facilities.

Regional Reference Documents
Goal 9: Increase collection of bicycle and pedestrian related data. 9.A: Create and maintain an inventory of current bicycle and pedestrian facilities and safety data, and strive to ensure quality of data. 9.B: Encourage inclusion of bike and pedestrian modes as part of regular traffic counts, and conduct bicyclist and pedestrian counts both prior to and following implementation of infrastructure projects. 9.C: Research opportunities and apply for funding to conduct bicycle and pedestrian counts, as well as technical assistance with the bike/pedestrian counts, as feasible. 9.D: Assess the bicycle and pedestrian networks to identify and prioritize specific areas in need of safety improvements to create a safe, connective, and continuous bicycle and pedestrian network. 9.E: Develop tools to demonstrate project performance measures.

2.3 STATE AND FEDERAL INITIATIVES AND LEGISLATION

The development of pedestrian, bicycle, and trail facilities is subject to other California and federal regulations, codes, and planning documents. As such, these documents have been reviewed, consulted, studied for consistency, and where appropriate, folded into this plan. There may be instances where trail designers should reference these specific documents to clarify site-specific facility design requirements. A brief list of these documents is included below.

- The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) Part 9 Traffic Controls for Bicycle Facilities and the 2003 MUTCD California Supplement as put forth by the US Department of Transportation Federal Highway Administration
- American Association of State Highway and Transportation Officials (ASSHTO)'s *Guide for the Development of Bicycle Facilities*
- Federal Highway Administration (FHWA) Design Guidance for Accommodating Bicycle and Pedestrian Travel
- FHWA's Pedestrian Facilities Users Guide – Providing Safety and Mobility
- Americans with Disabilities Act (ADA) Standards for Accessible Design and ADA Accessibility Guidelines (ADAAG) as put forth by the US Department of Justice/US Department of Transportation and the US Access Board, respectively
- Chapter 1000 of the Caltrans *Highway Design Manual* as put forth by the California Department of Transportation

Statewide Initiatives and Legislation

The BPTMP maintains consistency with recent statewide climate change and transportation legislation and programs that address the implementation of future bicycle and pedestrian transportation facilities. **Table 2.3** lists recent legislation enacted in California to call for increased use of alternative modes of transportation to meet emissions reduction goals.

Table 2.3. Recent California Legislation

Legislation	Date	Description
Executive Order S-3-05	2005	Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emissions targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050. The Elk Grove General Plan recognizes the City's role in statewide mitigation efforts and works toward reducing greenhouse gas emissions to levels established by the City Council.
Assembly Bill (AB) 32	2006	AB 32, also known as the California Global Warming Solutions Act of 2006, was authorized in September 2006 by Governor Arnold Schwarzenegger. AB 32 requires that Statewide GHG emissions be reduced to 1990 levels by the year 2020. AB 32 institutes a schedule to meet the emissions cap and to develop tracking, reporting, and enforcement mechanisms to ensure that the State achieves reductions in greenhouse gas emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.
Senate Bill (SB) 97	2007	SB 97, enacted in 2007, amends the California Environmental Quality Act (CEQA) statute to clearly establish that greenhouse gas emissions and their effects are appropriate subjects for CEQA analysis. It directs the Governor's Office of Planning and Research to develop draft CEQA Guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009, and directs the Resources Agency to certify and adopt the CEQA Guidelines. The Elk Grove General Plan is designed to address the environmental impacts associated with the bill's policies and programs and to meet the State's intent in adding this topic to CEQA.

Legislation	Date	Description
Assembly Bill (AB) 1358	2007	Assembly Bill 1358 (Leno and Levine, 2007) is the Complete Streets Act. It calls for the inclusion of all modes (pedestrian, bicycles, transit, and automobile) into the design of roadways.
Senate Bill (SB) 375	2008	In August 2008, the Governor signed SB 375, a platform to implement AB 32 by linking regional transportation plans with State greenhouse gas reduction goals. Under SB 375, State agencies and local metropolitan planning organizations (such as the Sacramento Area Council of Governments) are to develop preferred growth scenarios to cut greenhouse gas emissions. SB 375 will tie State transportation funds to projects that conform to those scenarios. SB 375 also requires cities to revise their housing elements every eight years in conjunction with the regional transportation plan. The Elk Grove General Plan is designed to address these requirements and allow the City to meet its emissions reduction goals in coordination with planning for housing and overall community growth.
Caltrans Deputy Directive 64-RI	2008	Deputy Directive 64-R1 (DD-64-R1) (Caltrans 2008) was issued to ensure that travelers of all ages and modes may move "safely and efficiently along and across a network of complete streets." The directive establishes responsibilities for Caltrans staff to safely accommodate bicyclists, pedestrians, and transit users.
Assembly Bill (AB) 1581	2012	Assembly Bill 1581 (Wieckowski and Wolk, 2012) provides direction that projects constructing new actuated traffic signals or modifying existing traffic signals include technology that has the ability to detect bicycles and motorcycles. It also calls for the timing of actuated traffic signals to account for bicycles.

In addition, this Master Plan complies with the requirements set forth by California Streets and Highways Code 891.2 for bicycle transportation planning. Compliance with this code section will ensure that the City is eligible to receive Caltrans Bicycle Transportation Account funding. The manner in which this Master Plan complies with Section 891.2 is outlined in **Table 2.4.**

Table 2.4. California Streets and Highways Code Section 891.2 Compliance Checklist

California Streets and Highways Code Section 891.2 Requirements	Location
A. The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.	Section 1.3
B. A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.	Section 1.2, Figure 1.2, Figure 4.3, Figure 5.1
C. A map and description of existing and proposed bikeways.	Section 4.1, Figure 4.1, Figure 4.3, Section 5.1, Figure 5.1, Figure 5.2
D. A map and description of existing and proposed end of trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	Section 1.5, Section 4.1, Figure 4.1, Table 4.2, Figure 4.3, Section 5.1, Figure 5.1
E. A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park-and-ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.	Section 4.1, Table 4.3, Table 4.4, Figure 4.3, Figure 4.4, Figure 5.1
F. A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.	Section 1.5, Section 4.1, Figure 4.3, Figure 5.1
G. A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.	Section 6.1
H. A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.	Section 1.3, Section 1.4, Section 8.3

California Streets and Highways Code Section 891.2 Requirements	Location
I. A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.	Section 2.1, Table 2.1, Section 2.2, Table 2.2, Section 4.1, Figure 4.2, Section 8.5
J. A description of the projects proposed in the plan and a listing of their priorities for implementation.	Section 5.1, Section 5.2, Section 8.3, Table 8.2, Figure 8.1, Table 8.1,Table 8.2, Table 8.3, Table 8.4
K. A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.	Section 8.1, Table 8.1, Section 8.6, Table 8.3, Table 8.4

Federal and State Bicycle and Pedestrian Planning Requirements

A large portion of public funds for bicycle, pedestrian, and trails projects is derived through a core group of federal programs. Federal funds from the Surface Transportation Program, Transportation Alternatives Program, and Congestion Mitigation Air Quality programs are allocated to SACOG and distributed regionally. As such, this Master Plan is compliant with federal laws and regulations regarding bicycle and pedestrian planning.

The most recent federal transportation law is Moving Ahead for Progress in the 21st Century (MAP-21), passed by Congress and President Obama in July 2012. MAP-21 has consolidated many of the dedicated funding streams for active transportation projects (Transportation Enhancements, Safe Routes to School, Recreational Trails) under a single new program: the Transportation Alternatives Program. MAP-21 increased the Highway Safety Improvement Program and has clarified that the safety of all road users should be improved, not just motorists. Additionally, MAP-21 gives great flexibility for Caltrans to shift money between its many programs—representing a potential opportunity to increase the amount of federal funding that supports pedestrian and bicycle projects and programs across the state.

California's implementation of MAP-21 will be accomplished through the California Active Transportation Program (ATP), created by SB 99 (Chapter 359, Statutes 2013) and AB 101 (Chapter 354, Statutes 2013) to encourage increased use of active modes of transportation, such as biking and walking. The new ATP program will award approximately $124.2 million Statewide per year for active transportation projects to improve mobility, address public health issues, and reduce greenhouse gas emissions. The ATP guidelines describe the policy, standards, criteria, and procedures for the development, adoption, and management of an ATP.

In order to meet the criteria for state and federal funding for ATP projects, the BPTMP must meet the requirements listed in the 2014 Draft ATP Guidelines (see **Table 2.5**). For the most part, this list is a more comprehensive version of California Streets and Highways Code Section 891.2; therefore, compliance with the ATP guidelines ensures that both sets of requirements are met.

Specific requirements for bicycle and pedestrian projects under the California ATP and compliance with the ATP checklist are outlined in **Table 2.5**.

Table 2.5. California Transportation Commission ATP Guidelines Checklist*

CA Transportation Commission – ATP Draft Guidelines (January 2014): Requirements	Location
a) The estimated number of existing bicycle trips and pedestrian trips in the plan area, both in absolute numbers and as a percentage of all trips, and the estimated increase in the number of bicycle trips and pedestrian trips resulting from implementation of the plan.	Section 1.3, Table 1.1, Table 1.2
b) The number and location of collisions, serious injuries, and fatalities suffered by bicyclists and pedestrians in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	Section 1.3, Figure 1.3, Table 2.2
c) A map and description of existing and proposed land use and settlement patterns which must include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other destinations.	Section 1.2, Figure 1.2, Figure 4.3, Figure 5.1
d) A map and description of existing and proposed bicycle transportation facilities.	Section 4.1, Figure 4.1, Figure 4.3, Section 5.1, Figure 5.1, Figure 5.2
e) A map and description of existing and proposed end-of-trip bicycle parking facilities.	Section 1.5, Section 4.1, Figure 4.1, Table 4.2, Figure 4.3, Section 5.1, Figure 5.1
f) A description of existing and proposed policies related to bicycle parking in public locations, private parking garages, and parking lots and in new commercial and residential developments.	Section 4.1, Section 7.1, Figure 7.1, Figure 7.2
g) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These must include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.	Section 4.1, Table 4.3, Table 4.4, Figure 4.3, Figure 4.4, Figure 5.1
h) A map and description of existing and proposed pedestrian facilities at major transit hubs. These must include, but are not limited to, rail	Section 4.1, Figure 4.3, Figure 5.1

CA Transportation Commission – ATP Draft Guidelines (January 2014): Requirements	Location
and transit terminals, and ferry docks and landings.	
i) A description of proposed signage providing wayfinding along bicycle and pedestrian networks to designated destinations.	Section 5.1, Section 5.2, Section 7.2, Section 7.3
j) A description of the policies and procedures for maintaining existing and proposed bicycle and pedestrian facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	Section 8.2
k) A description of bicycle and pedestrian safety, education, and encouragement programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the law impacting bicycle and pedestrian safety, and the resulting effect on accidents involving bicyclists and pedestrians.	Section 6.1
l) A description of the extent of community involvement in development of the plan, including disadvantaged and underserved communities.	Section 1.3, Section 1.4, Section 8.3
m) A description of how the active transportation plan has been coordinated with neighboring jurisdictions and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	Section 2.1, Table 2.1, Section 2.2, Table 2.2, Section 2.3, Table 2.3, Section 4.1, Figure 4.2, Section 8.5
n) A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	Section 5.1, Section 5.2, Section 8.3, Table 8.2, Figure 8.1, Table 8.1,Table 8.2, Table 8.3, Table 8.4
o) A description of past expenditures for bicycle and pedestrian facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicyclists and pedestrians in the plan area. Include anticipated revenue sources and potential grant funding for bicycle and pedestrian uses.	Section 8.1, Table 8.1, Section 8.6, Table 8.3, Section 8.4, Table 8.4
p) A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	Section 8.5, Section 8.6, Table 8.3, Table 8.4, Appendix B

CA Transportation Commission – ATP Draft Guidelines (January 2014): Requirements	Location
q) A resolution showing adoption of the plan by the city, county or district. If the active transportation plan was prepared by a county transportation commission, regional transportation planning agency, MPO, school district or transit district, the plan should indicate the support via resolution of the city(s) or county(s) in which the proposed facilities would be located.	Appendix E

** The ATP Guidelines included here were adopted in March 2014.*

Goals and Milestones 3

Bicycle and pedestrian travel represent important parts of the overall movement, quality of life, and livability of people in the City. The Goals and Milestones chapter provides the context for the specific standards and provisions discussed in the BPTMP. The City's General Plan and other relevant policy documents and adopted plans set the foundation for the BPTMP goals. The goals listed in this chapter are broad statements of purpose that do not provide details, but show the plan's direction and give overall guidance. Milestones listed in this chapter provide actions to achieve the goal. Implementation guidelines are discussed in Chapter 8 Funding and Implementation.

GOAL: INCREASE CYCLING AND WALKING

- Milestone: Increase the number of people who travel by bicycle to at least 5 percent and the number of people who walk to at least 5 percent by 2030.
- Milestone: Show the locations of the Caltrans park-and-ride lots, major bus stops, and the light rail stop near the City limits on a City Trails and Bikeways map. Reference that bike lockers are available at the park-and-ride lots and light rail stop and that City buses are equipped with bike racks.
- Milestone: Update the map to include the locations of any new light rail stops, should light rail become available in the City.
- Milestone: Ensure that bicycle, pedestrian, and trail amenities accommodate a variety of user groups with varying levels of ability, expertise, and comfort.

GOAL: EDUCATE THE PUBLIC ON BICYCLE AND PEDESTRIAN OPPORTUNITIES AND SAFETY ISSUES

- Milestone: Promote awareness of the opportunities and benefits of the bikeway and trail system through City education and outreach efforts.
- Milestone: Support educational programs to teach experienced cyclists, new riders, and children safe bicycling techniques.
- Milestone: Develop communication programs to encourage bicycling as a part of daily life and promote bicycling as a legitimate form of transportation.
- Milestone: Provide literature and current bicycle route maps for public use.
  - Update the City Bicycle and Pedestrian Network and Facilities Map for public use on a regular basis.
  - Distribute the City Trails and Bikeways map to employers, bike shops, public buildings, and schools free of charge.
  - Acquire or develop literature promoting appropriate bicycle laws, safety tips, bike commuting, and other similar bicycle information, for dissemination to the general public.

GOAL: ENHANCE ENFORCEMENT OF BICYCLE REGULATIONS

- Milestone: Increase cyclist and motorist awareness of the rights and responsibilities of cyclists in order to create a climate of acceptance for cycling, reduce cyclist violations, improve safe bicycling and driving practices, reduce collisions, and increase bicycle riding to work, school, and other destinations.
- Milestone: Continue the enforcement of bicycle rules and regulations by cyclists and motorists in order to reduce violations and crashes. Such violations include wrong way riding, riding at night without lights or reflectors, disregarding traffic signals, and violating the right-of-way of cyclists by motorists.

GOAL: IMPROVE CONNECTIVITY

- Milestone: Complete a network of bikeways and trails that serves users' needs, especially for travel to employment centers, commercial districts, transit stops, institutions, and recreational destinations. Support the creation of bikeways and trails:
  - Between, through, and within neighborhoods, with minimal roadway crossings.
  - To regional and local public transit systems (including the proposed rail extension) at stops, stations, and terminals.
  - To carpool/vanpool park-and-ride lots.
  - To regional and local activity centers such as schools, libraries, community centers, hospitals, medical offices, senior residences, parks, athletic facilities, government services, employment centers, high-density residential areas, and commercial centers.
  - To fill in gaps in existing, planned, or proposed local and interregional bicycle and pedestrian routes.
  - To connect with and complement regional bicycle and pedestrian routes.
  - To collaborate with other jurisdictions and regional agencies on trail projects and funding.
  - To provide safe bicycle and pedestrian access across barriers such as arterial roads, highways, freeways, creeks, and railroads.
- Milestone: Give priority to bikeway components that link existing separated sections of the system or that are likely to serve the highest concentration of existing or potential cyclists and destination areas with the highest demand (schools, shopping areas, recreational trailheads, and employment centers).
- Milestone: Develop a visually clear, simple, and consistent bicycle system with clearly defined areas, boundaries, and standard signs and markings as designated by the State of California *Highway Design Manual* and the *California Manual on Uniform Traffic Control Devices*.

GOAL: ENCOURAGE USE OF NON-MOTORIZED TRANSPORTATION

- Milestone: Provide or promote capital facilities that support alternative modes of transportation, such as shower and changing areas, bike parking and lockers.
- Milestone: Facilitate the linkages between bikeways and other modes of transportation.
- Milestone: Provide connection support facilities, such as transit stops, park-and-ride lots, and trail staging areas to allow users easy transfer between transportation modes.
- Milestone: Provide bikeways and trails that are attractive and maximize access to and views of scenic and natural areas. Provide ample landscaping and amenities, such as public art by local artists, signage, drinking fountains, street furniture, and restrooms to enhance the trail system experience.
- Milestone: Continue to provide bike racks or space for bicycles on buses and other transit vehicles. Encourage the implementation of bike racks that accommodate up to three bicycles or the ability to bring bicycles on the bus (if doorway access is designed to accommodate bicycles and the bus has available room).
- Milestone: Encourage biking and walking through public information, education, and awareness.

GOAL: INCORPORATE BICYCLE AND PEDESTRIAN FACILITIES AND AMENITIES INTO SITE AND ROADWAY DESIGNS

- Milestone: Ensure that bicycle routing is an integral part of street design so that lanes and pathways form an integrated network.
- Milestone: Compile information on preferred bicycle parking facilities to disseminate to developers and the public.
- Milestone: Ensure that bikeways and trails are easily navigable due to the provision of direct routes, smooth transitions between trail types, and effective signage and demarcation.

- Milestone: Use low maintenance landscaping and construction materials that emphasize environmentally friendly, recycled content.
- Milestone: Maintain roadways and bicycle/pedestrian-related facilities so they provide safe and comfortable conditions for users.
  - Continue a routine street sweeping program which includes on-street bike lanes and routes.
  - Ensure adequate staffing and funding to meet trail needs.
- Milestone: Incorporate bicycle and pedestrian safety features in the design of bikeways, trails, and pedestrian facilities.
  - Design facilities in a manner that reduces the potential for trail user group conflicts.
  - Consider adequate and appropriate lighting in the design of new facilities.
  - Consider best practices in the design of new facilities.
- Milestone: Incorporate bicycle and pedestrian safety features in the design of new freeway interchange safety improvements.
- Milestone: Provide signage, alternative routes, etc., during construction activities that affect bikeways to ensure the safety of cyclists.
- Milestone: Establish an online system for reporting, evaluating, tracking, and responding to maintenance and safety concerns on bikeways.

These goals and milestones directly incorporate the themes encountered during the BPTMP process, including those pertaining to best examples of bicycle, pedestrian, and trails improvements and implementation. These goals have influenced the recommended locations of trails, the prioritization criteria for which trail projects to implement first, and implementation strategies. It is important to note that these goals are not ranked.

Existing Conditions 4

4.1 EXISTING BIKEWAY AND TRAILS NETWORK

Existing Bike and Trails Network

The City is home to more than 29 miles of trails for walkers, runners, and bicyclists. The City's existing bikeway and trails network consists mainly of Class I and Class II bike facilities. The majority of the bikeways in the Plan Area are Class II lanes, which are located on existing streets or highways and are striped for one-way bicycle travel. The City's unique and extensive bikeway and trail system meanders throughout open space, greenbelts, creeks, and wildlife habitats, while connecting to award-winning parks, schools, neighborhoods, and retail shopping centers. Many of these trails are exceptionally attractive in that they provide scenic vistas or views of parkland and creeks, or have well-maintained landscaping. These existing bikeways and trails are also distributed across the City, providing a strong foundation for building continuity and connectivity.

It is important to note that trails are only one facility in an interconnected network of transportation facilities, including sidewalks and other existing on-street bicycle facilities. As outlined previously, bike lanes (Class II bikeways) are on-street bikeways that provide a designated, marked lane for one-way, on-street bike travel. Bike routes (Class III bikeways) provide shared bicyclist use with pedestrian or motor vehicle traffic and are identified only by signage and/or markings. Sidewalks are designed to only accommodate pedestrians. In contrast, trails, or Class I bike facilities, provide an entirely separate right-of-way from on-street facilities and are designed to accommodate pedestrians, bicyclists, equestrians, and other trail user groups.

The strongest constructive critique of the existing trail system is in regard to its navigability. Key areas for improvement in the existing bikeway and trail system include the following:

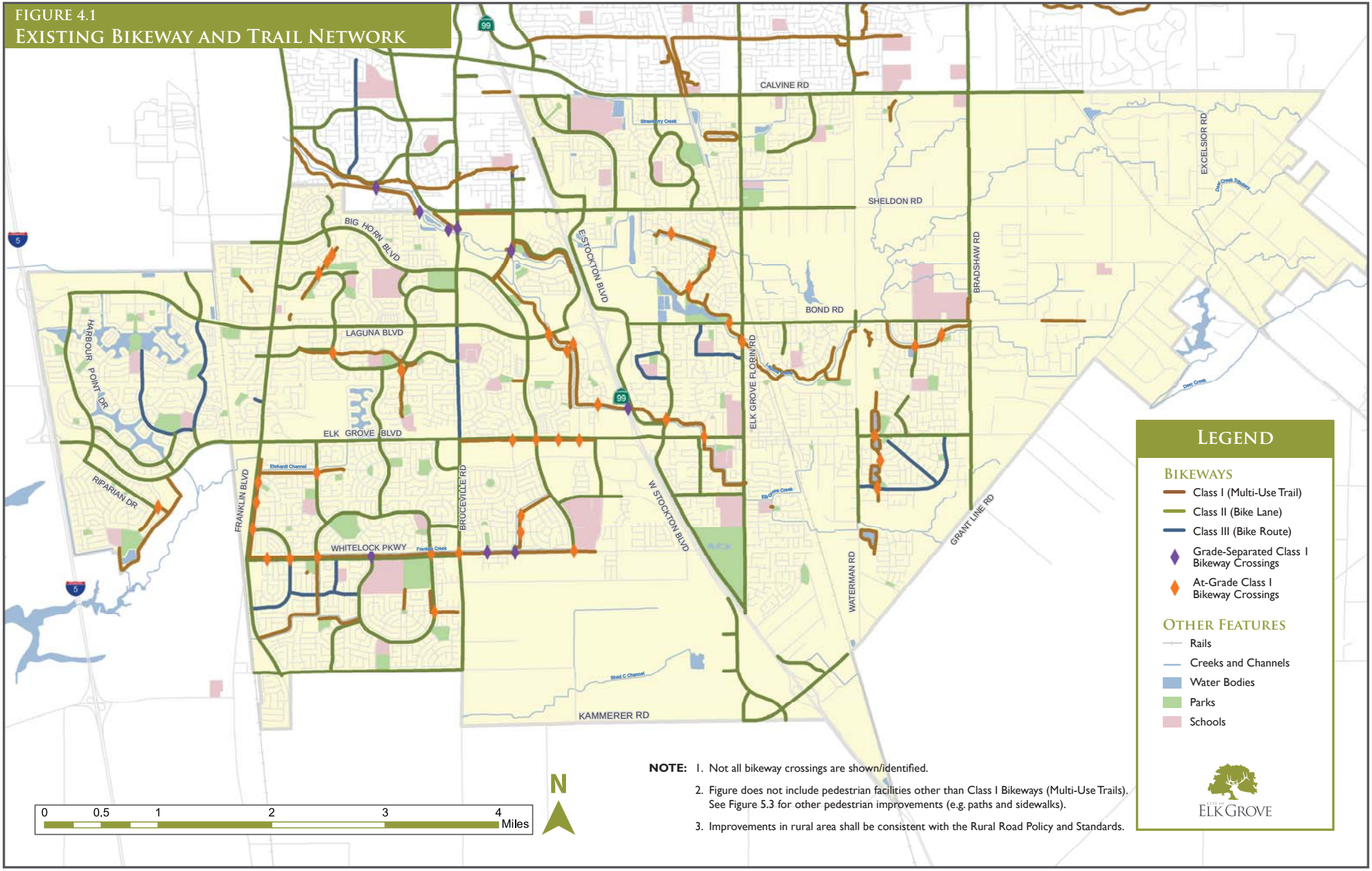
- The existing bikeway and trail system is only partially completed at this time; existing trails are not yet continuously connected, but are instead more internal to various subdivisions and/or park areas.
- There are smaller gaps in the trail system that reduce connectivity.

- Community members would like to see additional bicycle parking at major destinations within the City.
- Additional amenities along Class I trails are needed—benches, restrooms, and drinking fountains would greatly improve conditions for trail users.
- The trail system still needs to address trail obstacles, such as providing several off-street means of crossing Highway 99 to better connect the City from east to west.
- Some existing trails are not marked with signage and are not aligned so that it is clear a trail continues on the other side of a roadway.
- Some existing trails continue on either side of an existing roadway, but a safe crossing is not provided.
- Trail rights-of-way are not clarified, creating more likelihood of trail user conflicts and resulting in an informal social disincentive to using trails.
- The capacity of the trail system differs along its existing trail segments. Many existing trails were constructed prior to the City's incorporation and in accordance with a subdivision's approved development guidelines; as such, existing multi-use trails have differing dimensions and surface materials that make it difficult to differentiate what is a sidewalk and what is a trail.
- Additional outreach programs are needed to inform residents of the existing bikeway and trails amenities in the City, and educate them on bikeway/trail safety and etiquette.

The City's existing bikeway and trails network is shown in **Figure 4.1**.

FIGURE 4.1

Existing Bikeway and Trail Network



Legend

Bikeways

- Class I (Multi-Use Trail)
- Class II (Bike Lane)
- Class III (Bike Route)
- Grade-Separated Class I Bikeway Crossings
- At-Grade Class I Bikeway Crossings

Other Features

- Rails
- Creeks and Channels
- Water Bodies
- Parks
- Schools

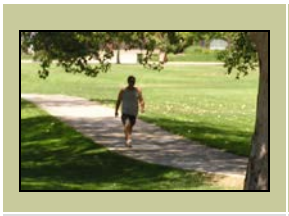
CITY OF ELK GROVE

NOTE:

1. Not all bikeway crossings are shown/identified.
2. Figure does not include pedestrian facilities other than Class I Bikeways (Multi-Use Trails). See Figure 5.3 for other pedestrian improvements (e.g. paths and sidewalks).
3. Improvements in rural area shall be consistent with the Rural Road Policy and Standards.

Table 4.1 lists the existing total mileage of each bikeway classification within the City.

Table 4.1. Existing Bikeway Miles by Bikeway Classification

	Class I Bikeways The City contains 29.3 miles of bike paths (Class I facilities).
	Class II Bikeways The City contains 87.4 miles of bike lanes (Class II facilities).
	Class III Bikeways The City contains 7.9 miles of bike routes (Class III facilities).

Regional Connections

The previous section identified the goals and objectives for the City's bikeway system. These goals include a bikeway system that is connected to the bike networks of surrounding communities and to the larger Sacramento area regional bikeway network. Today, Sacramento County has approximately 205 miles of existing bikeways. The network includes approximately 73 miles of Class I bike paths, 122 miles of Class II bike lanes, and 10 miles of Class III bike routes.

Many cyclists would like to ride on bikeways that offer long, uninterrupted rides. 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. More importantly, connections to regional bicycle networks provide opportunities for City residents to commute to nearby employment centers such as downtown Sacramento and Rancho Cordova. For instance, one desirable regional connection between the City and downtown Sacramento would be

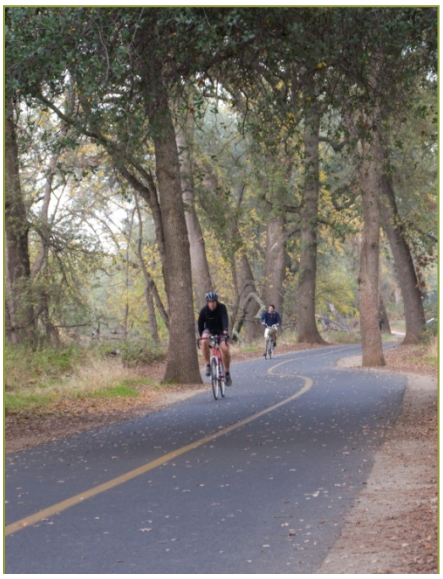


Photo by Robert Couse-Baker [CC-BY-SA-2.0], via Flickr

along the Sacramento River levee. The Master Plan provides a well-defined framework that supports City collaboration and planning with SACOG and surrounding communities regarding the creation of regional trails, such as those proposed for Upper Laguna Creek and the Central California Traction Railroad alignment.

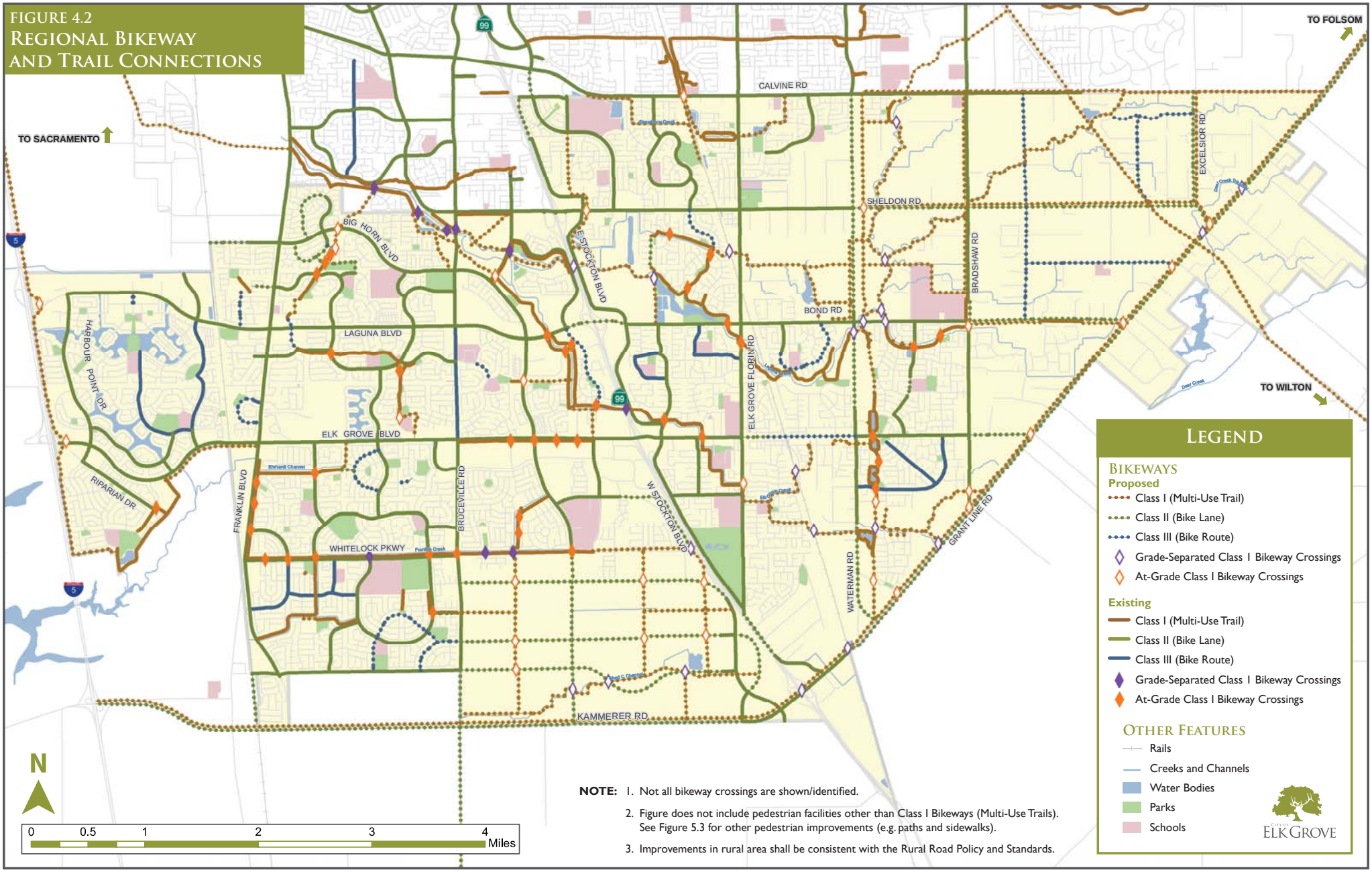
Other potential regional bikeway connections could include routes along the following corridors in the City:

- Franklin Boulevard
- Laguna Creek Trail
- Bruceville Road
- Elk Grove Florin Road
- Grant Line Road

The map in **Figure 4.2** below shows regional bikeway and trail connections in and around the City.

FIGURE 4.2

Regional Bikeway and Trail Connections



Legend

Bikeways

Proposed

- Class I (Multi-Use Trail)
- Class II (Bike Lane)
- Class III (Bike Route)
- Grade-Separated Class I Bikeway Crossings
- At-Grade Class I Bikeway Crossings

Existing

- Class I (Multi-Use Trail)
- Class II (Bike Lane)
- Class III (Bike Route)
- Grade-Separated Class I Bikeway Crossings
- At-Grade Class I Bikeway Crossings

Other Features

- Rails
- Creeks and Channels
- Water Bodies
- Parks
- Schools

NOTE:

1. Not all bikeway crossings are shown/identified.
2. Figure does not include pedestrian facilities other than Class I Bikeways (Multi-Use Trails). See Figure 5.3 for other pedestrian improvements (e.g. paths and sidewalks).
3. Improvements in rural area shall be consistent with the Rural Road Policy and Standards.

CITY OF ELK GROVE

Existing Bike and Trail Facilities

Facilities at destinations are a critical component in promoting alternative modes of transportation, such as walking and bicycling. The City's bicycle and trails network is supported by a network of support facilities and amenities, including:

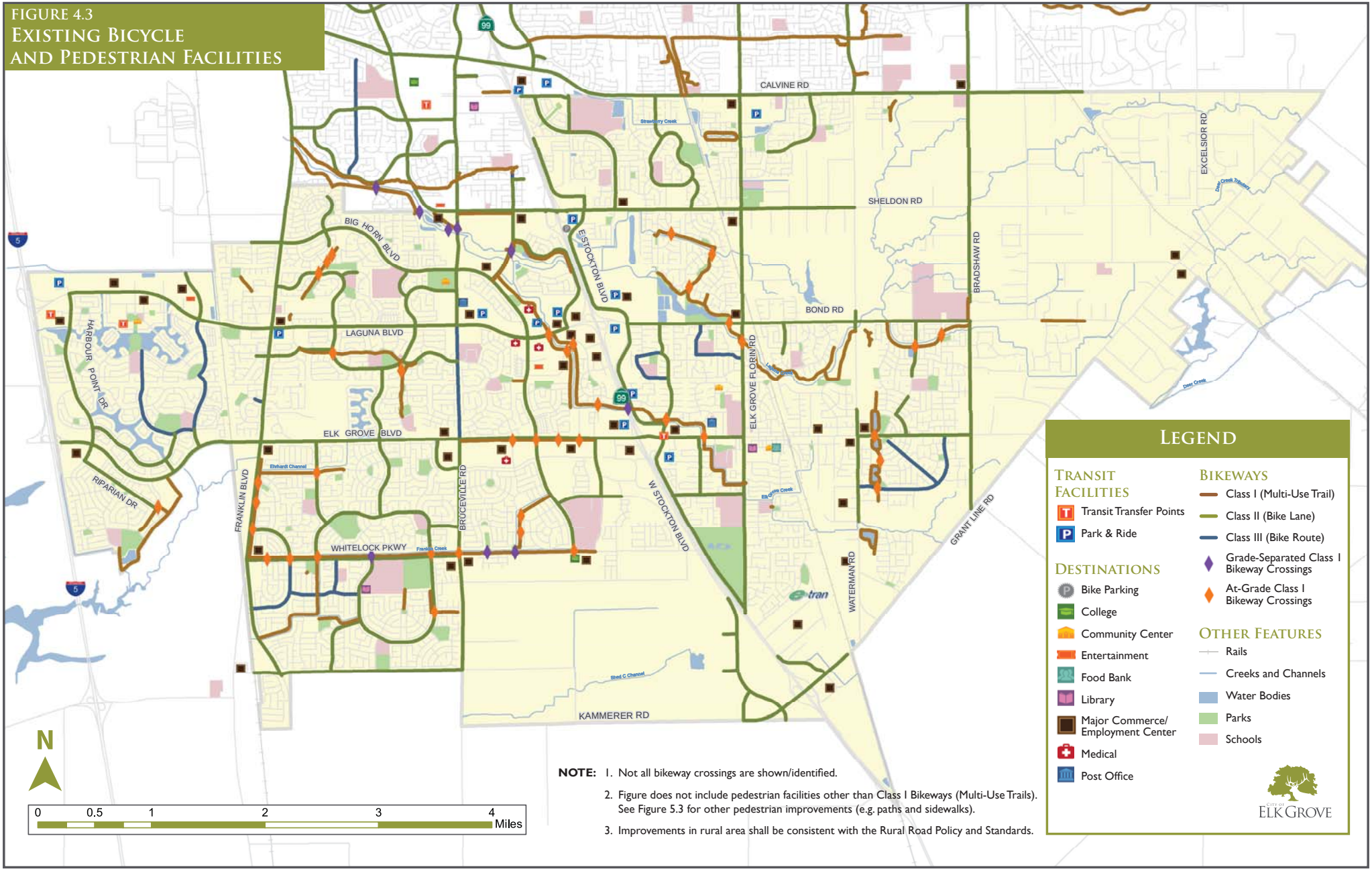
- Bicycle parking facilities
- Showers and changing facilities
- Transit stations
- Park-and-ride lots
- Trailheads
- Trail crossings
- Public restrooms
- Benches
- Drinking fountains
- Signage

These support facilities provide places to rest, store bicycles, prepare for the workday, and/or make connections to other modes of transportation for travel in and around the City. For example, long-term bike parking, showers, and locker rooms at employment destinations make it easier for residents to commute to work by bicycle. Support facilities at shopping centers allow residents to perform errands by bike.

Figure 4.3 shows the location of existing bicycle, pedestrian, and trail support facilities and destinations within the City. Short-term bicycle parking facilities in the City are too numerous to be shown on this map, but are available at most schools, public buildings, commercial developments, and employment centers. Currently, the only long-term bicycle parking facilities in the City are at park-and-ride lots.

FIGURE 4.3

Existing Bicycle and Pedestrian Facilities



Legend

Transit Facilities
- Transit Transfer Points
- Park & Ride

Destinations
- Bike Parking
- College
- Community Center
- Entertainment
- Food Bank
- Library
- Major Commerce/ Employment Center
- Medical
- Post Office

Bikeways
- Class I (Multi-Use Trail)
- Class II (Bike Lane)
- Class III (Bike Route)
- Grade-Separated Class I Bikeway Crossings
- At-Grade Class I Bikeway Crossings

Other Features
- Rails
- Creeks and Channels
- Water Bodies
- Parks
- Schools

NOTE:
1. Not all bikeway crossings are shown/identified.
2. Figure does not include pedestrian facilities other than Class I Bikeways (Multi-Use Trails). See Figure 5.3 for other pedestrian improvements (e.g. paths and sidewalks).
3. Improvements in rural area shall be consistent with the Rural Road Policy and Standards.

CITY OF ELK GROVE

Bike Parking

Section 23.58.100 of the Elk Grove Zoning Code requires bicycle parking facilities to be provided for all public and civic facilities, schools, and commercial, retail, office, industrial, and multi-family uses based on the type of use and number of required parking spaces (see **Table 4.2**). The existing bicycle parking regulations are being re-evaluated with the City's Zoning Code update and revisions will likely be approved later in 2014.

Bicycle parking facilities are required to be installed in a manner which allows adequate spacing for access to the bicycle and the locking device when the facilities are occupied. Bicycle parking must be located on a paved surface, in proximity to a building entrance and in a visibly secure location adjacent to the building.

In addition, Section 23.58.060 of the Zoning Code offers incentives for developers to provide additional secure bicycle parking facilities over and above the minimum required, by allowing them to reduce their vehicle parking by one vehicle space for every three additional bicycle spaces provided (maximum reduction: 2 percent of required parking).

Table 4.2. Minimum Bicycle Parking Requirements

Table 23.58-4 Bicycle Parking Requirements by Land Use	
Land Use Type	**Required Parking Spaces**
Multi-family Residential	
Complexes of any size	1 space/3 units
Community Civic	
Public and civic facilities	10% of required vehicle space
Schools	25% of enrollment capacity
Commercial	
Retail	5% of required vehicle spaces
Office	1 space/25 vehicle spaces
Industrial	
Industrial	1 space/25 vehicle spaces

Existing Bicycle Support Facilities

Section 23.58.060 of the Elk Grove Zoning Code allows developers to reduce a project's vehicle parking requirements for commercial, office, and industrial uses if they provide alternative facilities or programs which serve to reduce parking demand, such as showers, locker rooms, and additional secure bike parking. Developments with 100 or more employees may reduce their parking requirement by providing shower and clothing locker facilities for bicycle-commuting employees (maximum reduction: 2 percent of required parking).

The City does not currently have any publicly owned and operated shower and changing facilities.

Multi-Modal Connections

Public transportation opportunities in the City serve to connect residents with various commercial, recreational, and institutional destinations within the City and with main employment and service destination points outside the City limits, such as downtown and midtown Sacramento and Cosumnes River College. Below is a description of the existing and planned public transport facilities as they relate to bicycle and pedestrian use.

Existing Bus Service

The City operates its own transit service, called E-Tran, that runs both local and commuter bus services to Sacramento. Several Sacramento Regional Transit (RT) District bus lines connect to E-Tran routes and provide connections to destinations outside of the City.

E-Tran bus routes that currently run in the Plan Area include Routes 52, 53, 57, 58, 59, 60, 66, 70, 71, 151, 152, 153, 154, 156, 157, 159, 160 and 162. Most bus routes are not available on evenings or weekends.

E-Tran buses are equipped with bike racks, which hold two bikes. Two additional bikes are allowed inside the bus, depending on passenger loads. Only single-rider, two-wheel bicycles are permitted. No motor, tandem, or three-wheel bikes are allowed. There is no age limit for riders using the bike racks or bringing bikes on board the bus. However, riders must be able to load and unload their bikes without help from the operator.

RT buses are also equipped with bike racks. Each rack can carry two bikes at a time, on a first-come, first-served basis. Bikes are not allowed inside RT buses.

Table 4.3 provides a list of the existing transit routes in and around the City.

Table 4.3. Elk Grove E-Tran and SCT Commuter Routes

Elk Grove E-Tran and South County Transit (SCT) Commuter Routes	Description
Route 52 – Big Horn Express	Services Elk Grove Blvd., Laguna Blvd., Big Horn Blvd., and the Laguna Town Hall, ending in downtown Sacramento at 7th and G Streets.
Route 53 – Whitelock Pkwy./Franklin Express	Services Franklin Community Center, Elk Grove Blvd., Laguna Blvd., and the Laguna Creek Town Center, ending in downtown Sacramento at the 16th Street LRT Station.
Route 57 – Elk Grove Florin Express	Runs between the eastern Elk Grove area and downtown Sacramento. Serves portions of Hampton Oak Drive and East Stockton Blvd. to the south, then runs the length of Elk Grove-Florin Road, with stops at Elk Grove Blvd. and Bond Road, ending in downtown Sacramento at 7th and G Streets.
Route 58 – East Elk Grove Express	Starts around Berens Park. It runs north along Waterman Road, east along Bond Road and Sheldon Road, then northeast along Power Inn Road before ending in downtown Sacramento at 7th and G Streets.
Route 59 – Old Town Elk Grove Express	Runs between Elk Grove Blvd. and downtown Sacramento, with stops along Emerald Oak Drive, at the Sheldon Park & Ride, and the DMV (Broadway and 24th Street).
Route 60 – Elk Grove Park & Ride Express	Serves East Stockton Blvd. and the Sheldon and Calvine park-and-rides, and terminates in downtown Sacramento at the 16th Street LRT Station.
Route 66 – Elk Grove Blvd. Express	Runs along Elk Grove Blvd. to downtown Sacramento, with stops at Bruceville Road, Franklin Road, the Laguna Boulevard Park & Ride, and the 8th and O Street LRT Station.
Route 70 – Bradshaw Express	Starts at the Laguna Creek Town Center; runs along Elk Grove Blvd. with stops at Elk Grove Commons and Waterman Plaza, and ends at the Franchise Tax Board and Butterfield LRT Station.

Elk Grove E-Tran and South County Transit (SCT) Commuter Routes	Description
Route 71 – Laguna Express	Services Laguna Blvd., stopping at Franklin Road, Bruceville Road, and the East Stockton Blvd. Park & Ride before ending at the Franchise Tax Board and Butterfield LRT Station.
SCT/LINK Route – Highway 99 Express	Runs from the Lodi Transit Center, through Galt, stops at the Elk Grove Shell Station on Elk Grove Blvd., just east of Hwy 99, and then terminates at the Cosumnes River College.
Local E-Tran Routes within Elk Grove	**Description**
Weekend Shuttle	Runs a loop from Old Town Elk Grove to Laguna West along Laguna and Elk Grove Blvds., with a short detour to Cosumnes River College.
Route 151 – Stonelake	Services Riparian Drive, Elk Grove Blvd., Franklin Blvd., and Whitelock Pkwy., ending at Franklin High School.
Route 152 – Stonelake/Whitelock Pkwy.	Services Harbour Point Drive, Laguna Blvd., Franklin Blvd., with stops at Laguna Creek Town Center and Elk Grove Blvd., and Whitelock Pkwy.
Route 153 – Laguna West/Whitelock Pkwy.	Runs generally the same route as 152, but loops around Franklin High Road and ends near Elizabeth Pinkerton Middle School and Cosumnes Oak High School.
Route 154 – Calvine	Starts at Cosumnes River College, runs along Power Inn, Sheldon and Calvine Roads, ending at Diamonte Way.
Route 156 – Bruceville/Elk Grove Blvd	Services stops along Elk Grove Blvd. and Bruceville Road, connecting to RT Route 56 at Cosumnes River College.
Route 157 – Laguna	Services Harbour Point Drive, Laguna Blvd., Bruceville Road, and Big Horn Blvd., ending at Cosumnes River College.
Route 159 – Whitelock Pkwy./Franklin	Runs from Toby Johnson Middle School, north along Fire Poppy Drive and Franklin Blvd., west along Big Horn Blvd., and then north along Bruceville Road to Cosumnes River College.
Route 160 – Bond (Neighborhood)	A neighborhood route starting around Berens Park, then running along Bond Road, East Stockton Blvd. and Sheldon Road before ending at Cosumnes River College.
Route 162 – Elk Grove Florin (Neighborhood)	A neighborhood route that makes a loop between Elk Grove High School, Bel Air Village, Cosumnes River College, Laguna Gateway, and Elk Grove City Hall.

Regional Transit Routes	Description
RT Route: 54 – Center Pkwy.	Starts at the Elk Grove Adult Education Center on Gerber Road, runs down Power Inn Road and along Calvine Road, then works its way north along Center Pkwy., ending at the Florin LRT Station.
RT Route: 55 – Scottsdale	Runs north from Cosumnes River College, stopping at the Methodist Hospital and Kaiser Hospital South before ending at Florin Towne Centre.
RT Route: 56 – Pocket – CRC	Runs north from Cosumnes River College, stopping at the Methodist Hospital, Kaiser Hospital South and the Meadowview LRT Station before terminating at the Pocket Transit Center.

Future Light Rail Service and Facilities

Light rail service is not currently available within the City. As light rail ridership continues to increase, RT is extending the rail system. RT has developed its 20-year vision to serve the fastest-growing communities in Sacramento County, which include, but are not limited to, the communities of Elk Grove Laguna, the Natomas-Airport area, and the City of Folsom. RT's Transit Action Plan, completed in 2009, is a 26-year plan designed to set the course and vision for RT to 2035.

Some of the major goals of RT's southern expansion plans (toward the City) are to improve public transit service in southern Sacramento (city and county), enhance regional connectivity through expanded, interconnected rapid transit services, including bus and express bus services, alleviate severe and ever-increasing traffic congestion on Highway 99, and improve regional air quality by reducing auto emissions.

The Blue Line was originally a two-phased, 11.2-mile extension of the existing light rail line south toward the City. The first phase, completed in September 2003, extended the light rail from downtown Sacramento 6.3 miles to Meadowview Road. The second phase is currently under construction and extends the light rail to Cosumnes River College. Subsequent phases would extend light rail through the City. In addition, an intermodal transit station is proposed at Elk Grove Florin and Sheldon Roads. RT is currently evaluating possible alternatives and funding sources for the subsequent phases of the Blue Line Corridor expansion project.

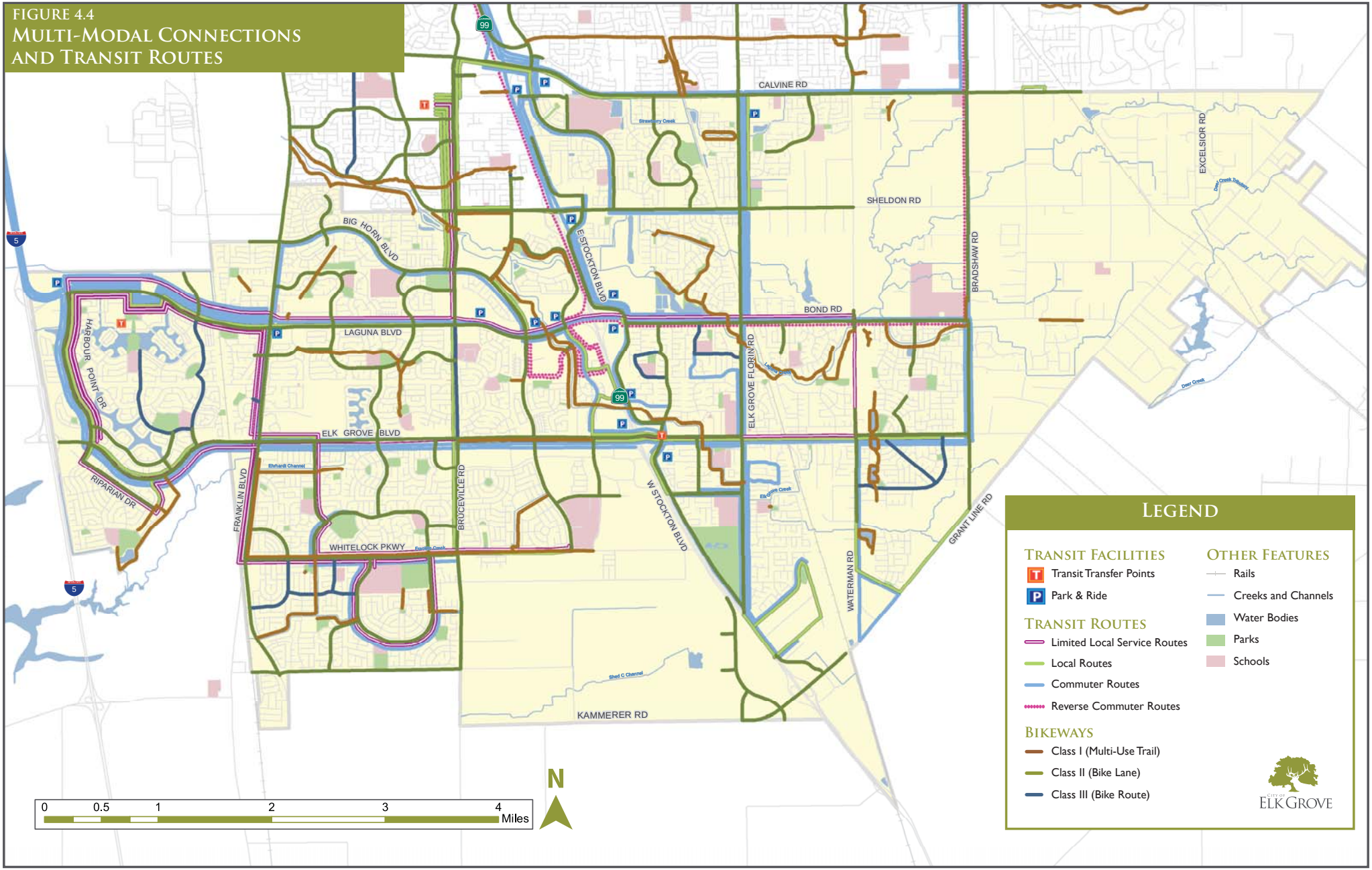
RT is making transit bicycle-friendly by providing more opportunities for bicyclists to combine biking with riding RT, such as by providing bike racks on buses, bikes on trains, and bike lockers at 19 light rail stations. A maximum of four bikes are allowed inside each light rail car on a first-come, first-served basis. Over 150 weatherproof bike lockers are located at 19 light rail stations: Sunrise, Mather Field/Mills, Butterfield, Tiber, Starfire, Watt/Manlove, College Greens, Power Inn, University/65th Street, 59th Street, 48th Street, 39th Street, 23rd Street, 16th Street, Arden/Del Paso, Watt/I-80, Meadowview, Florin and City College. Bike lockers can be rented for 6- or 13-month terms. In addition, many light rail stations have ribbon-style short-term bike racks.

Caltrans Park-and-Ride Lots

Caltrans operates 43 park-and-ride lots in the Sacramento vicinity, three of which are located in the City. The City's E-Tran serves a number of additional park-and-ride lots within the City. Park-and-ride lots provide free parking for commuters. Motorists park their vehicles at the lots and meet carpoolers, vanpoolers, or public transport for the trip to work. The majority of these lots are conveniently sited near major intersections. Most are served by public transport and many have bicycle lockers. **Table 4.4** lists the park-and-ride facilities located in the City. **Figure 4.4** provides a map of long-term bicycle parking facilities in the City, including those at park-and-ride lots.

FIGURE 4.4

Multi-Modal Connections and Transit Routes



Legend

Transit Facilities
- Transit Transfer Points
- Park & Ride

Transit Routes
- Limited Local Service Routes
- Local Routes
- Commuter Routes
- Reverse Commuter Routes

Bikeways
- Class I (Multi-Use Trail)
- Class II (Bike Lane)
- Class III (Bike Route)

Other Features
- Rails
- Creeks and Channels
- Water Bodies
- Parks
- Schools

City of Elk Grove

Table 4.4. Park-and-Ride Locations in Elk Grove

Name	Location
Apple Computer	Harbour Point Drive at Kausen Drive
Laguna Creek Town Center	Franklin Blvd. at Laguna Blvd.
Laguna Crossings Town Center	Bruceville Road at Laguna Blvd.
Laguna Gateway	Laguna Blvd. at Big Horn Blvd. and Laguna Blvd. at West Stockton Blvd.
Sheldon (Caltrans)	E. Stockton Blvd. at Sheldon Road
Calvine (Caltrans)	E. Stockton Blvd. at Geneva Pointe Drive
Laguna 99	Elk Grove Blvd. at Highway 99
Lowe's Home Improvement Warehouse	Power Inn Road at Calvine Road
Marketplace 99	E. Stockton Blvd. at Bond Road (behind northbound bus shelter)
Marketplace 99 South	E. Stockton Blvd. at Bond Road
Calvary Christian Center	E. Stockton Blvd. at Baniff Vista Drive
Bel Air Village	Elk Grove Florin Road at Calvine Road
Elk Grove Blvd. (Caltrans)	E. Stockton Blvd. at Elk Grove Blvd.

Source: E-Tran, http://www.e-tran.org/e-tran-park-and-ride-lots.asp

4.2 EXISTING PEDESTRIAN NETWORK

Existing Pedestrian Facilities

Pedestrian facilities include multi-use paths, sidewalks, crosswalks, walkways, stairs, ramps, and building entrance ways. Sidewalks and walkways between homes in residential developments comprise most of the pedestrian facilities in the City. In rural areas, multipurpose shoulders are constructed as an interim or buildout condition. For interim cases, road widening and sidewalk installations occur when adjacent land uses develop. In the areas covered by the Elk Grove Rural Roads Policy, sidewalks are not currently required.

Figure 4.3 illustrates the existing bicycle and pedestrian facilities in the City. The network of sidewalks in the City is extensive and is thus not displayed on the map. **Figure 4.3** does not display some pedestrian facilities such as sidewalks and crosswalks.

5.1 PROPOSED BIKEWAYS AND TRAILS

Planned Bikeways and Trails

The purpose of this section is to clearly identify the City's desired bikeway and trail system to all parties, including residents, property owners, developers, City staff, and other entities that the City might collaborate with to implement the BPTMP. The proposed bikeway and trails network in **Figure 5.1** presents a continuous system of bikeways and trails connecting to numerous City destinations as well as regional destinations. It displays existing multi-use trails, bike lanes, and bike routes in the City as well as those proposed for future implementation. The design of the proposed network and facility improvements aims to accommodate all levels of bicyclists, and increase the amount of both utilitarian and recreational bicycling in the City. The construction of this trail system will require, at minimum, the acquisition of right-of-way, construction of bikeway and trail crossings, and bike/trail corridor improvements.

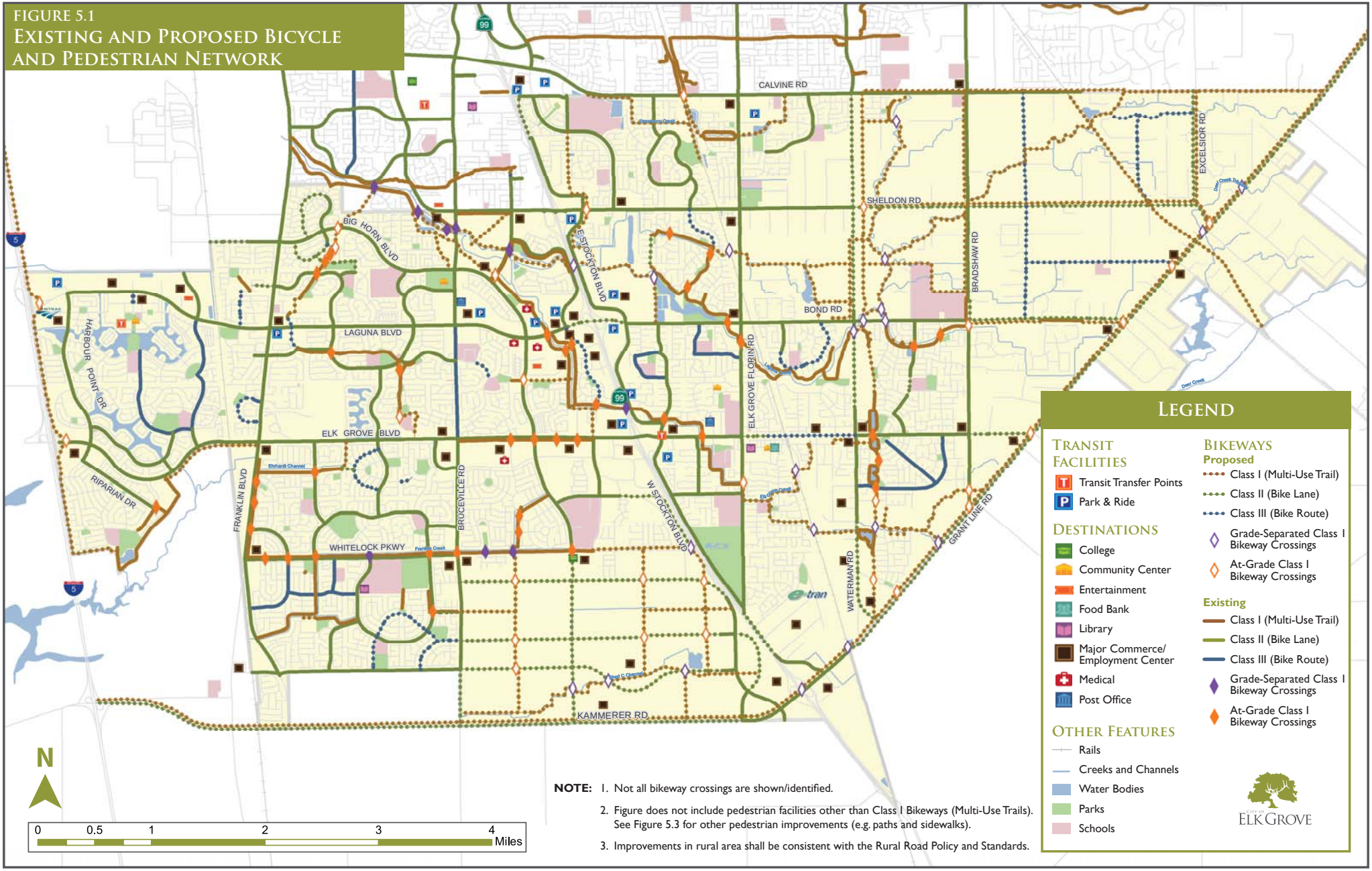
In 2003, the City (with assistance from Fehr & Peers) prepared an inventory of all existing bikeways within City limits. The proposed bikeway and trail system illustrated in **Figure 5.1** was identified based upon:

- Information from the 2003 inventory.
- Bikeways designated in the Sacramento County BMP (2011).
- The 2003 Elk Grove Bicycle and Pedestrian Master Plan Map.
- The 2007 Elk Grove Trails Master Plan Map.
- Bikeway and trail segments suggested on the Cosumnes CSD Master Plan Map.
- The Elk Grove General Plan Map.
- The East Elk Grove Specific Plan Map.
- The Laguna Ridge Specific Plan Map.
- Input from the Elk Grove Trails Committee, members of the public, and other stakeholder groups.
- Input from City staff.

The map in **Figure 5.1** shows completed and proposed bicycle, pedestrian, and trail routes. The map in **Figure 5.2** includes existing and proposed Class I bikeways (multi-use trails).

FIGURE 5.1

Existing and Proposed Bicycle and Pedestrian Network



Legend

Transit Facilities
- Transit Transfer Points
- Park & Ride

Destinations
- College
- Community Center
- Entertainment
- Food Bank
- Library
- Major Commerce/ Employment Center
- Medical
- Post Office

Other Features
- Rails
- Creeks and Channels
- Water Bodies
- Parks
- Schools

Bikeways
Proposed
- Class I (Multi-Use Trail)
- Class II (Bike Lane)
- Class III (Bike Route)
- Grade-Separated Class I Bikeway Crossings
- At-Grade Class I Bikeway Crossings

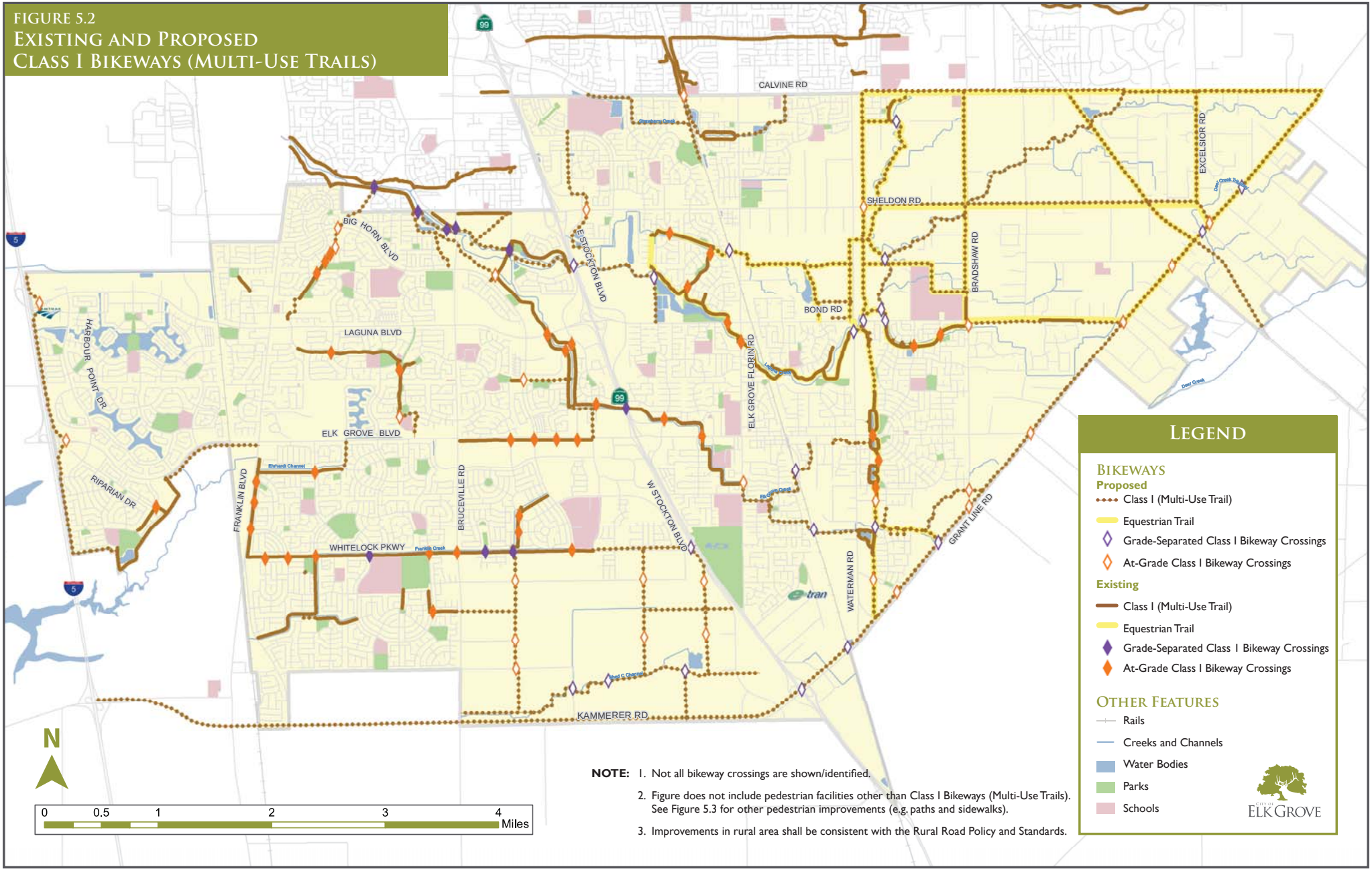
Existing
- Class I (Multi-Use Trail)
- Class II (Bike Lane)
- Class III (Bike Route)
- Grade-Separated Class I Bikeway Crossings
- At-Grade Class I Bikeway Crossings

NOTE:
1. Not all bikeway crossings are shown/identified.
2. Figure does not include pedestrian facilities other than Class I Bikeways (Multi-Use Trails). See Figure 5.3 for other pedestrian improvements (e.g. paths and sidewalks).
3. Improvements in rural area shall be consistent with the Rural Road Policy and Standards.

CITY OF ELK GROVE

FIGURE 5.2

Existing and Proposed Class I Bikeways (Multi-Use Trails)



Legend

Bikeways

Proposed

- Class I (Multi-Use Trail)
- Equestrian Trail
- Grade-Separated Class I Bikeway Crossings
- At-Grade Class I Bikeway Crossings

Existing

- Class I (Multi-Use Trail)
- Equestrian Trail
- Grade-Separated Class I Bikeway Crossings
- At-Grade Class I Bikeway Crossings

Other Features

- Rails
- Creeks and Channels
- Water Bodies
- Parks
- Schools

NOTE:

1. Not all bikeway crossings are shown/identified.
2. Figure does not include pedestrian facilities other than Class I Bikeways (Multi-Use Trails). See Figure 5.3 for other pedestrian improvements (e.g. paths and sidewalks).
3. Improvements in rural area shall be consistent with the Rural Road Policy and Standards.

CITY OF ELK GROVE

The proposed bikeways and trails in this Master Plan respond to the following physical implementation contexts and needs:

Infill: Constructing bikeways and trails in existing developed areas where no bikeways and/or trails currently exist.

Gap Closure: Constructing bikeways and trails to close gaps in the existing network.

Connectivity: Constructing bikeways and trails to provide connections to and between major destinations such as schools, parks, shopping centers, employment centers, and multi-modal transportation hubs.

Constructing trails where some physical improvements already exist, but where the right-of-way has not been opened for public use (e.g., flood control channels).

Retrofit: Constructing bikeways and trails to the BPTMP standard in locations where users would benefit from improvements to existing bikeways and trails (e.g., where trails are too narrow relative to usage, where site conditions could be changed to improve safety, or where bikeway and trail usage would be increased with the provision of additional amenities).

Constructing new bikeways and trails in developing areas as new development occurs.

Constructing bikeways and trails in correspondence with road construction projects.

Crossings: Constructing either at-grade or grade-separated bikeway and trail crossings with roadways, creeks, or other physical obstacles.

In total, the BPTMP map (**Figure 5.1**) proposes the construction of approximately 105 miles of bikeways and trails (see **Table 5.1**). The completed bikeway and trail system would then total approximately 230 miles of on-street bikeways and off-street, multi-use trails.

Table 5.1. Length of System by Bikeway Classification (in miles)

Type of Facility	Constructed (Miles)	Proposed (Miles)	Total
Class I Bikeway	29.3	64.2	93.6
Class II Bikeway	87.4	29.2	116.6
Class III Bikeway	7.9	11.8	19.7
TOTAL	**124.6**	**105.2**	**229.9**

Please refer to the BPTMP trail standards and guidelines for information on how the trail system is to be designed and maintained. It is also important to note that some existing trails may not be constructed to the standards currently expressed in the BPTMP because they were constructed prior to BPTMP approval.

A list of proposed bicycle, trail, and pedestrian projects to implement this Master Plan is included in Chapter 8, Funding and Implementation. The routes included in Chapter 8 are based on constructing the facilities proposed on the BPTMP maps. The projects are a starting point from which to begin implementation of this Plan. This list will be updated by City staff as projects are completed and as new projects are identified. Updating the list of proposed projects does not constitute an amendment to this Master Plan. Priority ranking for these projects will be conducted on an annual basis, using the criteria contained in this Plan and other factors (such as new development in the City which may affect bikeways, availability of funding, public input, and collision data). This ranking process is also discussed in Chapter 8, Funding and Implementation, of this Plan. The construction schedule for the facilities listed depends on available funding, and the pace of development in the City.

Image of trail construction in Elk Grove.

Planned Bike and Trail Facilities

Bicycle and trail support facilities are an important part of the proposed bikeway system because they add to the convenience and safety of the bicycle experience. As mentioned previously, support facilities include bike parking, shower and changing areas, transit stations, park-and-ride lots, trailheads, trail crossing, restrooms, and street furniture. Some of the proposed bicycle and trail facility improvement projects for the City include:

Image of the newly constructed pedestrian bridge over Highway 99

- Upgrading bike parking at existing public facilities, including new and improved bike racks where needed to meet current standards, and safe and secure long-term bike parking at employment sites, park-and-ride lots, or other appropriate locations.
- Promoting and incentivizing the development of bicycle parking and shower/changing facilities within private developments.
- Installing additional signage and striping along multi-use trails.
- Constructing additional bikeway/trail crossings, particularly across Highway 99.
- Installing bicycle signal detection at new and, to the extent feasible, existing intersections.
- Installing trailheads at appropriate locations along major trail corridors.
- Installing additional bicycle and trail amenities such as drinking fountains, benches, and restroom facilities at trailheads and/or along trail corridors.

The maps in **Figure 5.1** and **Figure 5.2** include key bicycle and trail facility projects proposed within the City. **Figure 5.1** does not display some pedestrian facilities such as sidewalks and crosswalks.

5.2 PROPOSED PEDESTRIAN NETWORK/ IMPROVEMENTS

Planned Pedestrian Facilities

Pedestrian facilities include multi-use paths, sidewalks, crosswalks, walkways, stairs, ramps, and building entrance ways. Continuous sidewalks are provided on many roadways in the City, particularly on arterial and collector streets and in newer developments. However, there are still numerous gaps in the sidewalk network within certain urbanized areas. Within the City's designated rural community, there is adopted policy and rural road standards that preclude development of paved sidewalks within the right-of-way. These restrictions do not apply to off-street trails within the rural community.

Sidewalk infill construction in Elk Grove

Pedestrian walkability refers to the ease, comfort, and safety of walking and is influenced by connectivity, accessibility, sense of safety (real and perceived), and the quality of the pedestrian environment. The goals and objectives set forth in this Master Plan work toward achieving a high level of walkability to increase pedestrian travel in and around the City. To develop a pedestrian-friendly environment, it is important to consider challenges faced by pedestrians, such as inadequate sidewalks, infrequent street crossing opportunities, and/or lack of a direct route. The following is a list of proposed pedestrian facility projects to improve walkability in the City, based on existing conditions and public input.

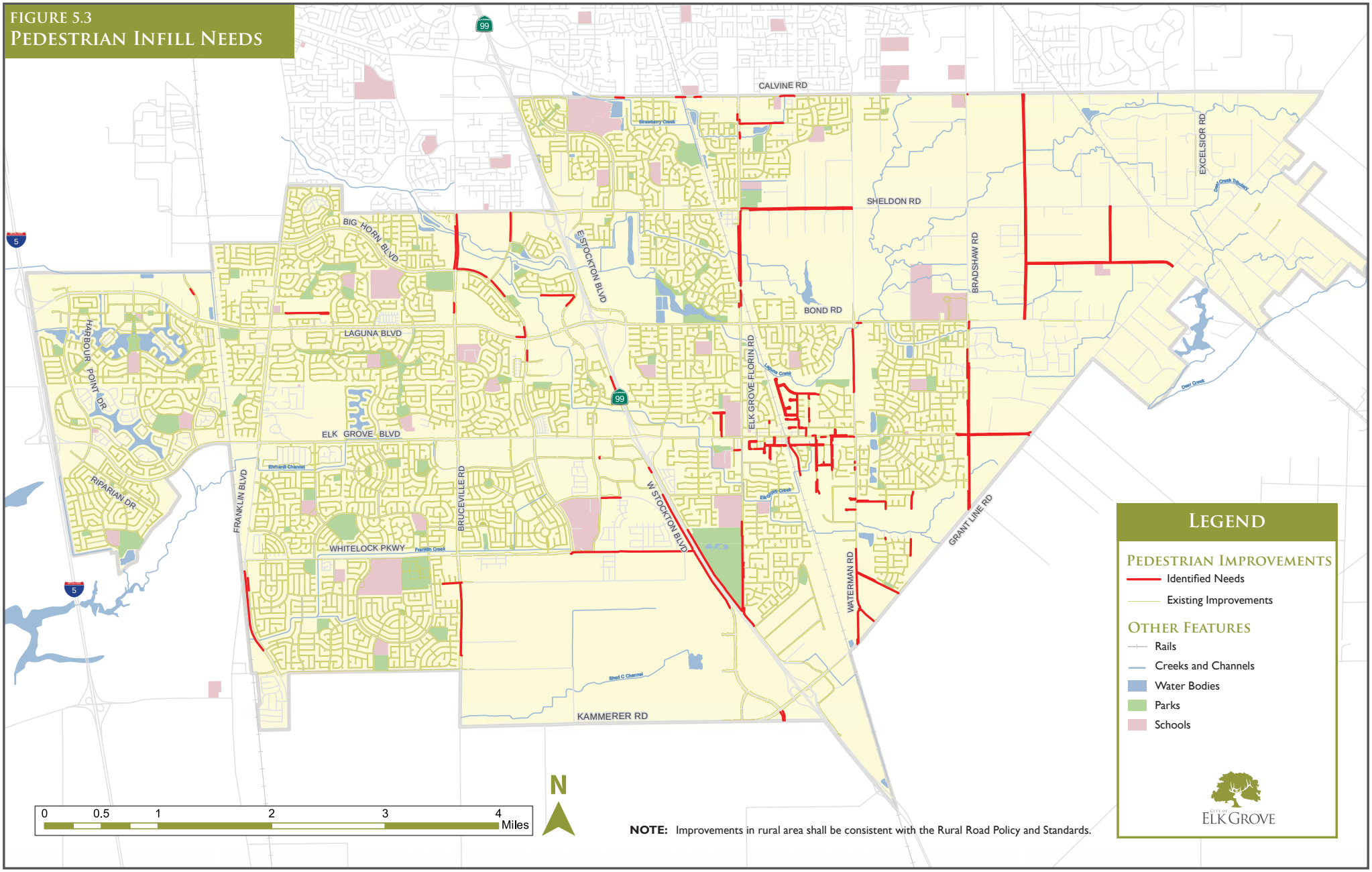
- Construct sidewalks and curb ramps in existing developed areas where no sidewalks currently exist ("sidewalk infill").
- Construct new sidewalks and curb ramps in developing areas as new development occurs.
- Construct sidewalks and curb ramps to BPTMP standards in locations where users would benefit from improvements to existing facilities (e.g., where sidewalks are too narrow, where site conditions could be changed to improve safety, or where sidewalks do not meet ADA standards).
- Install additional pedestrian amenities such as wayfinding signage, bus shelters, street furniture, landscaping, drinking fountains, and restroom facilities along streets, in parks, at public buildings, at trailheads, and/or along trail corridors.

- Construct new pedestrian crossings and improving existing crossings through the use of bulb-outs, pedestrian islands, marked and/or raised crosswalks, and pedestrian-activated signal lights at intersections.

Planned pedestrian facilities in the City are shown in **Figure 5.1.** The network of pedestrian path infill needs (not including multi-use trails) in the City is extensive and is thus shown on a separate map in **Figure 5.3**.

The BPTMP addresses the pedestrian improvements needed within the public rights-of-way and does not deal with issues concerning land use, private development, or public lands, such as parks.

FIGURE 5.3
Pedestrian Infill Needs



Education, Encouragement, and Enforcement Programs

6

6.1 EXISTING PROGRAMS

Local Programs

The Elk Grove Unified School District (EGUSD) promotes walking and bicycling through several programs. One such program is Walk to School Day, which primarily takes place at the elementary schools. On Walk to School Day, each school hosts various activities to promote walking and bicycling to school and healthy living including Walking School Buses, breakfast, music, and others. Additionally, the EGUSD Board adopted a Safe Routes to School Program Board Policy recognizing that walking, bicycling, and other forms of active transport to school promotes students' physical activity, and carpooling helps to reduce vehicle traffic and air pollution in the vicinity of schools. Two of the district's elementary schools (Prairie and Anna Kirchgater Elementary Schools) are Bicycle Helmet Safety Centers. The Bicycle Helmet Safety Center program is a partnership with UC Davis Injury Prevention Program and Kohl Cares. The program provides free bicycle safety helmets, individual helmet fittings, along with traumatic brain injury and bicycle safety education. The Helmet Safety Centers provide helmets on a continuing basis to students and/or community members in need. A second component of the program includes classroom education provided by California State University, Sacramento nursing students over an 8- to 10-week period. The interns visit every classroom at the respective school(s) and all students receive a properly fitted bicycle safety helmet.

The Elk Grove Police Department, in partnership with the EGUSD and CSD Parks and Recreation and Fire Departments, operates educational events about 10 times per year. Through this program, the Police Department visits elementary schools six times throughout the year to conduct helmet and bike inspections, provide new helmets to students, and run through safety courses to teach children about bike riding and safety measures. The department also conducts bike safety demonstrations and provides handouts at special events, held four to five times a year. Lastly, the Police Department hosts community bike safety rodeos and pedestrian safety demonstrations several times a year.

State Programs

Caltrans and the California Department of Public Health both have several plans and programs designed to increase pedestrian and bicyclist

safety. In 2005, Caltrans initiated the implementation of the California Strategic Highway Safety Plan. The plan's Challenge Area 8 "Make Walking and Street Crossing Safer" and 13 "Improve Bicycling Safety" include measures to improve infrastructure, culture, and education campaigns to reduce hazards for these groups. Many of the action items for the plan had been implemented as of 2014.

Effective October 2008, Caltrans Deputy Directive 64-R1 codified Caltrans' intention to integrate motorized, transit, pedestrian, and bicycle travel by creating complete streets that provide safe travel for all road users, beginning early in system planning and continuing through project delivery and maintenance and operations. In 2010, Caltrans published *Complete Intersections: A Guide to Reconstructing Intersections and Interchanges for Bicyclists and Pedestrians,* which supports the department's plans and policies requiring improvements in conditions for pedestrians and cyclists. In 2010, 73 action items were included in Caltrans' Complete Streets Implementation Action Plan, as a tool to help implementation of DD-64-R1, the State's Complete Streets policy. The State continues to work toward the measurable goal set by Caltrans' California Blueprint for Bicycling and Walking of reducing crossing accidents by 25 percent.

The California Department of Public Health's PedSafe Program is an ongoing effort toward improving pedestrian safety and reducing the number of pedestrian injuries and fatalities statewide. The department's new 2011–14 Strategic Plan includes a goal to improve pedestrian safety and reduce the number of pedestrian injuries and fatalities.

Federal Programs

- The Federal Highway Administration's final report of the National Bicycling and Walking Study cites two overall goals:
- To double the percentage of total trips made by bicycling and walking in the United States from 7.9 percent to 15.8 percent of all travel trips.
- To simultaneously reduce by 10 percent the number of bicyclists and pedestrians killed or injured in traffic crashes (SACOG 2004).

As discussed in Chapter 3, Goals and Objectives, one of the goals of the BPTMP is to educate the public on bicycle and pedestrian opportunities and safety issues. This will be accomplished by supporting educational programs such as those described above, and by providing literature and current bicycle route maps to the public.

Standards and Guidelines 7

7.1 ACCESSIBILITY

The requirement to provide equivalent access to facilities for all individuals, regardless of disability, is stated in several laws adopted at both the State and federal levels. Two of the most notable references are the Americans with Disabilities Act of 1990 (ADA) and Section 4450 of the California Government Code. Title II of the ADA prohibits discrimination on the basis of disability by State and local governments (public entities). This means that a public entity may not deny the benefits of its programs, activities, and services to individuals with disabilities because its facilities are inaccessible. A public entity's services, programs, or activities, must be readily accessible to and usable by individuals with disabilities. Sections 4450 through 4460 of the California Government Code require that buildings, structures, sidewalks, curbs, and related facilities that are constructed using any State funds, or the funds of cities, counties, or other political subdivisions, be accessible to and usable by the physically disabled. The FHWA has directed Caltrans to use the ADA Accessibility Guidelines for Buildings and Facilities as the federal design guidelines for pedestrian accessibility. This information, as well as additional guidelines for complying with ADA, is contained in Chapter 100 of the Caltrans *Highway Design Manual*.

All bicycle, pedestrian, and trail facilities within the City shall comply with Chapter 100 Basic Design Policies of the Caltrans *Highway Design Manual* and shall be designed in accordance with the most up-to-date federal and State ADA requirements.

7.2 BICYCLE DESIGN STANDARDS

Bicycle facilities within the City shall be designed in accordance with Chapter 1000 Bikeway Planning and Design of the Caltrans Highway Design Manual, "Bikeway Planning and Design." Other resources useful in facility planning and design include Chapter 9 from the FHWA's *Manual on Uniform Traffic Control Devices* (MUTCD) and the "Guide for Development of Bicycle Facilities" by the American Association of State Highway and Transportation Officials.

In addition, recommendations and best practices for bicycle facilities are outlined below.

Lockers and Racks

In order to encourage bicycling, it is essential that cyclists are able to lock their bicycles at a secure and convenient location, usually immediately adjacent to their destination. If the bicycle will be parked for several hours, a bike locker or other means of long-term bike parking facilities—such as bicycle racks in an enclosed, weather-protected area—are desirable.

Recommendations for Short-Term Bicycle Parking Facilities

Recommendations for short-term bicycle parking include the following:

- Bicycle parking spaces should be approximately 6 to 8 feet long and 2.5 to 3 feet wide, with sufficient overhead clearance.
- Bicycle racks or lockers should be securely anchored to a surface or structure.
- Bicycle racks should allow the frame and at least one wheel to be locked to the rack.
- Racks should have at least 30 inches of clearance from all directions from any vertical obstructions such as other racks, walls, and landscaping.

Based on best practice for simplicity of design, cost, and theft resistance, the preferred short-term bicycle rack design is the "Inverted-U" style rack (**Figure 7.1**). These racks offer a simple, secure design for placement where space is limited. When installing more than one, racks should be 3 to 4 feet apart and at least 2.5 feet from other objects.

Figure 7.1 illustrates the type of bicycle racks that meet the recommendations listed above.

Figure 7.1. Recommended Bicycle Rack Types

"Pi" Rack

Meter-Post/Bollard-Style Rack

Wall Rack

Inverted-U Rack

Lightening Bolt LR Series Bike Rack (manufactured by Creative Pipe Inc.)

Recommended Types of Long-Term Bicycle Parking Facilities

Long-term bicycle parking facilities are intended to provide secure bicycle storage for commuters and other long-term users. Long-term facilities protect the entire bicycle, components, and accessories against theft and inclement weather. Examples of long-term bicycle parking facilities include lockers, bicycle cages, stations/check-in facilities, monitored parking, and bike parking rooms within buildings. Electronic bike lockers provide secure individualized parking that can be accessed with an electronic card. Unlike standard key lockers which provide one key for one renter, a single e-locker can be rented by multiple cyclists

each week by using smart card technology. The improved efficiency translates into greater availability, and is a popular option at transit stations. Each parking space in a bike locker, cage, or room should be accessible without moving another bicycle. Generally, about 5 feet of maneuvering space should be provided behind bicycle parking spaces. Covered long-term bicycle parking facilities are preferred.

Figure 7.2 illustrates recommended long-term bicycle parking facilities.

Figure 7.2. Recommended Long-Term Bicycle Facilities

Bike Locker

Electronic Bike Lockers

Bicycle Cages or Rooms

Photo by Prayitno [CC-BY-SA-2.0], via Flickr

Bicycle Stations

Photo by Matthew Roth [CC-BY-SA-2.0], via Flickr

Bicycle Detection

The California MUTCD Supplement requires the provision of bicycle and motorcycle detection on all new and modified approaches to traffic-actuated signals. Bicycle detection at signalized intersections can provide a substantial safety improvement for bicyclists and motorists. Detection for vehicles and bicycles is usually provided via metal-detecting "loop detectors," which trigger a green light when they sense metal nearby. Similar to pedestrian-activated signals, bicycle push buttons can be installed at intersections where cyclists can push the button to trigger a green light. Placement of bicycle push buttons should allow cyclists to push the button without leaving the bicycle lane, and should never require bicyclists to cross a turn lane to activate them. Video and radar detection systems can also be used to detect bicycles.

Signage and Striping

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 motorists, bicyclists, pedestrians, and other users. By leading people to City bikeways and trails, effective signage can encourage more people to bicycle and walk. All wayfinding signs and bicycle striping on public roadways in the City shall conform to the guidelines laid out in Caltrans *Highway Design Manual* Chapter 1000 and the CA MUTCD Supplement. Signs should be designed to convey direction, destination, distance, and distinction. The City should consider using D11-1 Bike Route Signs in conjunction with the D1 Bicycle Guide Signs (see figure below) as part of the wayfinding system. These signs should be installed at key points along on-street corridors directing bicyclists to transit stations, trails, and other major destinations like schools, parks, civic buildings, and shopping centers. **Figure 7.3** illustrates bicycle route and guide sign examples.

Figure 7.3. Bicycle Route and Guide Signs

Photo by Eric Fischer [CC-BY-2.0], via Flickr

Safety and Security

Security or perceived security may be an issue, especially along portions of Class I bike paths, overcrossings, and undercrossings. The following actions are recommended to address these concerns. 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 Police Department's normal operations.

The Sacramento County BMP (2011) provides a broad list of recommendations to ensure the safety and security of bicycle facilities. The following recommendations have been extracted from this resource and should be incorporated into the planning and development of bicycle facilities in the City whenever possible.

- Maintain adequate recording and response mechanisms for reported safety problems.
- Provide regular police patrols to the extent needed and/or possible.
- Respond to accident investigations with appropriate design or operation improvements.
- Specifically for Class I bike paths:
  - Manage vegetation so corridors are visually unobstructed by selecting shrubs that grow no more than 3 feet tall and trees that branch out more than 10 feet from the ground.
  - Provide adequate lighting at tunnels, undercrossings, and overcrossings.
  - 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, a program that provides an opportunity for local residents to become actively involved in crime prevention along the City's paths.

7.3 MULTI-USE TRAILS STANDARDS

The City has adopted the following trail standards and guidelines below to direct the planning, design, construction, and maintenance of trails in the City. Some items are mandatory (e.g., standards typically utilize the word "shall"), whereas others are advisory (e.g., guidelines typically utilize the word "may").

General Siting and Design Standards

Motorized vehicle restriction

Motorized vehicles are restricted from trails, except those motorized or mechanized vehicles used by people with disabilities, for trail maintenance, or for emergency purposes.

Trail design and compatibility with natural resources

In general, the design of trails shall be understated, shall use materials and colors that are not in contrast to the surrounding context, and, where possible, shall have alignments that are in conformance with land contours and geomorphology. Trail design and locations shall avoid site-specific hazardous conditions, avoid impacting potential habitat or other sensitive areas, and not exacerbate flood conditions. It is encouraged that trail design enhance habitat for native species. Trails that parallel streams shall be located beyond wetlands, the riparian corridor, and the 10-year floodplain, where possible. Environmental sensitivity shall also inform the design of any trail crossing over a drainage channel; crossings should be arched wherever possible to minimize impacts and maintenance costs. Consultation with City engineers and regional resource agencies may be necessary in order to develop trail designs that minimize environmental impacts.

Trail safety and security

Trail design, amenities, and maintenance shall provide for trail safety and security. Trails shall not create physical entrapment areas, shall allow for trail user defensible space, and shall provide adequate sight distances for trail users. Refer to section 7.2, Safety and Security, above for additional recommendations.

Trail connectivity with surrounding land uses

Trail connectivity shall be provided to surrounding land uses. Where trail corridors abut commercial and office areas, trail access shall be provided to those areas where appropriate. Where trail corridors abut

residential neighborhoods, trail access shall be provided at regular intervals of approximately 600 feet. Where possible, trails shall be incorporated into parks and open spaces.

Trail Compatibility with Surrounding Land Uses

Trail design shall be compatible with surrounding land uses. The design of trails shall provide a degree of privacy to surrounding residences, but still allow for informal monitoring of the trail. Trails shall not be placed adjacent to or on farmland if feasible alternative routes exist elsewhere in the vicinity. However, if no other feasible routes exist, trails shall be designed in cooperation with adjacent property owners in order to minimize adverse impacts on farming practices.

Trail Crossings

New roadways that cross or interrupt existing Class I Bikeways shall be minimized where possible to reduce interactions and conflicts with vehicles and signalized intersections, which could have an adverse impact on trail users. New Class I Bikeways are preferred when they include separated crossings across major roads and minimal traffic cross-flow.

Trail Dimensions and Clearance

Trail Corridor Width

A trail corridor is defined as the area within which a trail tread is constructed and which also contains landscaping and any other improvements necessary to ensure the functioning of the trail. In general, trail corridors shall be as wide as possible, and at minimum, take into account the need for trail maintenance and emergency access where appropriate. Trail corridors shall be wider than trail tread widths to ensure flexibility in alignment possibilities for aesthetic value, safety considerations due to site conditions, and avoidance of possible habitat or other sensitive areas. Trail corridor easements shall coincide, where possible, with easement boundaries to ensure flexibility in alignment possibilities. In some cases, trail corridors will need to be narrower than would be typically desired—for instance, in infill situations where limited space is available to complete a trail connection or along a roadway where the right-of-way is narrow. In these cases, it is specifically intended that a narrow trail corridor may be used, if needed. Similarly, accessibility by emergency vehicles, although desired, may not be possible on all trails.

Trail capacity

The capacity of the trail system shall be a primary design focus. Trails shall be designed to accommodate expected demand, in which case trail features, such as the trail tread width, may need to be increased beyond the minimum specified in order to design the appropriate capacity. Trails shall be designed to accommodate two-way traffic for all user groups. Trails shall be designed to accommodate as many trail user groups as possible. In order to facilitate increased access to trails for users of varying abilities, rest areas and other trail amenities shall be provided and steep grades shall be avoided (while in some limited circumstances the grade may be up to 8.3 percent for short distances, the maximum recommended grade is 5 percent; it is recommended that sustained grades be limited to a maximum of 2 percent). Trails shall be compliant with federal and State access requirements.

Trail design to minimize potential user conflicts

The design of trails shall reduce potential conflicts between different user groups. To the greatest extent possible, equestrian trails shall be separated from other user groups, either through distance, vegetation, and/or grade separation. Pedestrian and bicycle trail users may share combined facilities. However, additional trail tread width may be required to allow generous passing areas on those portions of the trail where high pedestrian use is expected.

Opportunities for Caltrans Highway Design Manual Chapter 1000 Standards

Wherever possible and especially where regional funding is desired, the design of combined bicycle and pedestrian facilities shall meet the Caltrans *Highway Design Manual* Chapter 1000 standards for Class I Bikeways. These standards pertain to trail tread widths, horizontal and vertical clearances, design speeds, cross-slopes, and stopping distances.

Equestrian trails

Equestrian on trail
Photo by Alex Brollo [CC-BY-SA-3.0], via Wikimedia Commons

Equestrian trail treads shall be separated from other user trail treads by a minimum of 5 feet horizontal distance wherever possible; a wider separation is encouraged. The minimum equestrian trail tread width is 5 feet. Only when there are site constraints shall the equestrian trail tread width be as narrow as 3 feet; in those cases, passing areas shall be provided at reasonable intervals. The trail tread width shall be clear of all obstructions. Trail horizontal clearances/shoulders are not required unless site conditions require them for safety. The minimum vertical clearance for equestrian trail tread is 12 feet above the tread and any

horizontal clearances/shoulders. At site-specific locations, a lower clearance may be allowed (e.g., at bridge undercrossings), but in no case shall clearance be less than 10 feet.

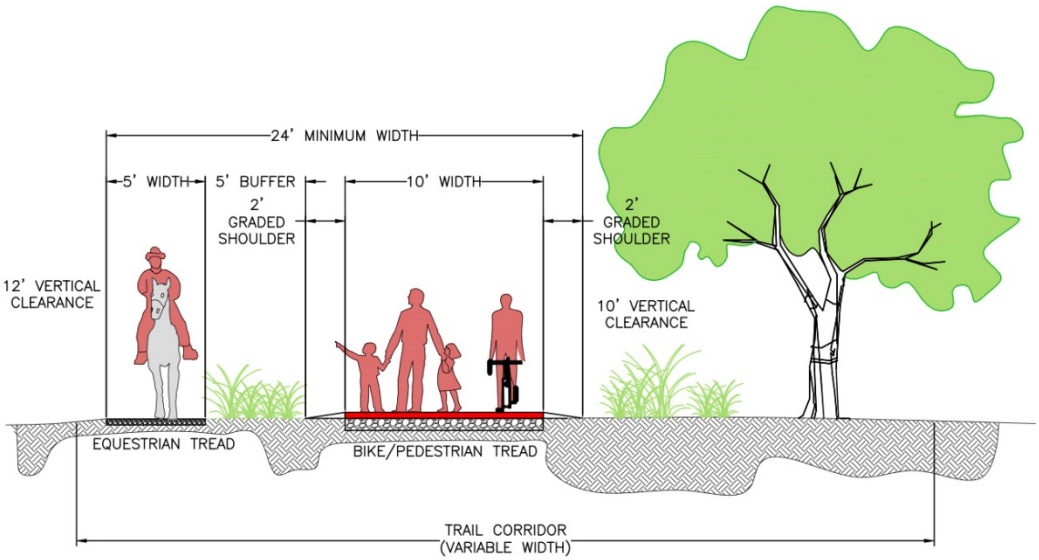
Bicycle and pedestrian trails

The minimum bicycle and pedestrian trail tread width is 10 feet of paved trail, which is consistent with Cosumnes CSD fire standards so that trails can double as fire roads. An increased trail tread width of up to 12 feet may be required in order for the trail to provide appropriate capacity relative to expected demand. There shall also be a 2-foot graded shoulder immediately adjacent to either side of the paved surface. These dimensions shall be clear of all obstructions. Additional shoulder and horizontal clearance width is not required except where there are site conditions that necessitate additional horizontal clearance for safety. The minimum width for the paved surface may be as narrow as 8 feet and the graded shoulders may be eliminated only in special site-specific circumstances where the terrain makes the implementation of these standards unsafe or impossible.

Pedestrians along Laguna Creek, an example of a standard bicycle/ pedestrian trail with a 10-foot width

For example, this exception may be granted if the trail is to be placed in a narrow trail infill situation where development on either side has already occurred, or if there are continuous site constraints such as a narrow creek channel, or if the bicycle and pedestrian tread width goes between two objects (e.g., railings or bridge supports). The minimum vertical clearance for bicycle and pedestrian trail tread widths is 10 feet above the tread and any horizontal clearances/shoulders. At site-specific locations, a lower clearance may be allowed (e.g., at bridge undercrossings), but in no case shall clearance be less than 10 feet. **Figure 7.4** illustrates an example of a trail cross-section in the City.

FIGURE 7.4. EXAMPLE ELK GROVE TRAIL CROSS-SECTION



Trail Surface Materials

SURFACE MATERIALS FOR EQUESTRIAN TRAIL TREADS

Equestrian trail treads are required to be of decomposed granite or native material that is thoroughly harrowed and free from debris (roots, gravel, and cobble, among other debris).

SURFACE MATERIALS FOR BICYCLE AND PEDESTRIAN TRAIL TREADS

The graded shoulder immediately adjacent to the paved surface shall be of decomposed granite or native material that is harrowed and free from debris (roots, gravel, and cobble, among other debris). The paved surface of bicycle and pedestrian trail treads shall be of environmentally friendly recycled content wherever possible. Permeable pavement may also be considered, as well as other materials that may aid in safety, landscaping maintenance, and/or trail user comfort. Trail surfaces shall be a minimum of 3 inches of asphalt concrete or over 4 inches of aggregate base or 3.5 inches of concrete over 4 inches of aggregate base when in street right–of-way. Surface materials shall also be skid-resistant. Increased thicknesses and content of surface materials shall be considered in order to improve durability. In limited circumstances, it may be permissible to temporarily open a trail prior to the installation of paving.

Surface quality

All trail treads shall have continuous surface quality. If repairs are made to trail surfaces, then the repairs shall provide for a surface that is as smooth and of high quality as the original surface. Additionally, drainage grates, manhole covers, driveways, or similar obstructions shall be located and installed to promote safety of trail users. Considerations include the design of all drainage grates and avoiding the construction of vertical lips between materials or keeping them to the maximum allowed by accessibility standards.

Soil sterilant

Use of a soil sterilant is required below all paved tread widths in order to prevent possible weed growth through trail surfaces.

Root guards

Root guards shall be installed wherever trees are planted closer than 4 feet to paved tread widths. Root barriers shall be installed to extend at least 24 inches deep and to a distance of 10 linear feet from either side of the tree's trunk along the paved tread width or as approved by the City Engineer.

Trail foundation

All trails shall be designed with consideration given to the structural characteristics of underlying soils and expected loadings. Trail foundations shall assure trail longevity and shall support the weight of motorized vehicles required for emergencies and/or maintenance operations. Compressible, saturated, or other adverse subsurface foundation conditions should be mitigated prior to construction.

Trail Drainage

Trail runoff

Trail treads shall be designed to prevent runoff from being erosive to their surface or of surrounding soils and vegetation. If collected, trail runoff shall be discharged in such a manner that prevents erosion and impacts to surrounding vegetation and should be conveyed to an area where natural treatment can occur prior to discharge to creeks or streams. Any drainage ditches and grates that are used shall be placed in locations so as to not present obstacles or hazards to trail users.

Trail cross-slope

Trails shall have a cross-slope of 2 percent or as needed to ensure proper drainage but still conform to accessibility guidelines. Sloping in one direction only is preferred.

Landscaping

Planting palette

Plant materials shall be selected for their year-round vigor and shall be planted to have an immediate and ongoing aesthetic effect. Preference should be given to use of native plants which are consistent with the trail location and provide habitat suitable for native species. Plant materials shall range in sizes from groundcovers, small shrubs (minimum size: 1 gallon), large shrubs (minimum size: 5 gallon), and trees (minimum large growing trees: 15 gallon; small growing trees: 24-inch box).

Oak tree along Laguna Creek

The trail planting palette may incorporate plants used elsewhere in the surrounding developed areas. Projects are also welcome to recommend landscape plant materials that meet the City's criteria for approval. Plant materials are being tested all the time and new or hybridized plants are welcome.

Care shall be given to not utilize surface rooting trees near trails in order to lessen the likelihood of tree roots affecting the trail surface. Plant materials used shall not be toxic to humans or animals. The plant litter of plant materials used shall not pose a hazard to trail users (e.g., eucalyptus trees drop branches and leaves that can be trip hazards; some grasses and bushes have thorny seeds that can cause bicycle tires to burst).

Please refer to Appendix D for a list of City-recommended plant materials. These trees, shrubs, perennials, and grasses are drought-tolerant or require low water use. There are two sizes of trees in the palette: trees that are large and can overhang the trails, and small trees for trails in electrical power line corridors. (The different power line companies have special lists for plant materials within their easements.) Many trees listed in the palette have some sort of fruit, berry, cone, or acorn; it is difficult to find a tree that does not have any some sort of fruit/pod. The shrubs and perennials listed in the palette are low-spreading plants or grow 3 feet high or less. Smaller growing plants may have to be planted in masses but will require less maintenance.

Design for low maintenance, water efficiency, and drought tolerance

Landscaping along trails shall be designed for low maintenance, water efficiency, and drought tolerance, especially through the broad use of native and drought-tolerant plant materials, the use of efficient/water-conserving irrigation systems, the grouping of plants with similar water needs, and the use of mulch. Chapter 14.10 of the Elk Grove Municipal Code contains water-efficient landscape requirements for new and remodeled commercial developments that may be adapted to meet trail planting and irrigation.

Most plant materials grown in plant nurseries are watered daily or more often depending on the climate. Also, most drought-tolerant plants will have to be weaned from the nursery watering and an automatic spray, bubbler, or drip irrigation system will need to be installed. Irrigation systems should be designed to ensure the establishment and perpetuation of plant materials. One problem with a drip irrigation system is that emitters can plug up and the plants usually die before maintenance staff realizes there is an irrigation problem. A spray or bubbler irrigation system allows the maintenance staff to visually inspect the system and the amount of water being applied.

Three-inch-deep wood chip mulch is recommended around and under shrubs and trees. The mulch helps retain moisture in the ground and reduce weed growth and maintenance.

Placement of plant materials

Consideration shall be given to the placement of trees and shrubs in order to provide shade at regular intervals and not obscure views of significant features such as trailheads, trail crossings, and trail amenities, among others. Shrubs and trees may also be used to help screen undesirable views or ground-mounted equipment from the trail. Plant materials should be carefully placed at trailheads, staging areas, and trail crossings so that they do not interfere with necessary sight distances.

Height of vegetation

In order to enhance visibility and reduce hiding places, the minimum vertical clearance for trees is 10 feet along trails. Shrubs should not exceed 3 feet in height.

Lighting

Lighting shall only be used where necessary for trail safety and security. Lighting shall be considered where there are trail crossings with streets or potential conflicts along paths, when riding at night is expected, and through undercrossings/tunnels for security concerns. Trail lighting shall be designed to not create off-site spillage.

Fencing

Fencing shall not be a component of trails unless necessary for safety reasons or avoidance of sensitive areas, or if directly adjacent to private property. When fencing is necessary and the trail is adjacent to open space, the fencing shall be open, see-through material (e.g., wrought iron) for scenic and safety reasons and to deter illegal dumping into the natural area. Post–and-cable fencing shall be used between trails and naturally sensitive areas.

Trail Signage and Markings

Types of Trail Signage

A variety of signage types may be installed along trails. Signage shall be attractive, easily readable at varying speeds and distances, and provide a hierarchy of information. Signage can be:

- **Regulatory in nature** (e.g., clarifies rights-of-way at intersections, lists hours of operation, lists activities that are restricted).
- **Safety-oriented** (e.g., provides notification of potential hazards, identifies when there is a convergence of trail user types, lists emergency contact information).
- **Behavioral** (e.g., lists codes of trail conduct, clarifies trail user rights-of-way and yield information, clarifies trail etiquette).
- **Informational** (e.g., identifies trail amenities and characteristics, lists trail maintenance and graffiti/vandalism abatement contact information, lists contact information to find out more about the City trail system).
- **Directional/wayfinding** (e.g., differentiates the way of the trail and signalizes that the trail is publicly owned, identifies distances to popular destinations, provides mileage information, identifies cross-street names).

- **Educational/interpretive** (e.g., provides descriptions of adjacent natural features or cultural resources, provides information on local watersheds).

Required Signage Standards

Trail signage shall meet all applicable signage standards where necessary, including ADA Accessibility Guidelines and Applicable Title 24 California Codes, Caltrans *Highway Design Manual* Chapter 1000 for Class I bikeway facilities, the FHWA's MUTCD, the City's Municipal Code, and the City Police Department's policies and standards. Standards cover topics such as signage shapes, colors, dimensions, lettering, symbols, word messages, borders, and signage placement locations, heights, orientation, and offsets.

Signage Locations

Photo by Stillwaterising [CC-BY-SA-3.0], via Wikimedia Commons

Signage shall be provided at all of the following locations:

- **Trail at-grade street and railroad crossings and transitions.** Signage at trail at-grade street crossings and transitions shall conform to all applicable standards. Detectable warnings shall be installed to assist trail users with visual impairments. The use of audible traffic signals should also be considered. Prior to at-grade trail crossings with streets, trail users shall also be notified of the crossing, if the trail continues beyond the street or ends at the street, and if the crossing offers an opportunity to transition to an on-street facility, such as sidewalks or bicycle lanes. Signage shall be installed to notify motorists of upcoming trail crossings.
- **Convergence of user groups.** Prior to any bicycle and pedestrian trail convergences with an equestrian trail, notification shall be posted along both trails regarding the convergence.
- **Horizontal and vertical clearances.** There may be instances where the minimum horizontal and vertical clearances cannot be accommodated, such as at bridge undercrossings. In these instances, either side of the obstruction shall incorporate a warning design feature and notification shall be posted in advance of the obstruction to inform trail users of such conditions and appropriate use conditions to follow, such as reducing speeds or dismounting.

- **Trail inundation.** Notification shall be posted in advance of all possible trail inundation locations.
- **Trailheads and staging areas.** Notification of any trail regulations, trail codes of conduct, trail amenities and characteristics, emergency contact information, and trail maintenance contact information shall be posted at trailheads and staging areas. Brochures and maps may also be placed at these locations. The use of audible informational signs shall also be considered.

Signage placement frequency

The frequency of signage locations shall be dependent upon the signage type/purpose. The number and location of signs shall be carefully considered, as a lack of signage or poorly located signage can create hazardous situations for trail users and an overabundance of trail signs can affect the aesthetic quality of the trail experience and decrease signage effectiveness. Signage may be placed at alternating sides of the trail and may be double-sided. In general, directional signage shall be placed at all trailheads/staging areas, at all major intersections, at all turns, and approximately every quarter mile as necessary.

Signage materials, construction, and installation

Trail signage shall be of durable materials and shall be constructed and installed to be resistant to weather, vandalism, and theft.

Trail striping

Trail striping is typically done through the use of reflective paint to help trail users judge distances to obstacles or hazards. Striping is recommended when a trail is likely to be heavily used by two-way traffic, on curves with restricted sight distance, and where the trail is not illuminated and where nighttime ridership is expected. Striping is also recommended when tread widths run along continuous fixed objects (e.g., walls, fencing) so that users have improved ability to navigate their proximity to the object.

Trail entrance barriers

Low landscaping, knock-down trail bollards, or a similar removable entrance barrier shall be used at trail entrances as an unauthorized motorized vehicle deterrent.

The spacing of entrance barriers shall be wide enough to permit the passage of wheelchairs, bicycle-towed trailers, and adult tricycles, but

shall not be wide enough to accommodate the typical motorized vehicle. Care shall be taken to carefully mark and ensure the visibility of this low landscaping or other entrance barriers through the use of pavement markings. A reflective single knock-down trail bollard or other removable entry bollard at the middle of a trail entrance is an appropriate deterrent, allows maintenance and emergency vehicles to quickly get on the trail, and prevents trail users from having to navigate multiple bollards, as many trail users see the trail as a two-way pattern.

Trail Amenities

Example shade area/structure

Example pet waste station

Trail staging area and trailhead general considerations

Care must be given to the design and maintenance of trail staging areas and trailheads because they give an impression to the potential trail user of the condition of the trail and the amenities that might be provided.

Trail amenities

Trail amenities shall be provided for all potential trail user groups. Amenities include year-round shade areas/structures, water fountains, trash cans, pet waste bag stations, benches, public art, emergency equipment (e.g., one-way phones), signage, bicycle racks, equestrian hitching posts, restrooms, picnic facilities, warm-up/stretching areas, and dog parks. These amenities should be provided frequently, but their locations, especially restrooms and water fountains, may be influenced by their availability in parks within close proximity to trails. Trail amenities shall also be located such that they can be monitored easily for security and lighted if necessary. Trail amenities shall be designed to be easy to maintain and constructed to be resistant to weather, vandalism, and theft. Trash facilities and cans shall be designed to be serviceable by currently available equipment.

Accessibility considerations for trail amenities

Picnic areas, restrooms, parking areas, and other facilities along trails and at staging areas shall be accessible to all trail users. Rest areas with benches shall be provided at reasonable intervals, the frequency of which shall vary depending on the terrain and intended use and especially where there are grade changes. Benches at rest areas shall have backrests and armrests to assist in resting and getting up from the bench. See section 7.1 on accessibility for additional guidelines.

Shade trees

Given the climate of the City, it is important to provide shade trees along trails at regular intervals. Native trees should be provided along creeks and other natural drainages to help provide comfortable streamside viewing.

Trail Crossings

Priorities for trail crossing types

Grade-separated trail crossings shall be planned for and pursued wherever they are site-specifically feasible in order to promote trail safety and ease of trail usage. High priority areas for grade-separated crossings include those areas that would increase efficiency for trail users who are commuting, safety around schools and parks where there are young trail users, and trails that are particularly high in usage. In limited instances where public funding for a grade-separated crossing might not be immediately forthcoming, it may be permissible to construct an interim at-grade crossing.

General grade-separated crossing design considerations

In order to ensure that grade-separated crossings are well used, these crossings shall be located such that they allow for a direct route of travel relative to any nearby at-grade crossings, shall have a grade that is flat enough to accommodate differences in trail user abilities, and shall be designed so that trail user entrapment areas are not created. In general, the trail shall not narrow at overpasses or underpasses and approaches may be flared to allow for improved clearance. Other trail user provisions shall be especially considered for at least another 1000 feet on either side of the bridge to ensure a safe transition. Planking for overpasses and underpasses shall be a minimum of 45 degrees or more to prevent diversion of bicycle wheels.

General at-grade trail crossing design considerations

The design of at-grade trail crossings must afford the safe passage of all trail user groups and users of varying abilities through the crossing. The design must relate to the intersection of motorized with non-motorized trail users and must accomplish the crossing in a manner that will minimize confusion by motorists and trail users and permit both to operate in accordance with the normal rules of the road. As each crossing is unique, sound engineering judgment will be required for each at-grade crossing design.

At-grade trail crossing locations

All at-grade trail crossings must occur in predictable locations and where trail users will be clearly visible. Locations of at-grade road crossings may be influenced by motorized traffic volume, speeds, and road widths. Trails should cross at right angles with roadways and railroad tracks.

- In general, trail at-grade crossings with arterial roads will be at the closest major intersection or a new intersection may be designed. Regarding at-grade trail crossings at intersections, a trail user is faced with a variety of motorist turning movements such that it is important to consider opportunities to adjust corner turning radii to slow motorists making right turns across the crossing as well as adjustments to traffic signals, such as restricting permissive establishing an all-red phase to allow for path crossings.
- It is generally permissible for trail at-grade crossings with collector and local streets to occur at mid-block locations if conditions allow for safety. In these situations, careful consideration shall be given to traffic control devices, the possibility for the use of refuge islands, access control, and pavement markings and illumination. If raised crossings are used, then care shall be made to differentiate the edges of the crossing.

At-grade crossing accessibility considerations

At-grade crossings shall be accessible to the full range of trail users, which requires design that reflects the navigability and crossing times required for trail users of various abilities and modes of trail use. Considerations shall include but not be limited to the dimensions of the path of travel, grades and surfacing at curb cuts, the availability of detectable warning signals, and the maintenance of a clear crossing free of barriers, obstacles, and hazards. Refuge islands shall be considered where high volume roadway traffic and/or speeds create unacceptable conditions for path users; roadway width is excessive given the available crossing time; or the crossing will be used by a number of people who will cross more slowly, such as the elderly, schoolchildren, and persons with disabilities. Refuge islands shall be large enough to accommodate platoons of users and provide enough distance from passing motorists for trail users to feel safe. See section 7.1 on accessibility for additional information and guidelines.

Clear assignment of rights-of-way

The rights-of-way at at-grade crossings shall be clearly assigned, given that there is the potential for conflicts because motorists often expect bicyclists to yield to motorists and efforts to require or encourage bicyclists to yield or stop at each cross street are often ignored. In assigning rights-of-way, consideration shall be given to the behavior of some trail users who may have low delay tolerance, the desire to maintain momentum, or have little traffic knowledge (e.g., children).

Provision of adequate and unobstructed sight distances and trail user visibility

Intersection sight distances, decision sight distances, and stopping sight distances for motorists and trail users are important design safety considerations for at-grade crossings. Sight distances provided to trail users shall reflect the distance a motorist would travel in the time it takes for a trail user to clear an intersection. Adequate warning signs shall be provided to allow bicyclists to stop before reaching the intersections, especially on downgrades. Stop signs shall be located as close as possible to the actual stopping point. Signage shall be placed so that signage for motorists or trail users is not confusing to motorists or trail users.

At-grade crossing traffic control devices

Crossing traffic control devices shall be installed such that trail users can use them without dismounting, if possible.

Crossing approaches and transitions

Crossing approaches shall have a relatively flat grade. Ten-foot non-skid paved aprons at crossings shall be provided where trail treads are otherwise unpaved to accommodate the transition in trail tread surface type out of the crossing area. Roadway surfaces near crossings shall be maintained such that roadway debris is not blown into the trail surfaces. Crossings can be entrance and exit points for the trail system, so likely turning movements shall be accommodated by flaring curb cuts to facilitate right turns for bicycles. Ramps and curb cuts at crossings shall be the same width as the trail or wider in order to minimize user conflicts. Ramps and curb cuts shall also provide a smooth transition to the crossing surface and comply with accessibility guidelines.

At-grade trail crossings at railroads

The most desirable crossing is a perpendicular crossing. If an angle is required, then the use of durable flangeway filler strips could be used on

low-speed railroad tracks to increase crossing safety for trail users. The trail could also be widened (which might necessitate acquiring additional right-of-way) at the crossing so that users can choose their desired crossing angle.

Trail Etiquette

Photo by vastateparksstaff [CC-BY-2.0], via Wikimedia Commons

In keeping with the rules established for regional trails like the American River Parkway, the right-of-way rules for Class I Bikeways in the City are as follows:

- Bicyclists should keep to the right lane, except to pass.
- Pedestrians should keep to the left lane, so they can see approaching cyclists.
- Faster traffic should yield to slower traffic.
- Bicyclists should yield when entering and crossing trails.
- Bicyclists should pull off of the trail if they need to stop.
- Equestrians should travel at a safe speed and let others know if it is safe to pass their horse.

Security

Trail security

Trail security on the trail system will largely be provided through the informal monitoring of the trail by trail users. Security shall also be facilitated through the design of the trail system elements (including but not limited to horizontal clearances, signage, landscaping, lighting) and through the enforcement of security by the Elk Grove Police Department. See section 7.2, Safety and Security, outlined previously for additional recommendations.

7.4 PEDESTRIAN DESIGN STANDARDS

All pedestrian facilities in the City shall be designed in compliance with Caltrans *Highway Design Manual* Chapter 100, Topic 105 – Pedestrian Facilities. This chapter covers sidewalk design (e.g., standard minimum width, crossings, maintenance), pedestrian grade separations, accessibility requirements, and location and design curb ramps.

Further resources for the planning and design of pedestrian facilities include:

- FHWA's Pedestrian Facilities Users Guide – Providing Safety and Mobility
- FHWA's Design Guidance for Accommodating Bicycle and Pedestrian Travel
- FHWA Manual on Uniform Traffic Control Devices (MUTCD)
- Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities

In addition, recommendations and best practices for pedestrian facility enhancements are outlined below.

Sidewalk and Crosswalk Enhancement Devices

Well-designed street crossings are vital for improving pedestrian mobility and connecting neighborhoods. Well-marked, high-visibility pedestrian crossings prepare drivers for the likelihood of encountering a pedestrian. They also create an atmosphere of walkability and safety for pedestrians. For instance, if pedestrians must travel substantial distances out of their way to use a controlled intersection, there is often an increase in jaywalking, which increases the risk of pedestrian/vehicle collisions. As with sidewalks, street crossings are particularly important near key destinations such as schools, transit stops, and parks, and where there are many pedestrians. Where trails intersect with roadways, careful design of the intersection is necessary to ensure that the crossing is safe and convenient for all road and trail users. The addition of new street crossings may be most effective where there are existing safety deficiencies and a high demand for street crossings.

The following provides a list of sidewalk and crosswalk enhancement devices that can be used to improve the safety and walkability of the pedestrian environment.

Curb Extensions/Bulb-Outs

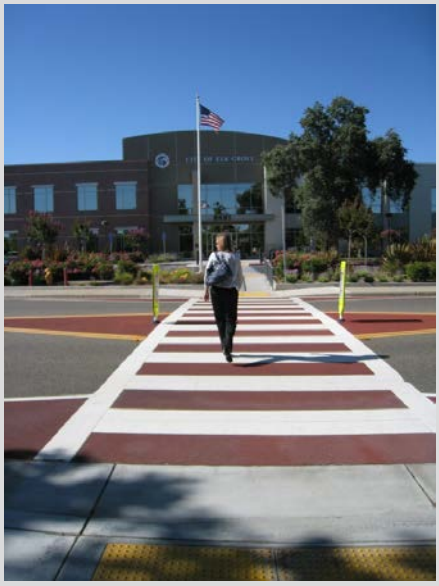
Curb extensions can be installed at intersections or mid-block to extend the curb and pedestrian space further into the roadway, helping to shorten the length of crosswalks. They serve to calm vehicular traffic by narrowing the roadway and improve visibility for pedestrians.

Pedestrian Islands

Raised pedestrian islands can be placed in the center of a wide roadway with cutouts along the pedestrian path. Pedestrian, or center, islands provide pedestrians a safe place to stop at the mid-point of a roadway before crossing the remaining distance.

Raised Crosswalk

Raised pedestrian crosswalks serve as traffic-calming measures by extending the sidewalk across the road and bringing motor vehicles to the pedestrian level. They slow vehicular traffic and allow pedestrians to cross at a nearly constant grade.



Colored and Textured Pavement

Colored or textured paving materials can be used to call attention to sidewalks and crossings and distinguish them as part of the pedestrian realm.

Photo by Eric Fischer [CC-BY-SA-2.0], via Flickr

High Visibility Crosswalk Signage and Striping

Marked crosswalks guide pedestrians and alert drivers to a crossing location, so it is important that both drivers and pedestrians clearly see the crossings. High visibility crosswalk signage and striping treatments include markings made of longer lasting plastic or epoxy materials embedded with reflective glass beads, ladder marking design (rather than traditional parallel line crosswalk design), and yellow or fluorescent pedestrian warning signs.

Pedestrian Signal Light

A pedestrian signal is a conventional traffic control device used at controlled intersections. Pedestrian signals are often push-button activated and indicate to pedestrians when it is safe to cross an intersection by displaying a lighted sign with a "Walk" symbol (walking person) or "Do Not Walk" symbol (raised hand). Countdown and verbal signals along with standard visual signals are recommended. Countdown signals indicate how many seconds remain to cross the street, and allow pedestrians the flexibility to speed up if the crossing time is about to expire. Beeping or chirping verbal signals are designed to help visually impaired pedestrians to safely cross an intersection.

Flashing Warning Beacon

Flashing LED or Rectangular Rapid Flashing Beacon (RRFB) signal lights with pedestrian warning signs can be installed overhead or post-mounted on the roadside in advance of or at a crosswalk to increase visibility of a pedestrian crossing. These are usually placed at uncontrolled or mid-block crossings. It is recommended that warning beacons be activated by the crosswalk user rather than flashing at all times. Studies suggest that RRFBs can significantly increase vehicle yielding rates compared to standard pedestrian warning signs alone.

Pedestrian-Activated Flashing Embedded Warning Lights

Crosswalks can be embedded with LED lights within the sign border to illuminate and call attention to a crossing. Embedded LED warning lights can be activated by detection or by push-button.

8.1 PAST EXPENDITURES

The City invested in a number of bicycle, pedestrian, and trail improvement projects between 2004 and 2014, totaling approximately $11 million. **Table 8.1** outlines project expenditures for projects between 2004 and 2014.

Table 8.1. City of Elk Grove Bicycle, Pedestrian, & Trail Improvement Project Expenditures 2004–2014

Project	Project Number	Project Description	Expenditure
East Stockton Boulevard Bikeway Project	PT0025	Provide Class II bike lanes and Class III Bikeways on East Stockton Boulevard from Elk Grove-Florin Road to Laguna Creek.	$759,639
Elk Grove Creek Trail Crossing at State Route 99	PT0062A	Extend the existing Class I Bikeway along Elk Grove Creek from Laguna Springs Drive to Emerald Vista Drive. Construct an overcrossing at State Route 99.	$7,991,928
Safe Routes to School Bridge at Jack Hill Park	PT0065	Construct a bicycle/pedestrian bridge over Laguna Creek (between Ringe Circle and Jack Hill Park). Implement improvements on Crowell Drive. Include a new Safe Routes to School map (Elk Grove Elementary School to Kerr Middle School) and a one-day Safe Routes to School training for parents and school administrators.	$1,640,030
Laguna Creek Trail - Camden South Spur *	PT0121	Extend the existing Laguna Creek Trail from Camden Lake to Bond Road. Construct 0.6 miles of paved asphalt, multi-use trail with a steel bridge spanning Laguna Creek and new bike lanes to connect Laguna Creek Trail to Whitehouse Creek Trail.	$501,974
Gilliam Drive Trail Connector	PT0124	Install an asphalt trail and landscaping improvement to connect the existing multi-use trail to Gilliam Drive.	$63,212

Project	Project Number	Project Description	Expenditure
Elk Grove-Florin Road Pedestrian Walkway	PT0132	Widen Elk Grove-Florin Road in front of two undeveloped parcels at 8484 Elk Grove-Florin Road. Create a safe travel way for pedestrians. Provide a continuous path of travel and connections to the existing sidewalks at either end of the project.	$107,220
Williamson Drive Sidewalk Improvements	PT0133	Construct a new sidewalk, curbs, and gutter along Williamson Drive from Elk Grove Boulevard to Baker Park.	$154,369
9750 Waterman Road Accessibility Project	PT0139	Construct a sidewalk to close a gap of discontinuous sidewalk along Waterman Road. Install drainage system to alleviate localized flooding.	$104,835
Elk Grove Boulevard Sidewalk Infill, South Side	WAC001	Install PCC sidewalk/AC path on the south side of Elk Grove Boulevard between Waterman Road and Kent Street.	$220,913
Elk Grove Boulevard Sidewalk Infill, North Side *	WAC003	Improve accessibility for persons with mobility impairments and the elderly by constructing a new sidewalk, which will close the last gap in the sidewalk along this section of Elk Grove Boulevard to be ADA compliant.	$87,258
Waterman Road Accessibility Improvements North of Muffy Court	WAC004	Construct a new sidewalk and drainage improvements to alleviate localized flooding.	$179,258
Southside Avenue Sidewalk *	WAC008	Construct improvements to create an accessible path of travel along the south side of Southside Avenue from Elk Grove-Florin Road to Jessie Baker Elementary School.	$20,780

Project	Project Number	Project Description	Expenditure
Elk Grove-Florin Road at West Camden Sidewalk Infill *	WAC008	Improve pedestrian access and safety along Elk Grove-Florin Road with construction of approximately 170 feet (curb, gutter and sidewalk). Improve drainage along the western side of the roadway from West Camden Drive to the existing improvements along the SaveMart Shopping Center.	$3,741
Laguna Creek Trail Connection at Camada Court	WTL002	Pave a 100-foot path over the existing dirt trail that connects the Laguna Creek Trail at Camada Court.	$108,719
Laguna Creek Trail - Camden North Spur*	WTL005	Construct a 600-foot trail segment from Camden Estates neighborhood to Camden Park/Lake and the existing Laguna Creek Trail. Include 2,600 feet of new bike lanes on Beckington Drive to connect the Laguna Creek Trail to the Whitehouse Creek Trail. A 100-foot extension of the Whitehouse Creek Trail is also proposed to connect it to Beckington Drive.	$40,990

** Denotes projects that are ongoing.*

8.2 MAINTENANCE

Trails in the City are jointly maintained by the Cosumnes CSD and the City.

Trails Maintenance Responsibilities

In general, the City is responsible for maintaining trail pavement while CSD is responsible for landscape maintenance along trails in the City. The following principles are used to establish shared responsibilities for the ongoing maintenance of the trails defined in the BPTMP:

- The City is responsible for maintaining the surface of all trails except those trails with concrete surfacing that exist with City park boundaries (i.e., trails within park boundaries with asphalt surfacing will be maintained by CSD).
- CSD is responsible for maintaining the landscape and performing weed abatement for all trails.

The above responsibilities are assumed unless specified otherwise in the Trails Maintenance Services contract.

Regular Trail Maintenance

Trail maintenance shall be oriented toward creating a consistent and predictable trail condition. All trails shall be on regular maintenance cycles that recognize the need for both ongoing maintenance and variable maintenance. Maintenance needs include weed abatement, pruning of vegetation for adequate clearances and sight distances, sign installation and removal, tread improvements, addressing any damage received from weather conditions, and general trail clean-up. All trail infrastructure, including irrigation and lighting systems, shall be repaired if damaged or if not working as designed. Plantings shall be replaced if dead or dying. Trails shall be maintained for continued aesthetic effect, security, and safety.

Timing of Maintenance Operations

Maintenance operations shall be timed to minimize trail user conflicts and to avoid excessive noise and other possible nuisance effects on adjacent neighbors.

Trail Stewardship

Regular maintenance of each trail shall be clearly assigned to the appropriate responsible party (e.g., City of Elk Grove, Cosumnes CSD, homeowners associations). Trails shall be evaluated regularly to ensure that their conditions remain to standard and achieve the desired goals of the City trail system. Maintenance needs can be provided for through partnership arrangements and shall be fully explored.

Maintenance of Proposed Trails

The BPTMP map does not clarify what entity will be responsible for trail construction, ownership, and/or maintenance, as this determination will be made on a case-by-case implementation basis.

8.3 IMPLEMENTATION CRITERIA AND PRIORITIES

Cyclist Population

A comprehensive bikeway system is necessary to accommodate the existing bicycling demand and to encourage increased ridership. Results of the City's survey on bicycling characteristics and preferences suggest that currently most cycling in the City is for fitness and conditioning (29 percent of those who responded said this is the type of cycling they do most), fun and recreation (23 percent), and riding with children (15 percent). As a note, the new General Plan includes substantially more employment-generating uses than the former County General Plan, which would increase opportunities for bike and pedestrian commuting in the City.

Cyclist Characteristics and Needs

A substantial variation exists in the ages, physical capabilities, and riding philosophies of cyclists currently active in the City. This variation results in differences in both the level of expertise among riders and, subsequently, the types of trips which they are willing to make. The planning, design, and implementation of the bikeway system must serve as much of this varied population as possible.

When options are available, cyclists generally choose a route which provides the best balance of the following desirable characteristics:

- Directness between the origin and destination points.
- Minimal gradients to be negotiated.
- A high quality and well-maintained riding surface.
- Lower volume of motor vehicle traffic.
- Adequate space for allowing faster traffic to safely bypass.
- Pleasant environmental riding surroundings.

For commuter purposes, the cyclist is most likely to place a significant amount of importance on the first three characteristics mentioned, because they directly affect the (human-generated) energy requirements for making a trip by bicycle. Lower volumes of motor vehicle traffic and adequate space to allow faster traffic to safely bypass are desirable for commuter travel but may be sacrificed for speed and directness. Commuter cyclists, whose expertise is usually greater, prefer the most expeditious and direct route, and are therefore more willing to share space on the roadways with motor vehicles.

Lower volumes of motor vehicle traffic and adequate space to allow faster traffic to safely bypass are necessary for neighborhood and recreational cyclists. Neighborhood and recreational cyclists are usually willing to change their routes for safety considerations, and are less willing than commuter cyclists to compete with automobile traffic, preferring instead to operate in specially designated bicycle facilities. However, all cyclists want facilities that are safe, convenient, and desirable.

Route Selection Process and Criteria

The route selection criteria used to come up with the proposed bicycle, pedestrian, and trails network in this Master Plan is based on features such as connectivity to activity centers, type of facility linkage to the existing transportation system, and geographic location of the improvement.

The Trails Committee and members of the public assisted City staff with identification of major bicycling and pedestrian destinations, key routes needed to link residents with these destinations, and vital features to consider when prioritizing BPTMP projects. The main bicycle and pedestrian routes identified through discussions with the Trails Committee or submitted by the public either at Trails Committee meetings or with the City's online bicycle survey have been added to the Proposed Bicycle and Pedestrian Network Map as planned facilities.

Desirable characteristics for the proposed network identified by the Trails Committee and public, such as safety, connectivity, and convenience, have been used to establish goals for the BPTMP and a prioritization system for implementation of the Master Plan facilities.

Prioritization

On an annual basis, as part of the Capital Improvement Plan Process, the City allocates available funding to bicycle-, pedestrian-, and trail-related projects. This allocation is based in part on the prioritization criteria outlined below, as well as on other factors. In general, projects which receive a higher priority ranking (that is, meet more of the criterion) will be assigned a higher priority for construction. However, this prioritization process is to be used as a tool to assist with project prioritization and not as the sole determinant. Other important factors include, but are not limited to, public input, funding availability, and adjacent development and/or construction projects.

- Direct access to key destinations (schools, commercial centers, employment centers, and regional destinations)
- Closure of critical gaps in the bicycle, pedestrian, and trail network
- Links to other transportation modes
- Safety
- Feasibility

Table 8.2 Prioritization Criteria outlines examples of projects given priority for each prioritization criteria.

Table 8.2. Prioritization Criteria

Prioritization Criteria	Examples of Projects Given Priority
Direct Access to Key Destinations	Links to schools, parks libraries, community centers
	Links to commercial centers
	Links to employment centers
	Links to high-density residential developments
	Links to natural areas
	Links to existing bikeways and trails
Closure of Critical Gaps	Complete gaps in Class I Bikeway network
	Complete gaps in Class II Bikeway network
	Complete gaps in Class III Bikeway network
	Complete gaps in overall bikeway and pedestrian network
	Provides a connection to a trail outside of the City
	Distance to nearest parallel bike lane or route > .75 miles
	Distance to nearest trail is > 1.5 miles
	Opens a trail where some physical improvement exists but where right-of-way has not been opened to public use.
Links to Other Transportation Modes	Links to bus stops
	Links to park-and-ride lots
	Links to transfer points
	Links to light rail
Safety	For bike lane projects (Class II) - Traffic volume on adjacent roads > 30,000 Average Daily Traffic (ADT)
	For bike lane projects (Class II) - Speed on roadway on which lane is located > 45mph
	For bike lane projects (Class II) - Posted speed on adjacent roadway is > 40 mph
	For bike route projects (Class III) - Traffic volume on adjacent road < 3000 ADT
	For bike route projects (Class III) - Posted speed on adjacent roadway < 30 mph
	Improves an existing bicycle or trail hazard (e.g., crossing obstacles, narrow trail)
	Promotes a safe route to school
	Improves the physical condition of existing bicycle or pedestrian facilities (e.g., trail resurfacing)
Feasibility	Adequate funding is available for the project

8.4 POTENTIAL FUNDING SOURCES

Introduction

With the passage of Proposition 13 in 1978, with general increases in infrastructure needs and costs, and with increased competition for funding at the state and federal levels, California municipalities have needed to develop local financing mechanisms and rely on them more heavily in order to provide public facilities, including bicycle and pedestrian projects. Therefore, the trend for financing bicycle and pedestrian projects has been for local governments to become more innovative, develop new revenue streams, and increase their share of local revenue contributions to build and maintain public facilities. For many municipalities, the General Fund continues to be a significant source of local revenue. Additionally, municipalities have developed other programs to provide dedicated and specific funds. Examples of these programs include those that capture households through special property-related taxes, developers through development fees, and consumers through retail sales taxes and user-based fees.

The emphases of the BPTMP funding program is to provide facilities for walking and biking within the City and to provide connections between the City and Sacramento and around the County. Funding for projects included in the BPTMP comes from a combination of federal grant funds, State grant funds, City fee programs, community financing districts, gas tax, and transportation sales tax. Bicycle and pedestrian facilities in new developments are expected to be paid for by developers in cooperation with the City.

Funding for the projects in the BPTMP depends on many variables. In some cases, portions of the proposed system will be completed as part of future development, road widening, and construction projects in the City. The City will continue to include bikeway projects in local traffic impact fee programs and assessment districts, and require construction of bicycle facilities as part of new development or as part of roadway projects involving widening, overlays, or other improvements. For those portions that will rely on other funding mechanisms, the following provides descriptions of federal, State, and local sources available for bicycle and pedestrian improvement projects.

Federal Sources

Moving Ahead for Progress in the 21st Century Act (MAP-21): The current primary federal source of surface transportation grant funding, MAP-21 is a performance-based, multi-modal program that addresses the many challenges facing the US transportation system. These challenges include improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery. MAP-21 replaces SAFETEA-LU.

MAP-21 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 include 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 MAP-21 will match grants at up to 80 or 90 percent, depending on the program.

Apportionment Funding for Federal-aid Highway Programs are programs under MAP-21 apportioned to each state using a formula-based system and then apportioned into the programs below:

- **National Highway Performance Program (NHPP**): A formula-funded grant for the construction of new facilities on the National Highway System, including bicycle transportation and pedestrian walkways.
- **Surface Transportation Program (STP):** A formula-funded grant for road infrastructure improvements including bicycle transportation and pedestrian walkways in accordance with 23 United States Code (USC) 217.
- **Highway Safety Improvement Program (HSIP):** A formula-funded grant for any strategy, activity, or project on a public road that is consistent with the data-driven State Strategic Highway Safety Plan (SHSP). Each SHSP is required to consider safety of all road users including pedestrians and bicyclists.
- **Congestion Mitigation and Air Quality Improvement Program (CMAQ):** A formula-funded grant for mobility projects with the potential to reduce vehicle trips and emissions.

- **Metropolitan Planning:** A formula-funded grant for any transportation investments to meet metropolitan transportation needs, as determined by local officials, including projects for investment in pedestrian walkways and bicycle transportation facilities.

Other MAP-21 funding sources include:

- **Enhanced Mobility of Seniors and Individuals with Disabilities (5310):** Funds programs to serve the special needs of transit-dependent populations beyond traditional public transportation services and ADA-complementary para-transit services. Eligible activities include sidewalk and crosswalk creation or enhancement.
- **Formula Grants for Rural Areas (5311):** Provides capital, planning, and operating assistance to states to support public transportation in rural areas with populations less than 50,000, where many residents often rely on public transit to reach their destinations. Eligible expenses include installing new bicycle infrastructure.
- **Federal Lands Access Program:** Provides funds for projects on federal lands access transportation facilities that are located on or adjacent to, or that provide access to federal lands, with eligible activities including provisions for pedestrians and bicycles.
- **Federal Lands Transportation Program (FLTP**): Funds projects that improve access within the federal estate (national forests, national parks, national wildlife refuges, national recreation areas, and other federal public lands) on transportation facilities in the national federal lands transportation inventory and owned and maintained by the federal government, with eligible activities including provisions for pedestrians and bicycles.
- **State Planning and Research Program (SP&R):** Funds statewide planning and research activities. The funds are used to establish a cooperative, continuous, and comprehensive framework for making transportation investment decisions and to carryout transportation research activities throughout the State.

- **Transportation Alternatives Program (TAP):** A program to provide for a variety of alternative transportation projects, including many that were previously eligible activities under separately funded programs. The TAP replaces the funding from pre-MAP-21 programs including Transportation Enhancements, Recreational Trails, Safe Routes to School, and several other discretionary programs, wrapping them into a single funding source. Eligible activities include construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, and conversion of abandoned railroad corridors to these uses. The **Recreational Trails Program (RTP)** and **Safe Routes to School Programs (SRSP)** are both consolidated portions of the TAP funding program.
- **Tribal Transportation Program (TTP)**: A program established in 23 USC 202 to address the transportation needs of tribal governments. Bicycle and pedestrian infrastructure, programming and education are eligible uses.
- **Urbanized Area Formula Program 5307 (UZA):** The Urbanized Area Formula Funding program (49 USC 5307) makes federal resources available to urbanized areas and to governors for transit capital and operating assistance in urbanized areas and for transportation-related planning. Under UZA, bike and pedestrian infrastructure investment, and education programs are eligible expenses.
- **Land and Water Conservation Fund:** This National Park Service program, administered at the state level by the Department of Parks and Recreation, funds acquisition or development of land and facilities that provide or support public outdoor recreation.
- **Community Development Block Grants:** The US Department of Housing and Urban Development provides funding for community-based projects. Neighborhood-based bicycle facilities that improve local transportation options or help to revitalize neighborhoods may be eligible.
- **Rivers, Trails, and Conservation Assistance Program:** The Rivers, Trails, and Conservation Assistance Program is the community assistance arm of the National Park Service. The program provides technical assistance to communities in order to preserve open space and develop trails.

See Appendix C for a detailed table outlining the potential eligibility of various types of pedestrian and bicycle projects for funding under each MAP-21 program.

State Sources

The following State sources provide funding that is applicable to bikeway funding for the City:

- State Highway Operations and Protection Program: This program is State-funded and used by Caltrans to maintain and operate state highways. Local jurisdictions are encouraged to work with Caltrans to help define projects, including bikeway projects on state highways.
- Local Transportation Fund (LTF): These block grants are awarded annually to local jurisdictions for transit and bicycle projects. Under Article 3 of the Transportation Development Act (TDA), up to 2 percent of the LTF allocation to cities and counties can be used for bicycle and pedestrian projects. Revenues to the LTP program are derived from one-quarter cents of the Statewide sales tax.
- Transportation Funds for Clean Air (formerly AB 434) funds are available for clean air transportation projects, including bicycle improvements.
- Active Transportation Program (ATP): The State ATP is a new program that consolidates existing federal and State transportation programs, including the TAP, Bicycle Transportation Account, and State Safe Routes to School, into a single program. This new consolidated program will provide grant opportunities for funding active transportation projects. Caltrans must adopt an ATP program by April 1 of every odd-numbered year. Funding for the program is subject to appropriations in the Annual Budget Act. Current ATP funding is approximately $129 million of various State and federal funds.
- Environmental Enhancement and Mitigation Program: Bicycle projects can qualify for these funds if they offset environmental impacts of new or modified transportation facilities. Local agencies and nonprofit organization can sponsor projects, which are submitted to the State Resources Agency for evaluation in June/July of each year. There is no local match required.

- State Transportation Improvement Program (STIP): STIP funds are derived from a combination of federal and State sources, including taxes and fees. These funds are divided into two programs: the Interregional Transportation Improvement Program (ITIP) (25 percent) and the Regional Transportation Improvement Plan (RTIP) _ (75 percent).
- California Infrastructure and Economic Development Bank: Infrastructure State-revolving Loan Fund (ISRF) program provides low-cost financing to public agencies for a wide variety of infrastructure projects. ISRF program funding is available in amounts ranging from $250,000 to $10,000,000, with loan terms of up to 30 years. Interest rates are set on a monthly basis. Preliminary applications are continuously accepted.
- Office of Traffic Safety: The State Office of Traffic Safety offers grants for implementation of community bicycle programs under two main categories: education and enforcement. Eligible activities may include bicycle rodeos, school presentations, public service announcements and public educational materials, and increased enforcement of safety helmet and speed laws, and visible display radar trailer deployment near schools and areas of high bicycle traffic.
- AB 2766 Subvention Program: AB 2766 Clean Air Funds are generated by a surcharge on automobile registration. Air quality management districts allocate funds to cities according to their proportion of the region's population for projects that improve air quality.
- Caltrans Disabled Rights Court Settlement: Caltrans has reached an agreement to settle a class action suit brought by Californians for Disability Rights and the California Council for the Blind. The court decision was finalized in April 2010. The agreement calls for Caltrans to spend $1.1 billion over the next 30 years, removing barriers to disabled pedestrians along State highways and at Caltrans park-and-ride facilities.
- Wildlife Conservation Board Public Access Program: The Wildlife Conservation Board provides grants for the development of facilities for public access to hunting, fishing, or other wildlife-oriented recreation. These monies can be used for trailhead development, boardwalks, among others.

- Transportation Planning Grant Program: Caltrans's Transportation Planning Grant Program has two grant programs which can aid the planning and development of bicycle and pedestrian facilities: Partnership Planning for Sustainable Transportation and Transit Planning for Sustainable Communities. The objective of these programs is to encourage or strengthen multi-agency and/or government-to-government partnerships. The projects must have a statewide and/or regional benefit.
- The Environmental Justice Program and Community-Based Transportation Planning Programs: These Caltrans programs are on a one-year hiatus during fiscal year 2014–15 only, to review and refocus grant objectives. The updated programs will return in November 2014 for fiscal year 2015–16. The programs will fund planning work which benefits community outreach and public participation, and improves sustainable planning partnerships.
- Metropolitan Transportation Improvement Program (MTIP): Many federal and State grant programs are administered by SACOG through the MTIP, the short-range transportation program for the SACOG region. The MTIP identifies projects for the maintenance, operation, and improvement of the transportation system, and the achievement of air quality standards for the metropolitan area. Inclusion of projects in the MTIP assures State and federal decision-makers that these projects are consistent with the area's long-range transportation plan, and are part of the area's overall strategy for improving mobility and air quality.
- SACOG Bicycle and Pedestrian Funding Program: These funds are available to provide facilities for walking and biking. The program is supported by federal means, and projects are selected biannually through a competitive application process. All projects and programs funded through this program must support the implementation of the Blueprint Preferred Scenario and planning principles.

Local Sources

A variety of local sources may be available for funding bikeway and pedestrian facilities. In some instances, it may be mutually beneficial for the City and a particular private developer to agree on a combination of development impact fees, fee credits, land dedication, and/or capital improvements in order to most effectively move a project forward.

- 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.
- Developer impact fees: Several different type of impact fees 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 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, fundraising 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.
- Private grant funding: There are thousands of private foundations with grant programs providing park and recreation funding. The National Recreation and Park Association

(www.nrpa.org) and the Foundation Center (www.foundationcenter.org) maintain websites with information on grant opportunities.

Funding Source Considerations

Every funding source has some degree of challenge to accessing or developing the revenue, which should be considered as part of pursuing a bicycle and pedestrian project funding strategy. Challenges include the likely need for property owner approval of increased assessments or the need to complete and submit competitive grants juxtaposed with limitations on City staff time and resources. However, in the Sacramento region, forging partnerships with regional entities including SACOG, as well as with State agencies such as Caltrans and Department of Parks and Recreation, could increase the likelihood of success with several funding sources that are administered by these agencies.

Revenue usage limitations are an additional factor to consider in pursuing a bicycle and pedestrian project funding strategy. Many revenue sources, especially grant funds, require the use of funds for capital only, and not operations and maintenance. State law also limits certain developer fees to capital expenditures. Consequently, it is challenging to fund ongoing operations and maintenance from non-general fund sources. However, some local, non-grant based revenue sources can be used for operations and maintenance.

8.5 IMPLEMENTATION STRATEGIES AND PROCEDURES

Implementation Strategies

The actual implementation of the BPTMP will occur incrementally over time through undertaking the strategies outlined in Appendix B. Among other items, these implementation strategies pertain to bicycle, pedestrian, and trail system construction, maintenance, and policies and programs that help promote safety and increase usage. Please note that these implementation strategies are not ranked or listed in order of priority.

Implementation Roles and Responsibilities

In considering implementation of the BPTMP, it is important to consider not just the construction aspect of trail development, but also trail ownership and maintenance responsibilities. For example, it is possible for a developer or the Cosumnes Community Services District to construct a trail, for the City or a homeowners association to own the trail, and for the City or another entity to maintain the trail under a contractual agreement.

The BPTMP clearly identifies the City's desired bikeway and pedestrian system to all parties, including residents, property owners, developers, City staff, and other entities that the City might collaborate with to implement the BPTMP. In adopting the BPTMP, the City is expressing its desire for an exemplary bikeway and pedestrian system and is prepared to play both a larger role in bicycle and pedestrian development in the City, and to collaboratively work with other local jurisdictions (e.g., Cosumnes CSD) and regional agencies regarding the funding, construction, ownership, and maintenance of bicycle and pedestrian facilities.

Implementation Procedures

There are various contexts within which bikeways, trails, and pedestrian facilities in the City will be implemented. As previously mentioned, the City has undergone different periods of development, and as such, existing facilities were built according to the policies contained in specific plans and/or approved development guidelines within subdivisions. In instances where specific plans and development guidelines provide direction for the development of bikeways and trails, those plans and guidelines take precedence over those standards in the BPTMP. However, given its comprehensiveness, the BPTMP provides additional policies, refinements, and actions that should be implemented within those areas covered by specific plans and approved development guidelines. Please refer to **Figure 5.1** for proposed projects to be implemented in the future. This map of proposed projects will be regularly updated as projects are completed and project descriptions become more refined. The City Council has the authority to update **Figure 5.1** and the list of proposed projects.

In general, the City has adopted an approach to building trails which keeps costs very low for taxpayers; the City approves a map showing a planned trail system and then requires developers to dedicate and build trail segments within their development project area in accordance with

the approved map in much the same way that it requires developers to fund improvements to streets and other infrastructure affected by their project.

The City is prepared to either condition trail construction as part of a development project or construct all trails identified in the BPTMP map, or will partner with the Cosumnes CSD for trail construction. Similarly, the City will maintain all new bicycle and pedestrian facilities identified in the BPTMP or will partner with the Cosumnes CSD for trail maintenance.

The City will continue to keep the community and stakeholders informed of the progress being made in implementing the BPTMP.

8.6 PROPOSED PROJECT COSTS

Project construction costs vary widely depending on the amount of planning and engineering required, site constraints, fluctuations in material costs, and the ability to obtain economies of scale relative to the size of the project. The following trail cost estimates do not include contingencies and/or cover the cost of design work. As a rough approximation for trail costs, the cost of new trail construction can range from approximately $300,000 to $530,000 per mile. Repaving can range from approximately $50,000 to $100,000 per mile. Widening is less expensive; costs can range from approximately $30,000 to $50,000 per mile.

Regarding grade-separated trail crossings, undercrossings are generally less expensive than overcrossings. Undercrossings can range from approximately $250,000 to $1 million, whereas overcrossings can range between $1.5 million to $4 million or more. Regarding at-grade crossings, crosswalks are generally inexpensive to install and traffic signals require approximately $150,000 in initial costs (Konopka 2006; Knolling 2006).

Table 8.3 provides future budgeting information for the proposed bicycle and trail projects identified in this Master Plan. **Table 8.4** provides future cost estimates for proposed pedestrian and accessibility projects.

Table 8.3. Future Bicycle and Trail Project Expenditures

Project #	Project Name	Proposed FY 13/14	Proposed FY 14/15	Proposed FY 15/16	Proposed FY 16/17	Proposed FY 17/18	Proposed FY 18/19	Proposed Future Years	Total
PT0121	Laguna Creek Trail - Camden South Spur	1,594,932	-	-	-	-	-	-	1,594,932
WTL000	Bicycle And Pedestrian Program Minor Improvements	-	30,000	-	-	-	-	-	30,000
WTL003	Ryland Educational Wetlands Trail	-	-	-	-	-	297,500	-	297,500
WTL004	Power Line Trail - Hudson Detention Basin to Charolais Way	-	175,000	360,000	-	-	-	-	535,000
WTL005	Laguna Creek Trail - Camden North Spur	277,312	500,000	-	-	-	-	-	777,312
WTL006	Trails Committee Bicycle Exercise Routes	-	-	-	67,300	-	-	-	67,300
WTL007	Civic Center Wetland Trail	164,759	-	-	-	-	-	-	164,759
WTL008	Bicycle and Pedestrian Master Plan Update	77,996	20,000	-	-	-	-	-	97,996
WTL009	Elk Grove Creek Trail - Emerald Vista to Elk Grove-Florin	-	-	-	151,555	649,433	-	-	800,988
WTL010	Elk Grove Creek Trail Main Corridor Improvements	-	-	-	-	-	-	4,300,800	4,300,800

Project #	Project Name	Proposed FY 13/14	Proposed FY 14/15	Proposed FY 15/16	Proposed FY 16/17	Proposed FY 17/18	Proposed FY 18/19	Proposed Future Years	Total
WTL011	Laguna Springs Corporate Center Area Trail Improvements	-	-	-	-	-	-	476,400	476,400
WTL012	Power Line Trail - Sheldon to Calvine	-	-	-	-	-	-	919,800	919,800
WTL013	Power Line Trail - Grant Line to Charolais Way	-	-	-	-	-	-	741,900	741,900
WTL014	Power Line Trail - Hambley Circle To Misty Springs Court	-	-	-	-	-	-	377,600	377,600
WTL015	Laguna Creek Trail - Undercrossings at Waterman Road and Bond Road	-	200,000	931,300	-	-	-	-	1,131,300
WTL016	Laguna Creek Trail - Undercrossing at State Route 99	-	-	-	-	-	-	1,244,600	1,244,600
WTL017	Laguna Creek Trail - Undercrossing at Sierra River Drive	-	-	-	-	-	-	221,800	221,800
WTL018	Laguna Creek Trail - Camden Lake to E Stockton Blvd./State Route 99.	-	-	-	-	-	-	610,300	610,300
WTL019	Laguna Creek Trail - Lewis Stein Road to Bruceville Road	-	296,800	-	-	-	-	-	296,800
WTL020	Whitehouse Creek Trail Extension	-	-	-	-	-	-	1,650,100	1,650,100

Project #	Project Name	Proposed FY 13/14	Proposed FY 14/15	Proposed FY 15/16	Proposed FY 16/17	Proposed FY 17/18	Proposed FY 18/19	Proposed Future Years	Total
WTL021	Strawberry Creek Trail Extension	-	-	-	-	-	-	1,390,200	1,390,200
WTL022	Ryland Trail Extension	-	598,600	-	-	-	-	-	598,600
WTL023	Laguna Greenbelt Extension	-	-	-	-	-	-	494,900	494,900
WTL024	Stone Lake Preserve Trail Improvements	-	-	-	-	-	-	211,100	211,100
WTL025	I-5 Corridor Bikeway	-	-	-	-	-	-	947,400	947,400
WTL026	Southeast Policy Area Trails: Western North-South Bikeway and Bridge	-	-	-	-	-	-	1,010,700	1,010,700
WTL027	Southeast Policy Area Trails: Eastern North-South Bikeway and Bridge	-	-	-	-	-	-	1,262,900	1,262,900
WTL028	Southeast Policy Area Trails: East-West Bikeway Corridor	-	-	-	-	-	-	1,048,400	1,048,400
WTLA01	Trails Committee Facilitation	26,773	-	-	-	-	-	-	26,773
	Total Expenditures	**$2,141,772**	**$1,820,400**	**$1,291,300**	**$218,855**	**$649,433**	**$297,500**	**$16,908,900**	**$23,328,160**

Note: These amounts do not include road-widening projects with bicycle and pedestrian facilities, or developer-constructed projects.

Table 8.4. Future Pedestrian and Accessibility Project Expenditures

Project #	Project Name	Actual Prior Years	Proposed FY 13/14	Proposed FY 14/15	Proposed FY 15/16	Proposed FY 16/17	Proposed FY 17/18	Proposed FY 18/19	Proposed Future Years	Total
WAC001	Elk Grove Blvd Sidewalk Infill, South Side	92,305	228,092	-	-	-	-	-	-	320,397
WAC003	Elk Grove Blvd Sidewalk Infill, North Side	36,013	446,986	234,000	-	-	-	-	-	716,999
WAC004	Waterman Rd Accessibility Improvements North of Muffy Court	175,286	49,045	-	-	-	-	-	-	224,331
WAC005	Citywide Curb Ramps 2013	109,668	54,221	-	-	-	-	-	-	163,889
WAC006	East Stockton Blvd Sidewalk Extension to Elk Grove Park	-	42,000	293,000	-	-	-	-	-	335,000
WAC007	Citywide Curb Ramps 2014	-	223,849	-	-	-	-	-	-	223,849
WAC008	Southside Avenue Sidewalk	-	41,000	236,000	-	-	-	-	-	277,000
WAC009	Elk Grove-Florin Road at West Camden Sidewalk Infill	-	186,500	33,200	-	-	-	-	-	219,700
WAC010	Citywide Curb Ramps 2015	-	-	171,954	-	-	-	-	-	171,954
WAC011	Citywide Curb Ramps 2016	-	-	-	200,000	-	-	-	-	200,000
WAC012	Citywide Curb Ramps 2017	-	-	-	-	200,000	-	-	-	200,000
WAC013	Citywide Curb Ramps 2018	-	-	-	-	-	200,000	-	-	200,000
WAC014	Citywide Curb Ramps 2019	-	-	-	-	-	-	200,000	-	200,000
WAC015	Citywide Curb Ramps 2020-25	-	-	-	-	-	-	-	1,200,000	1,200,000
WAC016	Elk-Grove Florin Road Sidewalk Infill at Elk Grove Creek (East Side)	-	-	57,600	276,000	-	-	-	-	333,600
WAC017	Sidewalk Infill 2017	-	-	-	48,000	230,000	-	-	-	278,000
WAC018	Sidewalk Infill 2018	-	-	-	-	48,000	230,000	-	-	278,000
WAC019	Sidewalk Infill 2019	-	-	-	-	-	48,000	230,000	-	278,000
WAC020	Sidewalk Infill 2020	-	-	-	-	-	-	48,000	230,000	278,000
	Total Expense	**$413,273**	**$1,271,693**	**$1,025,754**	**$524,000**	**$478,000**	**$478,000**	**$478,000**	**$1,430,000**	**$6,098,720**

Bibliography 9

Advocacy Advance. 2014. www.advocacyadvance.org.

American Association of State Highway and Transportation Officials. 2004. Guide for the Planning, Design, and Operation of Pedestrian Facilities.

———. 2012. Guide for the Development of Bicycle Facilities.

California Air Resources Board. http://www.arb.ca.gov/

California Department of Finance. 2013. Report P-1 (County): State and County Total Population Projections, 2010–2060 (5-year increments).

California Transportation Commission. 2014. Active Transportation Program (ATP) Draft Guidelines. http://www.catc.ca.gov/programs/ATP.htm.

California Walks. http://californiawalks.org/projects/map-21/.

Caltrans (California Department of Transportation). 2013. California MAP-21 Implementation Forum. http://www.dot.ca.gov/hq/transprog/map21/MAP-21%20Forums%20and%20Workshops/MAP-21%20Forum/Forum%20Agenda.pdf.

———. 2013. Highway Design Manual. Chapter 100, Topic 105 Pedestrian Facilities. Sacramento, CA.

———. 2014. Highway Design Manual. Chapter 1000 Bikeway Planning and Design. Sacramento, CA.

———. 2014. Streets and Highways Code Section 891.2. Sacramento, CA.

Dubose, Rachel. 2006. Sacramento Metropolitan Air Quality Management District. Interview by Nora De Cuir. September 28.

Elk Grove, City of. 2004. City of Elk Grove Bicycle and Pedestrian Master Plan. Elk Grove, CA.

———. 2004. Elk Grove California: Business and Quality of Life Meet Here. Elk Grove, CA.

———. 2004. Laguna Ridge Specific Plan. Elk Grove, CA.

———. 2005. City of Elk Grove Transportation Capital Improvement Program 2010-15. Elk Grove, CA.

———. 2005. Laguna Ridge Specific Plan Design Guidelines. Elk Grove, CA.

———. 2009. City of Elk Grove General Plan. Elk Grove, CA.

———. 2013. Climate Action Plan.

———. 2014. City of Elk Grove 2013-2021 Housing Element. Elk Grove, CA.

———. 2014. Elk Grove Zoning Code. Section 23.58.100.

E-Tran. 2014. http://www.e-tran.org/e-tran-park-and-ride-lots.asp

Fresno, City of. 2010. Fresno Bicycle, Pedestrian, and Trails Master Plan. Fresno, CA.

Knolling, Guy. 2006. County of Sacramento Parks Department. Interview by Rachel Pearman.

Konopka, Jim. 2006. City of Folsom. Interview by Rachel Pearman.

SACOG (Sacramento Area Council of Governments). 2013. SACOG Regional Bicycle, Pedestrian, and Trails Master Plan. Sacramento, CA.

———. 2001. Pre-Census Travel Behavior Report Analysis of the 2000 SACOG Household Travel Survey. Prepared by DKS Associated and Mark Bradley Research and Consulting. Sacramento, CA.

Saavedra, Lucia. 2014. Pedestrian and Bicycle Safety Specialist, Caltrans. Personal correspondence. May 12.

Sacramento, City of. 2003. Pedestrian Safety Guidelines. Sacramento, CA.

Sacramento, County of. 1996. East Elk Grove Specific Plan. Elk Grove, CA.

———. 2002. East Franklin Specific Plan. Elk Grove, CA.

———. 2011. Sacramento County Bicycle Master Plan. Sacramento, CA.

———. 2013. Bike Trails Rules and Regulations. http://www.regionalparks.saccounty.net/Parks/Pages/BikeTrailRulesandRegulations.aspx

Sacramento Regional Transit. 2014. Biking with RT. http://www.sacrt.com/biking.stm.

———. 2014. Regional Transit Master Plan. http://www.sacrt.com/documents/transitaction/Executive%20Summary.pdf

Scottsdale, City of. 2003. Design Standards and Policies Manual. Scottsdale, AZ.

Southern California Association of Governments. 2014. http://saferoutescalifornia.org/2014/02/06/atp_scag_worshop/

US Census Bureau. 2012. American Community Survey. City of Elk Grove.

US Department of Transportation Federal Highway Administration. 1994. National Bicycle and Walking Study: Current Planning Guidelines and Design Standards Being Used by State and Local Agencies for Bicycle and Pedestrian Facilities (Publication No. FHWA-RD-01-102). Washington DC.

———. 1999. Designing Sidewalks and Trails for Access Part I of II: Review of Existing Guidelines and Practices. Washington DC.

———. 2001. Designing Sidewalks and Trails for Access Part II of II: Best Practices Design Guide. Washington DC.

———. 2002. Pedestrian Facilities Users Guide – Providing Safety and Mobility (Publication No. FHWA-PD-93-006). Washington DC.

———. 2009. The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) Part 9 Traffic Controls for Bicycle Facilities. Washington DC.

———. 2014. MAP-21 fact sheets. http://www.fhwa.dot.gov/map21/factsheets/

Appendices

APPENDIX A: GLOSSARY

Arterial Street: Roadways designed to provide a high capacity of mobility and generally serve longer vehicle trips to, from, and within urban areas.

Average Daily Traffic (ADT) or Traffic Volume: The total number of vehicles on a given roadway segment on an average day.

Bicycle Box: A designated area at the front of a lane at a signalized intersection that places the bicyclist ahead of queuing motor vehicle traffic during the red signal phase.

Bicycle Commuter: A person making a trip by bicycle, primarily for transportation purposes, as opposed to trips primarily for physical exercise or recreation.

Bicycle Detection: A loop detector or similar device that is buried in the street pavement for triggering traffic signals when a bicycle is queuing.

Bicycle Facility: Any physical feature that serves the needs of the bicyclist, including bike lanes and paths, bicycle racks and lockers, signs, pavement markings and symbols, places to post information, lighting, and traffic controls.

Bicycle-Friendly: Man-made environments that are designed to accommodate and facilitate the use of bicycles.

Bicycle Parking, long-term: Intended to serve employees, students, residents, commuters, and others expected to park on a regular basis and for longer durations. This parking is to be provided in a secure, weather-protected manner and location, such as bike lockers, bike cages, and bike rooms. Examples of long-term bicycle parking facilities include lockers, electronic lockers, bicycle cages, stations/check-in facilities, monitored parking, and bike parking rooms within buildings.

Bicycle Parking, short-term: Intended to accommodate visitors and customers, typically consisting of bike racks where cyclists can park their bike for several hours or less. Examples of short-term bicycle parking facilities include inverted-U racks, rail-type racks, wall racks, and canopy racks.

Bicyclist/Cyclist: Any bicycle rider.

Bike Lane: A portion of a roadway designated for the preferential or exclusive use of bicyclists via striping and pavement markings.

Bike Path: A path or road designated for bicycles, not motor vehicles.

Bike Rodeo: A clinic to teach children the skills and precautions to ride a bicycle safely.

Bikeways: A general term that includes bike lanes, paths, and designated streets or routes that provide for bicycle travel.

- **Class I:** Often referred to as bike paths or multi-use trails, these facilities are completely separated rights-of-way for the exclusive use of bicycles, pedestrians, and in some cases, equestrians and other non-motorized travel such as roller skating, skateboarding, and so forth.
- **Class II:** Otherwise known as bike lanes, these facilities provide a striped lane for one-way bike travel directly on the roadway.
- **Class III:** On-street bike routes provide for shared use of the roadway by bicycles and motor vehicles.

Bus Turnout: An area alongside a roadway with a designated bus stop for buses for buses to drop off and pick up passengers.

Carpool/Vanpool: An arrangement whereby commuters travel together either by car or van.

Clearance, Lateral: The horizontal width required for safe passage around an object.

Clearance, Vertical (Overhead): The vertical height required for safe passage under an object, as in a bridge.

Climate Action Plan: A policy developed by a governing body consisting of strategies intended to reduce energy consumption and greenhouse gas emissions in a specified geographic area.

Collector Road: A low-to-moderate capacity road which serves to move traffic from local streets to arterial roads.

Colored and Textured Pavement: Colored or textured paving materials can be used to call attention to sidewalks and crossings and distinguish them as part of the pedestrian realm.

Congestion Management Plan (CMP): A plan to reduce roadway congestion, often through strategies that reduce automobile traffic and increase the use of alternative modes of transportation.

Crossings: Constructing either at-grade or grade-separated bikeway and trail crossings with roadways, creeks, or other physical obstacles.

Crosswalk: The portion of a roadway designated for pedestrian crossing, usually at an intersection and marked with painted lines.

Curb Cut/Ramp: A break in a curb allowing access from the roadway and across the sidewalk. A sloping grade allows for smooth connections between the street and sidewalk levels.

Curb Extensions/Bulb-outs: Curb extensions can be installed at intersections or mid-block to extend the curb and pedestrian space further into the roadway, helping to shorten the length of crosswalks. They serve to calm vehicular traffic by narrowing the roadway and improve visibility for pedestrians.

Flashing Warning Beacon: Flashing LED or Rectangular Rapid Flashing Beacon (RRFB) signal lights are pedestrian warning signs that can be installed overhead or post-mounted on the roadside in advance of or at a crosswalk to increase visibility of a pedestrian crossing. These are usually placed at uncontrolled or mid-block crossings.

Grade: A measure of the steepness of a roadway, bikeway or walkway, expressed in a ratio of vertical rise per horizontal distance, usually in percent.

Grade Separation: The vertical separation of conflicting travelways so that traffic crosses without interference, such as a raised sidewalk.

Greenhouse Gas (GHG): Gases that act as greenhouse gases allow sunlight to enter the earth's atmosphere freely and absorb the infrared radiation that is reflected back toward space. These include but are not limited to carbon dioxide, water vapor, and methane. Human activities, such as the burning of fossil fuels, add additional greenhouse gases to the atmosphere. An imbalance between emissions and absorption results in the continuing growth in greenhouse gases in the atmosphere and contribute to climate change.

High Visibility Crosswalk Signage and Striping: Treatments alerting drivers to a crossing location. There are many types, including plastic or epoxy materials embedded in the roadway with reflective glass beads, ladder marking design (more visible than traditional parallel line crosswalk design), and fluorescent or illuminated pedestrian warning signs placed in the center of the crosswalk or off to one side.

Jaywalking: Crossing a street illegally; includes walking on a red light, stepping out in front of a moving vehicle, or crossing outside of a crosswalk.

Local Road: A street that is primarily used to gain access to the neighboring property.

Loop Detector: A detector embedded in the roadway at an intersection that senses the passage or presence of a vehicle near the sensor and informs the traffic signal control.

Median Refuge Islands: A raised concrete island placed on a street at intersections or midblock locations to allow pedestrians a separation from motor vehicles.

Mode Share: The percentage of travelers using a particular type of transportation or number of trips using said type.

Multi-use trail: Facilities designed to accommodate pedestrians, bicyclists, and other individuals using non-motorized transportation.

Off-Street: Areas of public and private property outside the dedicated road right-of-way.

On-Street: All street or road right-of-way including curbs, gutters, and sidewalks.

Open Space: Any public or private undeveloped or predominately undeveloped land that has value now or in the future for parks and recreation purposes or for conservation of natural resources or for historic or scenic purposes.

Park-and-Ride Lots: Park-and-ride lots provide free parking for commuters. Motorists park their vehicles at the lots and meet carpoolers, vanpoolers, or public transport for the trip to work.

Pavement Markings: Painted or applied lines or legends placed on a roadway surface for guiding and regulating traffic. A standard pavement legend is the words "Bike Lane" with an arrow showing the direction of travel.

Pedestrian: Any person moving about on foot, in a wheelchair, or walking a bicycle.

Pedestrian-Activated Signal Lights: Crosswalks embedded with LED lights within the sign border to illuminate and call attention to a crossing. Embedded LED warning lights can be activated by detection or by push-button.

Pedestrian Facility: A facility provided for the benefit of pedestrian travel, including multi-use paths, walkways, sidewalks, crosswalks, grade separations, signs, signals, ramps, illumination, and benches.

Pedestrian Islands: See **Raised Crosswalk.**

Pedestrian Signal Light: A pedestrian signal is a conventional traffic control device used at controlled intersections. Pedestrian signals are often push-button activated and indicate to pedestrians when it is safe to cross an intersection by displaying a lighted sign with a "Walk" symbol (walking person) or "Do Not Walk" symbol (raised hand). Countdown signals indicate how many seconds remain to cross the street, and allow pedestrians the flexibility to speed up if the crossing time is about to expire. Beeping or chirping verbal signals are designed to help visually impaired pedestrians to safely cross an intersection.

Permeable Pavement: The use of sustainable materials to pave a roadway or sidewalk in such a way that allows for the movement of stormwater through the surface. Benefits include the reduction of and filtration of pollutants from the water.

Policy: A direction statement that guides actions for use in determining present and future decisions.

Program: A specific action, procedure, or technique that carries out plan policy.

Raised Crosswalk: Raised pedestrian islands can be placed in the center of a wide roadway with cutouts along the pedestrian path. Pedestrian, or center, islands provide pedestrians a safe place to stop at the mid-point of a roadway before crossing the remaining distance.

Retrofit: Constructing bikeways and trails to the BPTMP standard in locations where users would benefit from improvements to existing bikeways and trails (e.g., where trails are too narrow relative to usage, where site conditions could be changed to improve safety, or where bikeway and trail usage would be increased with the provision of additional amenities).

Right-of-Way: A general term denoting publicly owned property acquired for or devoted to transportation purposes.

Roadway: The paved portion of a street or highway.

Rules of the Road: The portion of a motor vehicle law that pertains to the operation of vehicular and pedestrian traffic.

Safe Routes to School: A national program to create safe, fun, and convenient opportunities for children to commute to and from school via foot or bicycle.

Separation: An intentional space or a physical barrier between a bike path and a roadway so that the bike path is not contiguous to the outer edge of the paved highway shoulder.

Sharrow: Shared road markings that assist bicyclists with lateral positioning in lanes, and to remind motorists to expect to share the space with bicyclists.

Shoulder: The portion of a highway that is contiguous to the travel lanes provided for pedestrians and bicyclists or emergency vehicles. This is often used in place of a sidewalk or bike lane in rural areas.

Sidewalk: A walkway separated from the roadway with a curb, designed for preferential or exclusive use by pedestrians.

Sight Distance: The distance a person can see along an unobstructed line of sight.

Traffic Calming: Measures intended to slow or reduce motor-vehicle traffic in order to improve the environment for residents and improve safety for pedestrians and bicyclists.

Traffic Control Devices: Signs, signals, or other fixtures placed on or adjacent to a travel-way to regulate, warn, or guide traffic.

Traffic Volume: See **Average Daily Traffic (ADT).**

Trail Amenities/Facilities: Items that improve the usability of trails, such as bike parking, shower and changing areas, transit stations, park-and-ride lots, trailheads, trail crossing, restrooms, and street furniture.

Trail Corridor: The area within which a trail tread is constructed and which also contains landscaping and any other improvements necessary to ensure the functioning of the trail.

Trail Crossings:

- **At-Grade Crossing:** Crossings that allow trails to cross a roadway or other obstacle at the same grade, in which case a trail user will need to treat the crossing as an intersection and may need to navigate the crossing by using a crosswalk or traffic control signal, or by watching for cars.
- **Grade-Separated Crossing:** A grade-separated crossing is any pedestrian, bikeway, or trail crossing that is at a different grade than the street level, usually in response to some kind of barrier such as a river or highway. Bridges and underpasses are two examples of grade-separated crossings.

Trailhead: Entrances to the trail system where a trail crosses a roadway.

Trail Staging Area: Locations near roadways providing parking, signage, and other trail amenities.

Vehicle: Any device used for transport, including vehicles that are self-propelled or powered by any means.

Walkability: For pedestrians, the ease, comfort, and safety of walking which is influenced by connectivity, accessibility, sense of safety (real and perceived), and the quality of the pedestrian environment.

Walkway: A pedestrian street, path, sidewalk, or paved shoulder built for use by pedestrians, including persons in wheelchairs.

Warning Signs: A traffic warning sign indicating a hazard ahead on the road that may not be readily apparent to a driver or bicyclist, sometimes taking the shape of an equilateral triangle. For example, a yellow bicycle crossing sign (W11-1) placed in advance of a point where an officially designated bike path or bike trail crosses a roadway.

Wayfinding Signage: A system of signs that provide consistent, clear, and user-friendly information about distances and routes to transit and key destinations for bicyclists and pedestrians.

APPENDIX B: IMPLEMENTATION STRATEGIES

Implementation Strategies
▪ Adopt a Resolution that adopts the BPTMP and shows support by the City to move toward building a continuously connected trail system through pursing the construction of trails as shown on the BPTMP map.
▪ Consistently implement all trail standards and apply guidelines for projects with trail components within the City.
▪ Continue to review all development projects within 1,000 feet of a trail segment shown on the BPTMP map for opportunities for trail implementation.
▪ Continue and establish trail safety and enforcement programs and publicity efforts. This program could include the institution of a Bicycle Patrol Officer position to help in patrolling trails, promoting safety education, and organizing with schools to build more safe routes.
▪ Continue and establish trail user safety and education programs and publicity efforts. Programs could be tailored to different venues (e.g. schools, community fairs), audiences (e.g. youth, adults, motorists, et cetera) or different topics (e.g. trail etiquette and regulations, helping kids commute to school using trails, effects of vandalism, interpretation of natural resources).
▪ Continue to coordinate all planning efforts undertaken by various City departments that relate to trail implementation.
▪ Continue providing a program through which residents can submit a request for evaluation of crosswalks or intersection improvements at specific locations. Public Works Department staff would evaluate the need for the requested crosswalks and other safety measures.
▪ Continue pursuing joint and collaborative efforts with other local and regional jurisdictions/agencies and non-profits regarding trail implementation, funding, and maintenance. Publicity initiatives, safety education programs, and demand reduction programs could also be collaboratively pursued.

Implementation Strategies
▪ Continue the implementation of Municipal Code Section 23.58.060 that allows for parking space reductions in connection with the provision of bicycle parking facilities, showers, and lockers.
▪ Continue the implementation of Municipal Code Section 23.58.100 that requires the installation of bicycle parking facilities within residential, commercial, industrial, and public development projects.
▪ Update and create new funding sources for trail construction and maintenance, including development impact fee programs, park fee programs, landscaping and lighting and other special area and City-wide financing/assessment districts, property taxes and other miscellaneous general fund revenue sources, development agreements, requirements for dedication of land for trails and/or trail construction as a condition of project development approval, and grants. Some funding sources could be pursued collaboratively with other entities.
▪ Continue the practice of including priority trail projects in the updates to the City of Elk Grove Capital Improvements Program.
▪ Continue the practice of including trail segments at the subdivision and development agreement stage of the entitlement process.
▪ Continue to dedicate staff time towards the implementation of trail projects. Allocation of staff time across all appropriate departments towards trail related activities should be determined annually as part of developing departmental budgets. Staff time is needed to staff various committees, to shepherd outside agency review of development projects and field their recommended Conditions of Approval, to attend outside agency and regional trail planning collaborative meetings, to research trail funding sources and prepare funding applications, to maintain the City's trail inventory information in GIS, to coordinate volunteer programs, to provide publicity for trail projects/activities, to develop educational materials, to be a point person for maintenance and security concerns, to provide trail security, and to provide regular trail maintenance.
▪ Continue to route development project plans that contain trails to all applicable City Departments, Committees, and Local Agencies for development project Conditions of Approval recommendations.
▪ Continue to install actuated traffic control signals at intersections where there are at at-grade trail crossings to reduce trail user delays. Adjust the timing of the traffic control signals to accommodate all trail user groups, including those with disabilities.
▪ Assess the implementation steps required to complete each trail segment, including the need for securing easements, the need for land acquisition, determine how to address site-specific constraints and trail crossings, and refine preliminary cost-estimates.
▪ Consider establishing enforcement policies of speed limits for off-street trails.

Implementation Strategies
▪ Create and continue to refine a trail maintenance program and schedule. The maintenance program could be translated into a GIS system. The program could also include a means for trail users to quickly and easily notify the City regarding trail maintenance issues, such as problems with paving/potholes/grates/drainage ditches/manhole covers, lighting, debris build-up, tree-trimming/vegetation control, vandalism, speed bump maintenance, signs, curb cuts and other transitions, paint, and bicycle parking facilities, which could help reduce maintenance response times and potentially other cost savings.
▪ Develop a map/brochure that highlights all of the existing and proposed public trails in the City, as well as their connectivity to on-street facilities and trails outside of City boundaries. Locations of destinations, trailheads, staging areas, and trail amenities, such as restrooms, should also be included. Ensure wide distribution of the map/brochure.
▪ Initiate a trail education and publicity effort oriented towards City residents and businesses to highlight trails as a special Elk Grove community feature, to help build a constituency for trail construction, and help increase trail system usage. Special emphasis should be placed on how trail design, location, and usage could contribute toward public health, environmental health, recreational experiences, watershed stewardship, and how trails can be used for transportation to provide an alternative method of getting to destinations, which would result in air quality benefits.
▪ Establish a City resident and business email notification initiative, wherein residents/businesses can indicate to the City what types of development projects they would like to be notified about, including projects with trail components.
▪ Establish programs that promote volunteer trail maintenance and stewardship, such as Adopt-A-Trail programs and Safe Routes to Schools Programs.
▪ Establish a process to ensure that the BPTMP is successfully implemented and a process by which to regularly update the BPTMP, including a procedure for updating the goals, trail standards and guidelines, and the priority project list. Ensure that the BPTMP evolves in coordination with General Plan amendments and updates. The City Council has the authority to update the BPTMP maps and the list of priority projects
▪ Establish an ongoing, annual, and dedicated trail easement acquisition, construction, operation, and maintenance budget.
▪ Identify and pursue implementation of three (3) priority grade-separated trail crossings within the City. Each site should be strategically located so as to facilitate an increase in trail usage and promote safety around school and/or park destinations.
▪ Identify and pursue implementation of three (3) priority trail staging area sites within the City. Each site should be strategically located so as to facilitate an increase in trail usage.

Implementation Strategies
▪ Include a list of required trail design information to the development project application submittal checklist. Information provided should allow staff to check for project conformance with the trail standards and guidelines contained in the BPTMP.
▪ Include detailed trail construction and maintenance provisions in development project Conditions of Approval. Conditions of Approval shall include a description trail components and address the required timing of trail construction. As a general rule, trails should be completed by the time the development is ready for occupancy unless, on a case-by-case basis, the developer has bonded for the trails or otherwise provided assurances to the satisfaction of the City.
▪ Install bicycle parking facilities at all multi-modal connections, including major bus stops and City park-and-ride lots where they are not currently provided.
▪ Undertake a needs assessment to determine if and where existing trails could be better served by amenities, such as public art, signage, drinking fountains, street furniture, and restrooms. Pursue a similar needs assessment for proposed trails so that these amenities can be incorporated into development project plans.
▪ Undertake a needs assessment to identify locations where trails could be retrofitted to increase safety. Focus could be on trails that are narrow relative to the degree of usage, those trails containing a steep slope, those trails that have less visibility due to high walls or fencing, and those trails that would benefit from clearer demarcation.
▪ Undertake the development of a trail signage program, including a needs assessment and public process for trail signage aesthetics, design types, content, and placement locations. The signage program could provide regulatory, safety-oriented, behavioral, informational, directional/wayfinding, and educational/interpretive content. The scope of work for the signage program should include the development of a consistent aesthetic, mock-up of signage content, compliance with all signage regulations and design standards, material/construction/installation details, the identification of placement locations and standards for placement locations, high and low cost estimates, and a test fabrication of the preferred signage.

APPENDIX C: MAP-21 FUNDING PROGRAM SOURCES

TABLE A.1. POTENTIAL MAP-21 FUNDING PROGRAM SOURCES FOR BICYCLE AND PEDESTRIAN PROJECTS BY TYPE OF ACTIVITY

Type of Activity	TAP	CMAQ	STP	HSIP	NHPP	FLTP	TTP	MP	UZA	5310	5311	SRTS	FLTP
Bicycle and pedestrian plan			X					X			X		
Bicycle lanes on roadway	X	X	X	X	X	X	X		X			X	X
Paved shoulders	X	X	X	X	X	X	X		X			X	X
Signed bike route	X	X	X		X	X	X		X			X	X
Shared use path/trail	X	X	X	X	X	X	X					X	X
Single track hike/bike trail	X		X										X
Spot improvement program	X	X	X	X								X	
Maps	X	X	X									X	
Bike racks on buses	X	X	X			X	X		X		X		
Bicycle parking facilities	X	X	X			X	X		X		X	X	
Bicycle share (capital and equipment costs only; operations not eligible)	X	X	X		X	X	X						X
Bicycle storage/service center	X	X	X			X	X		X		X	X	

Type of Activity	TAP	CMAQ	STP	HSIP	NHPP	FLTP	TTP	MP	UZA	5310	5311	SRTS	FLTP
Sidewalks, new or retrofit	X	X	X	X	X	X	X		X	X		X	X
Crosswalk, new or retrofit	X	X	X	X	X	X	X		X	X		X	X
Trail/highway intersection	X	X	X	X	X	X	X					X	X
Signal improvements	X	X	X	X	X	X	X					X	
Curb cuts and ramps	X	X	X	X	X	X	X		X	X		X	
Traffic calming	X		X	X		X	X					X	
Coordinator position		X										X	
Safety/education position	X		X									X	
Police patrol	X											X	
Helmet promotion			X									X	
Safety brochure/book		X	X									X	
Training		X	X								X	X	
Technical assistance	X	X	X								X	X	

KEY	
Abbreviation	**Program**
TAP	Transportation Alternatives
CMAQ	Congestion Mitigation and Air Quality Improvement
STP	Surface Transportation Program
HSIP	Highway Safety Improvement Program
NHPP	National Highway Performance Program
FLTP	Federal Lands Transportation Program
TTP	Tribal Transportation Program
MP	State/Metropolitan Planning Funds
UZA	Urbanized Area Formula Program
5310	Enhanced Mobility of Seniors and Individuals with Disabilities
5311	Formula Grants for Rural Areas, Rural Transit Assistance Program, and Public Transportation on Indian Reservations
SRTS	Safe Routes to Schools
FLH	Federal Lands Highway Program

Source: www.advocacyadvance.org

APPENDIX D: PLANT PALETTE

Botanical Name COMMON NAME	Minimum Distance to Trail: (* plant with root barrier)	Height To:	Growth:
TREES			
Calocedrus decurrens INCENSE CEDAR	5'*	75'	Slow at first, moderate after established
Cercis canadensis REDBUD	5'*	40'	Moderate to Fast
Geijera parvifolia AUSTRALIAN WILLOW	5'*	25'	Moderate

Botanical Name COMMON NAME	Minimum Distance to Trail: (* plant with root barrier)	Height To:	Growth:
Koelreuteria paniculata GOLDENRAIN TREE	5'*	20'-35'	Moderate
Lagerstroemia indica CRAPE MYRTLE	5'	25'	Slow
Umbellularia californica CALIFORNIA LAUREL	5'*	30'	Slow
Pistacia chinensis CHINESE PISTACHE	5'*	50'	Slow to Moderate
Platanus racemosa CALIFORNIA SYCAMORE	5'*	50-100'	Fast
Quercus agrifolia COAST LIVE OAK	5'*	50'	Moderate
Quercus douglasii BLUE OAK	5'*	50'	Slow to Moderate
Quercus lobata VALLEY OAK	5'*	50'	Slow to Moderate
Quercus wislizenii INTERIOR LIVE OAK	5'*	50'	Moderate
Rhus lancea AFRICAN SUMAC	5'*	25'	Slow
Schinus molle CALIF. PEPPER TREE	10'*	40'	Fast
LOW SHRUBS / GROUNDCOVERS			
Arctostaphylos 'Emerald Carpet' NCN	3'	8"-14"	Moderate
Arctostaphylos uva-ursi BEARBERRY	5'-7'	12"	Moderate

Botanical Name COMMON NAME	Minimum Distance to Trail: (* plant with root barrier)	Height To:	Growth:
Arctostaphylos uva-ursi 'Point Reyes'	5'-7'	12"	Moderate
Baccharis pilularis DWARF COYOTE BUSH	3'	8"- 24"	Moderate
Ceanothus maritimus VALLEY VIOLET CEANOTHUS	3'	To 3'	Moderate
Ceanothus concha CALIFORNIA LILAC	3'	To 3'	Moderate
Cistus salviifolius SAGELEAF ROCKROSE	3'	To 2'	Moderate
Salvia apiana	4'	To 4'	Moderate
Salvia clevelandii	4'	To 4'	Moderate
Mahonia repens CREEPING MAHONIA	2'	To 1'	Moderate
Teucreum chamaedrys WALL GERMANDER	3'	1'	Moderate to Fast
Cerastium tomentosum SNOW-IN-SUMMER	3'	1'	Moderate to Fast
Heteromeles arbutifolia TOYON	3'	2'	Moderate
Rosemarinus officinalis 'Prostratus' (and other varieties) ROSEMARY	3'	2'	Moderate

Botanical Name COMMON NAME	Minimum Distance to Trail: (* plant with root barrier)	Height To:	Growth:
PERENNIALS			
Eriognum grand rubescens RED BUCKWHEET and other buckwheats	2'	12"	Moderate
Erigeron karvinskianus SANTA BARBARA DAISY	2'	6"	Moderate to Fast
Origanum libanoticum SHOWY OREGANO	2'	2'	Moderate
GRASSES			
Carex barberae SANTA BARBARA SEDGE	2'	1' - 3'	Moderate
Elymus arenarius EUROPEAN DUNE GRASS, 'GLAUCUS'	3'	3'	Moderate
Muhlenbergia rigens DEER GRASS	4'	3'	Moderate
Calamagratis acitiflora KARL FOERSTER	3'	2' – 4'	Moderate
Festuca californica CALIFORNIA FESCUE	2'	1'	Moderate to Fast

APPENDIX E: RESOLUTION TO ADOPT BICYCLE, PEDESTRIAN, AND TRAILS MASTER PLAN

[Placeholder for final resolution]

CERTIFICATION
ELK GROVE CITY COUNCIL RESOLUTION NO. 2014-156

STATE OF CALIFORNIA)
COUNTY OF SACRAMENTO) ss
CITY OF ELK GROVE)

I, Jason Lindgren, City Clerk of the City of Elk Grove, California, do hereby certify that the foregoing resolution was duly introduced, approved, and adopted by the City Council of the City of Elk Grove at a regular meeting of said Council held on July 9, 2014 by the following vote:

AYES :	*COUNCILMEMBERS:*	*Cooper, Detrick, Hume, Trigg*
NOES:	*COUNCILMEMBERS:*	*None*
ABSTAIN :	*COUNCILMEMBERS:*	*None*
ABSENT:	*COUNCILMEMBERS:*	*Davis*

Jason Lindgren, City Clerk
City of Elk Grove, California