**** FINAL PLAN ****

Dry Creek Greenway
Regional Vision

Prepared for:

Department of Planning,

Placer County

California

Submitted by:

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1.0 EXECUTIVE SUMMARY

In January, 1996, a Concept Report for the Dry Creek Greenway was produced through a collaborative effort by representatives of Placer and Sacramento Counties; the Cities of Roseville, Rocklin, and Sacramento; the Town of Loomis, The Sacramento Area Flood Control Agency, the Trust for Public Lands, and the National Park Service[1]. This report proposed the development of an open space system through northeastern Sacramento County and southwestern Placer County following the Dry Creek floodplain from its headwaters in Miners and Secret Ravines to its mouth at Steelhead Creek, formerly known as the Natomas East Main Drainage Canal. Since the publication of that document, Sacramento County has created the Dry Creek Parkway Plan that formally established the Parkway from Steelhead Creek to the Sacramento-Placer County line. Additionally, the Ueda Parkway has been established along Steelhead Creek, linking the Dry Creek Parkway to the American River Parkway. The Dry Creek Greenway forms the final segment of this 70 mile recreational loop trail, linking the northeastern end of the Dry Creek Parkway to the Folsom Lake State Recreation Area (FLSRA). It also includes a significant network of trails along the major tributaries of the Dry Creek system. This recreational trail system will be a major amenity for the greater Sacramento metropolitan area, creating an attraction for local residents as well as visitors.

In addition to providing important recreation opportunities, the Greenway also provides benefits to wildlife and aquatic organisms through habitat preservation and enhancement, protection of water quality in the area's streams, conservation of floodplains for floodwater conveyance, and alternative transportation for cyclists, pedestrians, equestrians, and other non-motorized traffic.

1.1 The Greenway Vision

The vision for the Greenway is to create a multifunction open space that includes beneficial uses in the areas of recreation, habitat, floodwater conveyance, water quality, and others. The Greenway vision consists of the following objectives:

- Preserve and enhance riparian and aquatic habitats,
- Conserve and protect significant historic, cultural and scenic resources,
- Connect the Dry Creek Parkway to the Folsom Lake State Recreation Area,
- Provide for the management of Greenway resources,
- Provide active and passive recreation opportunities,
- Preserve floodwater conveyance capacity and reduce property damage due to flooding,
- Work with existing plans and policies,
- Secure funding to sustain and complete the Greenway,
- Function as a local and regional asset,
- Facilitate land use planning and management within the Greenway.

[1] Dry Creek Regional Greenway Concept Report

1.2 Relationship to Existing Plans

These vision statements identify those open space values that all the jurisdictions within the Greenway share so that future Greenway management will be guided by a common purpose. It is important to note that local jurisdictions already have some existing plans, policies, and ordinances that directly or indirectly address elements of the Greenway Vision. The Dry Creek Greenway Regional Vision document is not intended to duplicate or replace these adopted mechanisms. Rather it is designed to complement these planning tools by offering a comprehensive set of potential management and implementation strategies to enhance the cohesiveness of the Greenway Vision across jurisdictions.

1.3 Greenway Elements and Corridor Designations

The Dry Creek Greenway Regional Vision document describes the various open space corridors and trail elements that comprise the Greenway. Some of the elements are already reflected in existing planning documents that were prepared by the governmental entities with jurisdiction in the Greenway area. Other elements are recommended that are not currently in any existing plan but are important to making both recreation and habitat connections. Existing trails and those proposed in the Placer County Regional Bikeway Plan (including trails in the City of Rocklin), the City of Roseville Bicycle Master Plan, and the Town of Loomis Bikeway Master Plan are incorporated into the Dry Creek Greenway Regional Visions. Additional trails are recommended in areas where connections to local and regional bikeways would benefit recreational and transportation needs. Further improvements include designation of corridor types to aid in management, proposed nodes and staging areas, signage and other amenities, and habitat enhancement.

Three types of corridor designations occur within the Greenway: recreational, habitat with potential recreation, and habitat only. Recreational corridors provide Class I bikeway connections to major destinations within southwestern Placer County, such as downtown Roseville, the FLSRA, the Dry Creek Parkway, local and regional parks, and areas of Rocklin. While recreational corridors include recreational trails as a main element, other values as specified by the vision statements, such as habitat preservation and enhancement, remain high priorities as well. Trail planning in these areas must seek to meet recreational needs while protecting the environment.

Corridors classified as habitat with potential recreation should be managed to preserve and enhance habitat for birds, mammals, and fish, but also form important linkages between major regional bikeways. Trails are desirable in these corridors, but must be carefully located to limit impacts to riparian vegetation and the creek system. These corridors also occur in some areas where creeks pass through private property without designated public open space. Locating trails in these areas will not be possible without the willingness of the landowners to negotiate access. A fundamental principle of the Greenway Vision is that private property owners will not be forced to allow public access on their property. However, through education and outreach, these individuals will be provided with suggestions on how best to manage their property in a manner that is consistent with the Greenway Visions.

The objective of management in the corridors designated habitat only is for conservation and restoration of habitat, and protection of water quality. Recreational trails are not planned for these areas, which mostly occur on private land in the upper watershed. As

noted above, landowners in these areas will be encouraged to manage their lands to support the habitat and water quality values of the Greenway.

Both paved and unpaved trails are proposed or recommended within the Greenway. Paved trails are ten feet wide Class I bikeways suitable for bicycles, pedestrians and other non-motorized traffic. Unpaved trails are suitable for off-road bicycles, pedestrians, non-motorized traffic and, where permitted, equestrians. In some cases, the paved and unpaved trails may be located adjacent to each other in the same corridor.

Five types of nodes are proposed within the Greenway, ranging from small, local neighborhood access nodes without parking to large regional access facilities with parking, restrooms, signage and potentially picnic facilities or other amenities. These nodes are located where roads intersect the Greenway.

Recommendations for improving fish and wildlife habitat within the Greenway include increasing riparian canopy cover and diversity, restoring floodplains, reducing non-native invasive species, decreasing sedimentation, improving water quality, and other techniques to enhance ecological functioning while maintaining flood capacity.

1.4 Management

The Greenway Regional Vision assumes that management of public lands within the Greenway will generally be handled by the local governments and special districts that have jurisdiction within the Greenway area. The County of Placer, City of Roseville, City of Rocklin, and Town of Loomis will continue to be responsible for public safety and infrastructure in the portions of the Greenway that are within their respective boundaries, in coordination with the fire districts and Placer County Flood Control and Water Conservation District. The local jurisdictions have in some cases transferred management responsibility for private Greenway areas to homeowner associations or community services districts. There are also many privately owned properties within the Greenway that are currently, and will continue to be, managed by individual landowners according to local ordinances and regulations. The Vision also proposes that consideration be given to development of a joint powers authority or some other form of cooperative open space management agreement for the Greenway that would allow the local jurisdictions to leverage resources and provide for a consistent approach to resource and recreation management.

1.5 Public Education and Stewardship

Success of the Dry Creek Greenway Regional Vision is dependant upon stakeholder involvement, public education, and stewardship. Successful implementation of habitat, recreation, and water quality improvement are dependant upon the support of private landowners and watershed residents. Homeowners can have significant impacts on stream system health through many common actions such as improper or excessive use of pesticides and herbicides, improper disposal of chemicals used in car washing, failure to collect pet wastes, disturbance of soil leading to erosion, or excessive irrigation leading to disruption of the hydrologic flow regime. Individually, these actions may have a small, barely perceptible impact, but cumulatively, they can result in loss of habitat and wildlife, decline in fish populations, clogging of creek channels from excessive aquatic vegetation growth, reduction in water quality, instability of creek channels and other significant problems.

The overall strategy for public education and outreach must be comprehensive and ongoing if it is to be successful. Education and outreach should be coordinated with the many important programs that are already underway under the auspices of community groups, local governments, and the schools. The strategy should seek to increase public stewardship by 1) providing a diversity of educational opportunities that are suitable for all ages and abilities, 2) helping individuals understand how their behaviors impact the Greenway resources, 3) providing education on reasonable alternatives, and 4) enhancing residents understanding of both the geography and ecosystem function of Greenway. Such a comprehensive strategy will lead to benefits for the Greenway and the entire Dry Creek Watershed.

1.6 Funding

Funding for implementation, operations, and maintenance of the Dry Creek Greenway will need to come for a number of different sources. For elements of the Greenway that are already included in local plans, some general fund revenues or grants have already been secured for capital improvements, but more resources are needed. The estimated cost for new Greenway trails and associated improvements that are not already accounted for in an existing plan is $9.7 million including construction and acquisition. The ability of the local jurisdictions to individually or cooperatively attract additional grant funding for Greenway elements will be enhanced by being able to demonstrate how local projects contribute to the regional vision.

There are many potential grant funding sources due to the multifunctional benefits of the Greenway, including habitat enhancement, recreation, multi-modal transportation, and environmental education. Ongoing sources of funding for operations and maintenance are also needed, and it is expected that capital improvements will not be implemented unless such resources are available. Mechanisms that can be pursued to help address and/or reduce the need for funding include volunteerism, sponsorships, donations, development fees, and special assessments.

1.7 Implementation

Implementation of the Dry Creek Greenway trail system and associated improvements is presented in three phases. Phase one establishes the connection between the Dry Creek Parkway and the FLSRA, through the Linda Creek-Baldwin Reservoir corridor. The second phase connects the phase one trails using existing and planned trails along Miners Ravine to Douglas Boulevard and Secret Ravine to Rocklin. Phase three includes additional trail connections contained in the various existing jurisdictional plans along False Ravine, Cirby Creek, Antelope Creek, and Secret Ravine, and trail corridors recommended by this document along Strap Ravine, Secret Ravine, Antelope Creek, and Clover Valley Creek.

The Dry Creek Greenway, once implemented, will form a highly valuable natural and community resource for residents of southwestern Placer County and northeastern Sacramento County. It will help to protect and enhance high quality fish and wildlife habitat, protect water quality, preserve the capacity of the creek channels to convey floodwater, conserve historic and cultural resources, and provide excellent recreation opportunities. This Dry Creek Greenway Regional Vision will assist local agencies to work cooperatively to implement the Greenway, secure funding, and provide for consistent maintenance and management of this regional asset.

2.0 INTRODUCTION

During the last 10 years, areas of Placer County such as west Rocklin, the Granite Bay and Dry Creek-West Placer Community Planning areas in unincorporated Placer County and the Roseville Northwest, Southeast and Stoneridge Specific Plan areas have undergone rapid development. Placer County has one of the fastest growing business communities in California[2]. From 1998 to 2002, the population of Placer County has grown by 12.5%, with the fastest growing communities being Lincoln (113.3%), Rocklin (39.6%) and Roseville (27%). With a population approaching 265,000 in 2002 and projected to grow to 337,000 by 2010, Placer County's open space resources are under significant pressure from development.

As economic growth continues to occur within the County, people are attracted by the rural and suburban lifestyle offered by the region and the jobs being created by the expansion of the business sector. This increasing residential base means an increased need for the infrastructure that accompanies residential development, including schools, parks and open space.

Placer County, compared to Sacramento County, has a more rural atmosphere, with much of the western part of the County still in large lot residential and agricultural land uses. This is one of the characteristics that attract people to Placer County but it is continually being changed by the expanding population and rapid development. Preservation of the open space and natural resources within western Placer County must be a priority if residents and their children are to continue to enjoy the quality of life that initially brought many of them to the region. The importance of this preservation is recognized through the adoption of the Placer Legacy program.

Perhaps the largest and most contiguous open space system within this region is formed by Dry Creek and its tributaries. The Dry Creek watershed covers 52,500 acres in Placer County and encompasses the southeastern half of Roseville, most of Rocklin and all of Loomis. The major streams within the Dry Creek watershed include Dry Creek, Cirby Creek, Linda Creek, Strap Ravine, Miners Ravine, Secret Ravine, Antelope Creek and Clover Valley Creek. In contrast to other creeks in the Sacramento metropolitan area, this creek system has fairly well connected riparian corridors, relatively low erosion, and reasonably good salmonid habitat. Chinook salmon and steelhead trout still spawn in portions of Miners and Secret Ravines and Linda and Cirby Creeks, migrating upstream from Steelhead Creek (formerly the Northeast Main Drainage Canal) and the Sacramento River. Other Dry Creek tributaries may be used for spawning and shelter for salmonids as well, although spawning salmonids have not been observed in Clover Valley Creek, Antelope Creek or Sucker Ravine.

The open space, habitat, and potential recreation values of Dry Creek and its tributaries provided the inspiration for a group of local citizens to begin developing the concept of the Dry Creek Greenway in 1994. In 1995, the Dry Creek Greenway Regional Concept Plan was developed through the efforts of a citizens' advisory committee that included community open space advocates as well as representatives from the cities of Roseville and Rocklin, the Town of Loomis, the County of Placer. This concept plan proposed the establishment of a continuous system of trails and habitat areas following the major creeks of the Dry Creek system from the Placer County/Sacramento County boundary to

[2] Placer County web site

the headwaters of the Dry Creek watershed. In 1999 the Dry Creek Conservancy secured a grant from the Congestion Mitigation and Air Quality (CMAQ) program through the Placer County Transportation Planning Agency (PCTPA) for development of the Dry Creek Greenway Regional Vision. Work was initiated on the Regional Vision in 2002 with Placer County acting as the administering agency for the grant.

2.1 The Dry Creek Greenway Regional Vision

The vision of the Dry Creek Greenway is for a connected open space system linking the Dry Creek Parkway with Folsom Lake State Recreation Area and the uplands of the watershed. Creation of an off-street trail system along the southern streams within the Greenway will form the final link in a sixty to seventy mile recreational trail loop uniting the Folsom Lake State Recreation Area, the American River Parkway, the Ueda Parkway, the Dry Creek Parkway, and the Dry Creek Greenway. Additionally, establishment of the Greenway will help preserve and enhance the existing water quality, aquatic habitat, riparian habitat, and flood capacity of the creeks. Preservation and enhancement of riparian corridors will also help maintain wildlife migration routes from the Sacramento valley to the Sierra Nevada Mountains.

The Dry Creek Greenway Regional Vision is intended to provide a common sense of purpose for the multi-jurisdictional management of the Greenway resources. Establishment of the Greenway will provide the following benefits:

- Preservation and enhancement of riparian wildlife, salmonids and other aquatic species through protection and improvement of migration corridors, cover, feeding and breeding habitat. Preservation of wildlife and fish bring benefits to local and regional communities through ecologically-based education and recreation opportunities.
- Enhancement of historic education opportunities and recognition of cultural values through protection of historically and prehistorically significant places, such as Native American heritage sites.
- Improvement of recreation opportunities such as walking, bicycling and horseback-riding through establishment of and connection to the regional open space network. The Dry Creek Greenway and associated regional trail system provides a significant recreational opportunity that local jurisdictions and businesses can use to attract tourists to the area.
- Preservation of the existing flood capacity and improved floodplain management for the Dry Creek stream system.
- Preservation and enhancement of the water quality within Dry Creek and its tributaries.
- Increased public stewardship for the streams within the Dry Creek watershed through exposure of the public to natural areas within western Placer County.

2.2 Dry Creek Greenway Boundaries

The Dry Creek Greenway is located in western Placer County between the Placer-Sacramento County line and the City of Auburn on the north and Folsom Lake on the east (Figure 2-1). The Greenway encompasses approximately 62 miles of open space corridor. Of these 62 miles, approximately 23.5 miles of corridor have proposed

recreational trails, 12.5 additional miles may include trails if public easements can be acquired, and the remaining 26 miles are proposed to be managed for habitat without public access. The Greenway passes through the cities of Roseville, Rocklin and Loomis as well as unincorporated areas of the County in the Dry Creek-West Placer, Granite Bay and Horseshoe Bar community planning areas (Figure 2-2).

The Greenway boundaries are an aggregate of existing floodplains as identified by FEMA, valuable riparian habitat as mapped by Placer County, designated open space in the Placer County, City of Rocklin, City of Roseville and Town of Loomis General Plans, and 100 foot set-backs around perennial streams. These factors were established based upon existing regulations restricting development in these areas and an assessment of the creek buffers necessary to meet the Greenway goals. Greenway corridors are divided into three categories that dictate appropriate activities and management goals: the lower reaches, which are largely within urban areas and already have large in-holdings of public land and designated open space, integrate multi-use trails with existing habitat; the central reaches are managed for habitat with possible recreation trails if such trails are feasible; and the upper reaches, which are largely surrounded by private property, are managed for habitat only, with no public access. Figure 2-3 presents the conceptual Greenway plan that shows these corridor types, suggested staging area nodes, and the existing bikeway network.

2.3 Purpose of the Dry Creek Greenway Regional Vision

The purpose of the Dry Creek Greenway Regional Vision is to encourage the conservation of the lands within the Greenway as a permanent connected open space system, to aid in drafting specific plans and development agreements that will be sensitive to the Greenway as development occurs adjacent to the creek, to provide guidance to homeowners interested in environmental management of their properties, to identify and prioritize corridors for possible future public acquisition, to identify consistent standards for Greenway elements, and to present a management framework for multi-jurisdictional implementation and long-term maintenance of the Greenway.

2.3.1 Coordination with Local Jurisdictions

The Greenway passes through several local jurisdictions, specifically the Town of Loomis, the City of Rocklin, the City of Roseville, and the County of Placer. Each of these entities has developed General Plans, community plans, specific plans, and ordinances that reflect local values, issues, availability of resources, and land use priorities. The Dry Creek Greenway Regional Vision is not intended to replace or nullify any of these resource and land use management tools. Instead, it is intended to provide a common framework within which each of the local jurisdictions may work collaboratively to accomplish the regional protection and enhancement of Greenway resource in a manner that is responsive to the local community needs and priorities. The manner and timing with which the Greenway vision will be accomplished will vary by jurisdiction according to factors such as the availability of funding, staffing, and access constraints.

The Regional Vision also includes a number of potential projects for which funding could be sought by local jurisdictions either individually or collectively. Because these potential projects enhance the value of the Greenway, they provide both local and regional value and will be proportionally more attractive to funding sources.

2.3.2 Coordination with Private Property Interests

The Dry Creek Greenway Regional Vision stresses the concept of willing landowner participation. It is not the intent of the Regional Vision to recommend a trail through private property in which the land owner is unwilling for this to happen; rather, it identifies desired trail connections and potential trail routes. It is left until the implementation phase of the Greenway to negotiate with individual land owners to determine if the suggested routes are feasible, and if these alignments do not work, to reroute the trail using local streets where possible.

2.4 Development of the Dry Creek Greenway Regional Vision

The Dry Creek Greenway Regional Vision was developed in collaboration with representatives from the Cities of Roseville and Rocklin, the Town of Loomis, the County of Placer, and participants from local open space, landowner, and trails advocacy groups. A Project Oversight Team included participants from the four local governments, as well as Placer County Transportation Agency, and the Placer County Flood Control and Water Conservation District. Team members are listed in Table 2-1. The Project Oversight Team members provided general review of the vision development process and acted as liaisons to the effort for their jurisdiction or agency.

Table 2-1 Dry Creek Greenway Project Oversight Team

Name	Agency
Kent Foster	City of Rocklin Public Works
Lisa Ferrari	City of Roseville Public Works Transportation Division
Warren Tellefson	Placer County Facility Services
Brian Keating	Placer County Flood Control and Water Conservation District
Vance Kimbrell	Placer County Parks
Christopher Schmidt	Placer County Planning
Mark Rideout	Placer County Property Management
Tom Brinkman	Placer County Transportation
Stan Tidman	Placer County Transportation Planning Agency
Kathy Kerdus	Town of Loomis

A Public Planning Team was also convened for the purpose of providing detailed suggestions, review, and critique of the vision elements as they evolved. This group included citizens representing a variety of Greenway interests, as well as some of the members of the Oversight Team. The Public Planning Team met regularly and worked diligently to achieve consensus on many difficult issues. Public Planning Team members are listed in Table 2-2.

Four public workshops were also held as the Greenway Vision was under development. Two workshops were conducted in early June, 2003 to present the Greenway concept and to learn more about public interests, concerns, and priorities. One workshop was held in Rocklin and the other in Granite Bay. Once a draft Greenway vision was developed in mid-August, 2003 two additional public meetings were held to present the vision and get feedback on proposed trail alignment, land use designations, and priorities. These events were held in Granite Bay and Roseville. In addition, all meeting

agendas, minutes, and the draft Vision document were made available to the public through the project web site at www.foothill.com/greenway.

Table 2-2 Dry Creek Greenway Public Planning Team

Name	Agency
Cathy Haagen-Smit	Bicycle Advocate
Peggy Peterson	Granite Bay Resident
Sharon Roseme	Loomis Basin Horsemen's Association
Sandy Harris	Granite Bay Homeowners Association
Stephanie Austin-Goodman	Friends and Lovers of Miners Ravine
Marilyn Jasper	Sierra Club
George Brown	West Placer Municipal Advisory Council
Noe Fierros	Placer County Planning Commissioner, District 1
John Costa	Building Industry Association
Jeff Darlington	Placer Land Trust
Ed Pandolfino	Sierra Foothills Audubon Society
Ernie McPherson	Roseville Coalition of Neighborhood Associations
Lisa Ferrari	City of Roseville Public Works Transportation Division
David Siegel	Office of Environmental Health/Rocklin Resident
Mike Wixon	City of Roseville Public Works Transportation Division
Vance Kimbrell	Placer County Parks
Kent Foster	City of Rocklin Public Works

Separate meetings were also held with representatives from the County of Placer, the Town of Loomis, the City of Roseville, and the City of Rocklin to review their specific concerns and issues related to the consistency of the Greenway Regional Vision with their local planning and creek management practices. The final Dry Creek Greenway Regional Vision is a product of the input and guidance received from all of these diverse sources.

2.5 Organization of the Dry Creek Greenway Regional Vision

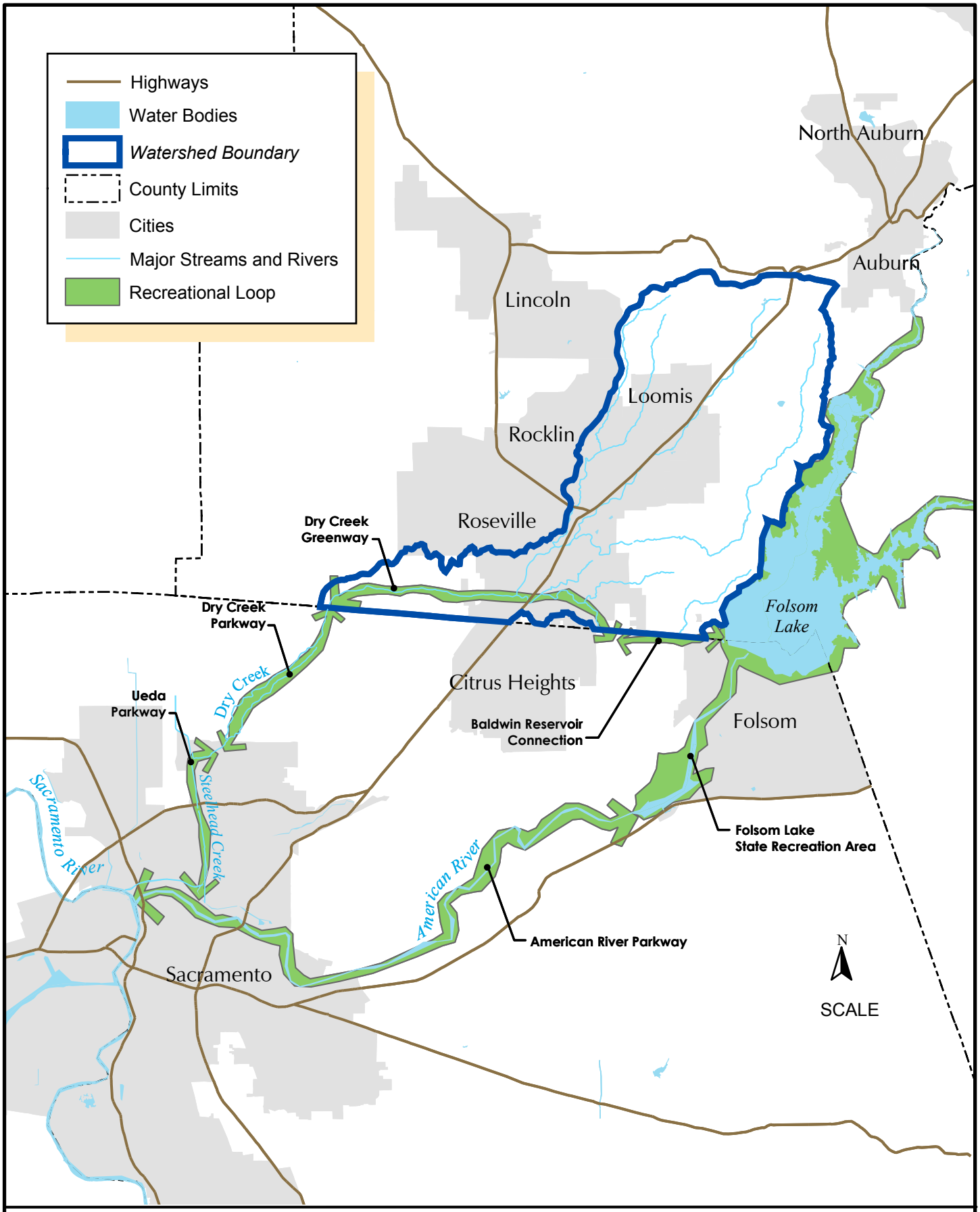
This document is organized into ten chapters. The Executive Summary is Chapter 1, and this introduction is the second chapter. The third chapter describes the existing conditions within the watershed, including geographic factors such as hydrography, floodplains, topography and soils; political/economic factors such as jurisdictions and population; land use factors such as recreation resources and environmental factors such as vegetation and sensitive species.

The fourth chapter lists the ten Vision Statements that provide the framework for the Regional Vision. The fifth chapter provides a list of potential Greenway implementation

strategies that may be used, at the discretion of local communities having jurisdiction over some portion of the Greenway, to supplement their existing policies and programs.

The proposed Greenway improvements are described in Chapter six. This includes further discussion on corridor types, trails, nodes, phasing, and restoration priorities. The seventh Chapter outlines the management strategy for the Greenway, including short and long-term maintenance, Greenway rules and enforcement. The role of education and stewardship are the focus of Chapter eight.

The final two chapters address funding. Chapter nine presents an estimate of the costs for implementing and managing the Greenway. Costs are divided into three phases depending upon the priority of the trail connections. Funding strategies and sources are discussed in the final chapter.



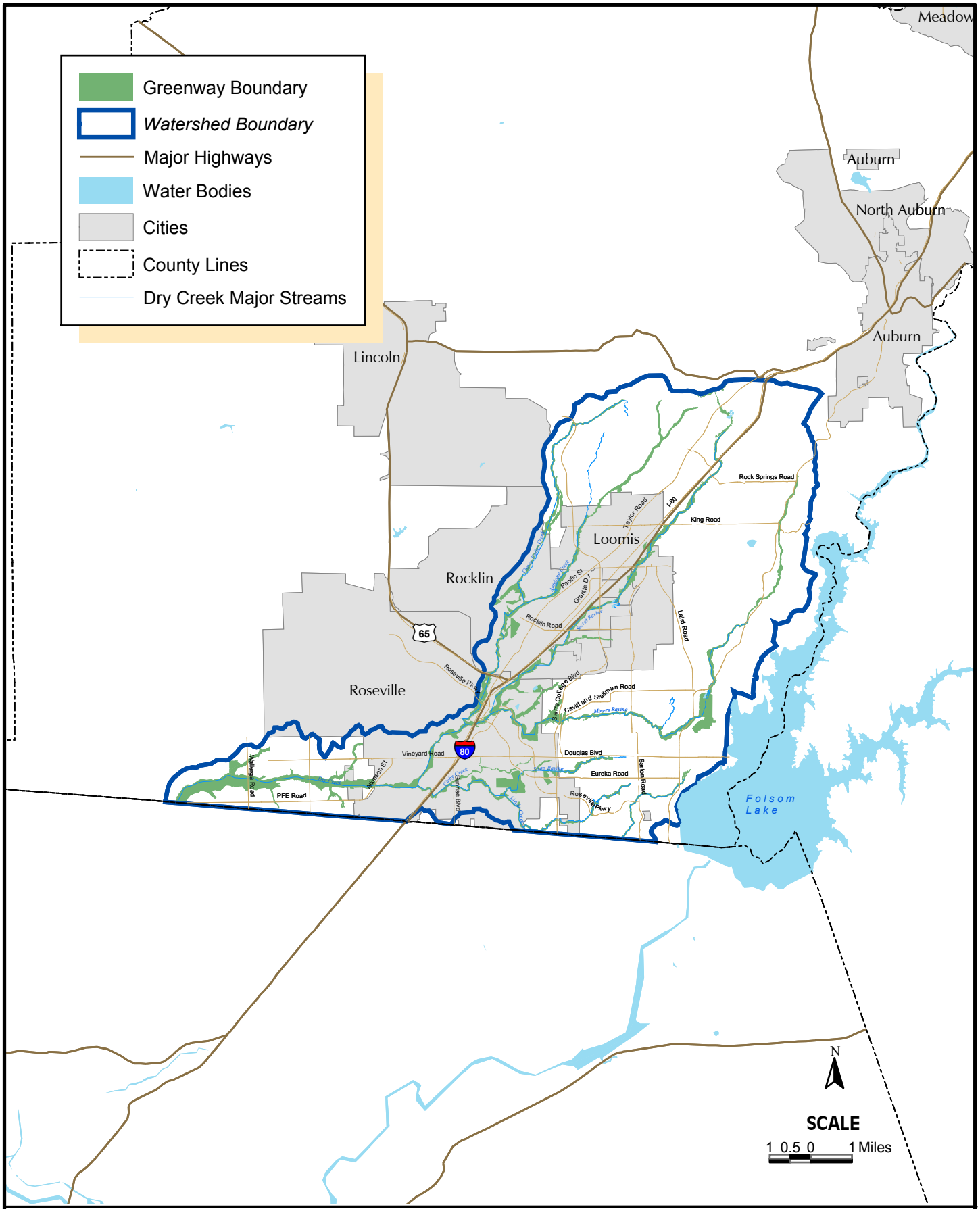
Dry Creek Greenway Location

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 2-1

1-1 Location.mxd



Dry Creek Greenway Boundaries

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 2-2

I-2 Greenway boundary.mxd

Dry Creek Watershed Boundary

Local Streets

Proposed Nodes

- A - Neighborhood Node, no parking
- B - Small Community Node, parking
- C - Large Community Node, potential equestrian
- D - Regional Node, parking, facilities
- E - Park Node

Existing Parks and Open Space[4]

City Jurisdictions

Trails

- Greenway Recommended Equestrian Trail
- Greenway Recommended Paved Trail
- Class 1 Existing[1,2,3,6]
- Class 1 Proposed[1,2,3,6]
- Class 2 Proposed[1,2,3,6]
- Class 2 Existing[1,2,3,6]
- Class 3 Proposed[1,2,3,6]
- Class 3 Existing[1,2,3,6]
- Multipurpose Proposed[1]
- Multipurpose Existing[1,5]

Greenway Corridors

- Recreation Use
- Habitat with Potential Rec Use
- Habitat Only

NOTES

1 Placer County (Regional Bikeway Plan, AutoCAD data and Dept. of Facilities Services updates)

2 City of Roseville Bikeway Master Plan

3 Town of Loomis Bikeway Master Plan

4 Placer County and City of Roseville Parcel Data

5 Existing multipurpose trails with no connections are not shown.

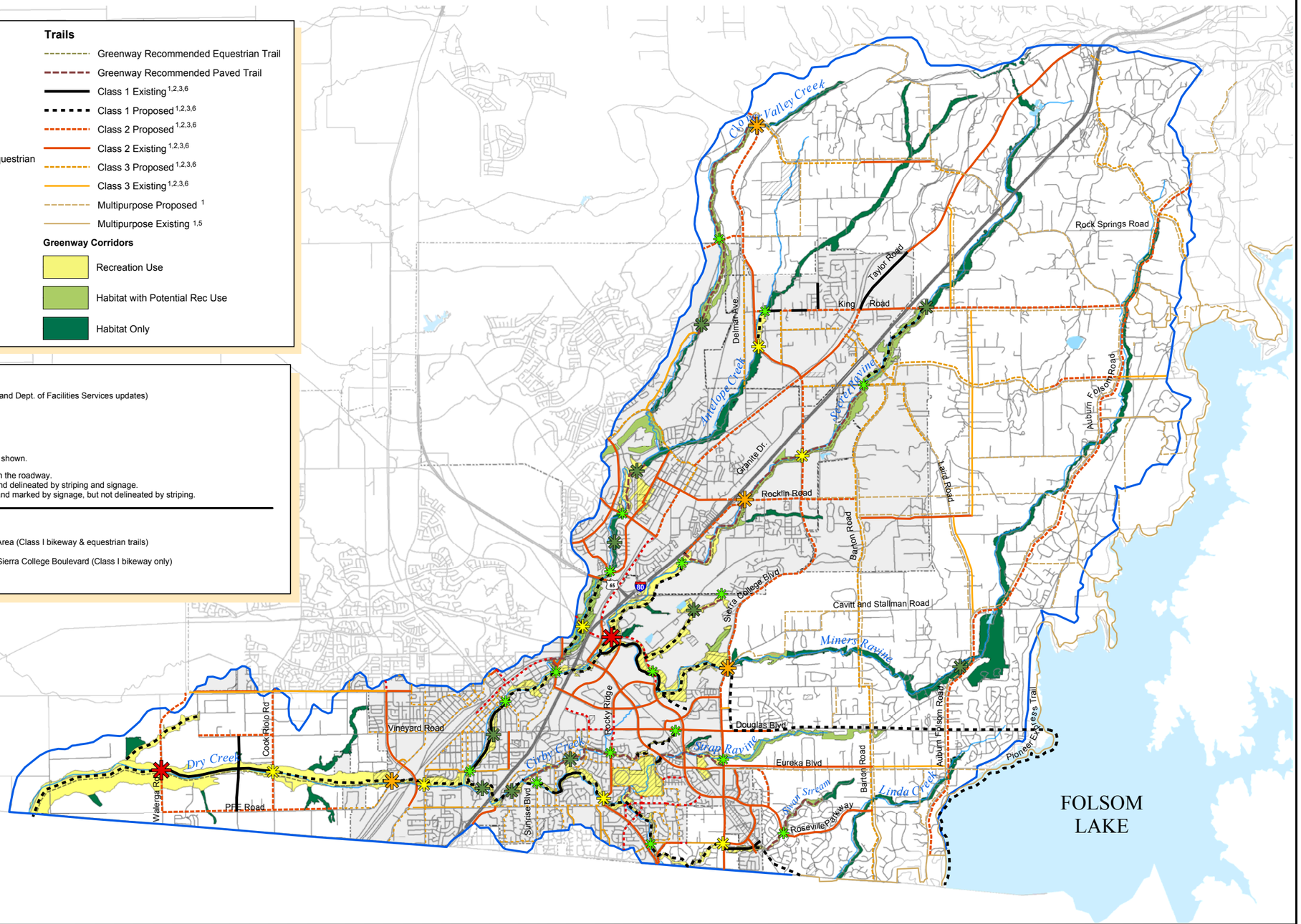
6 Class I trails are paved routes physically separated from the roadway.
Class II trails are paved routes adjoining the roadway and delineated by striping and signage.
Class III trails are paved routes adjoining the roadway and marked by signage, but not delineated by striping.

PHASES

I - Dry Creek Parkway to Folsom Lake State Recreation Area (Class I bikeway & equestrian trails)

II - Secret Ravine to China Garden Rd, Miners Ravine to Sierra College Boulevard (Class I bikeway only)

III- All others.



DRY CREEK GREENWAY CONCEPT PLAN

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SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 2-3

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3.0 EXISTING CONDITIONS

3.1 Hydrography

The Dry Creek Watershed is composed of eight named streams as follows: Dry Creek, Clover Valley Creek, Antelope Creek, Secret Ravine, Miners Ravine, Cirby Creek, Linda Creek and Strap Ravine (Figure 3-1). Dry Creek is formed by the confluence of Secret Ravine and Antelope Creek near Sunrise Boulevard and Interstate 80. Clover Valley and Antelope Creeks drain the northwest portion of the watershed. Secret Ravine drains the central portion. Miners Ravine drains the south Central and Eastern portion, and Linda and Cirby Creeks comprise the southeastern subbasins. Strap Ravine is a small tributary to Linda Creek.

Miners Ravine, Secret Ravine, Antelope Creek and Dry Creek are perennial streams, flowing year-round. Clover Valley Creek, Linda Creek, Cirby Creek, and Strap Ravine were noted as intermittent in 1997[3], although a recent report listed these tributaries as perennial[4]. Maximum mean discharge in Dry Creek measured at the Vernon Street gauging station was 375 cfs and occurred in February. Yearly minimums were less than 25 cfs and occurred between the months of April and September. The existing 100-year peak flow is 14,800 cfs[5]. Most of the flow arises from precipitation, with summertime flow augmented by irrigation and treated discharges from the City of Placer County Sewer Maintenance District No. 3's Wastewater Treatment Facility (WWTF) on Miners Ravine, the City of Roseville's Regional Wastewater Treatment Facility on Dry Creek, and Roseville's Water Treatment Facility (WTF) on Linda Creek. Snowmelt has a less than significant contribution to the total runoff in these streams, with snow events at the higher elevations in the watershed being infrequent and melting rapid.

The Dry Creek watershed is approximately 65,000 acres, with the portion of the watershed that falls within the study area of Placer County approximately 52,500 acres. It is comprised of six major sub-basins corresponding to the major creeks as shown in Figure 3-2. Table 3-1 lists the approximate sizes of the sub-basins.

Table 3-1 Dry Creek Watershed Sub-basins

Clover Valley Creek	2,300 acres
Antelope Creek (includes Clover Valley Creek)	11,200 acres
Secret Ravine	12,600 acres
Miners Ravine	12,500 acres
Cirby Creek (includes Linda Creek)	12,600 acres

[3] Bishop, 1997.

[4] Foothill Associates, 2003.

[5] Ibid.

Linda Creek (includes Strap Ravine)	7,400 acres

The profiles for the major streams are shown in Figure 3-3. This map includes the major streams and some of the ephemeral and intermittent drainages[6]. The coarseness of the data used to create these profiles limits the detail of the observations that can be made from them; however, general characteristics of these creeks can be deduced.

The profile of Secret Ravine, which has the steepest headwaters, shows the average slope to be up to three percent in the headwater section. This generally corresponds, in a minimally disturbed system, to a stream composed primarily of riffle and pool habitat with a boulder, cobble and gravel streambed. In the lower reaches, Secret Ravine adopts a gentler profile of less than one percent. In this region, stream morphology is dominated by a meandering channel with a gravel and silt streambed. The headwaters of Secret Ravine are the highest of the Dry Creek tributaries, and the other streams in the watershed exhibit behavior that more closely follows that of the lower reaches of Secret Ravine.

Downstream of the confluence of Secret Ravine and Miners Ravine, the valley is considerably flatter. The average gradient for Dry Creek is approximately 0.2 percent. In general, as a stream moves from steeper headwaters to a flatter valley floor, stream discharge, channel width and channel depth increase and bed material grain size, mean flow velocity and slope decrease[7]. The Dry Creek watershed exhibits these characteristics, with Dry Creek and the lower reaches of Secret Ravine, Miners Ravine and Antelope Creek having finer sediments, wider and deeper channels and lower flow velocities than the headwaters.

3.2 Transportation

The dominant form of transportation in the watershed is the automobile. Interstate 80 bisects the watershed following Secret Ravine for much of that creek's length (Figure 3-4). This highway has bridges over Cirby Creek, Dry Creek, and the headwaters of Secret Ravine. The other major highway in the watershed is Highway 65 which provides access to newly developed commercial areas in north Roseville and southwest Rocklin. This four lane highway crosses Antelope Creek near the Roseville/Rocklin City limits.

Highways, arterials, major roads and railroads that cross Dry Creek and its tributaries are listed in Table 3-2[8].

[6] The charts represent the stream profiles, graphing vertical feet above mean sea level (msl) vs. horizontal feet from the headwaters. The streams were generated using the USGS Basins hydrologic analysis software from the digital elevation model (DEM) for the region. The Basins software locates streams at the bottom of the drainages as dictated by the DEM, rather than relying on a separate streams datalayer that may or may not align with the elevation model.

[7] Stream Corridor Restoration. 1998.

[8] Minor road crossings are omitted from this table, but are numerous as is shown in Figure 3-16. These crossings also form barriers to fish migration as well as have the potential for impacting water quality and riparian habitat.

Table 3-2 Dry Creek Greenway Major Road Crossings

Dry Creek	Walerga Road, Cook Riolo Road, Southern Pacific Railroad, Douglas Blvd, Vernon Street, Atkinson Street.
Cirby Creek	I-80, Sunrise Boulevard, Rocky Ridge, Douglas Boulevard, Lead Hill Road, Eureka Boulevard.
Linda Creek	Sunrise Boulevard, Rocky Ridge, Old Auburn Road, Sierra College Boulevard, Roseville Parkway, Barton Road.
Strap Ravine	Eureka Boulevard, Roseville Parkway, Sierra College Boulevard,
Antelope Creek	Southern Pacific Railroad, Atlantic Street, Roseville Parkway, Highway 65, Sunset Boulevard, Midas Avenue, Delmar Avenue, Sierra College Boulevard, King Road, English Colony Way.
Clover Valley Creek	Midas Avenue, Sierra College Boulevard, Southern Pacific Railroad.
Miners Ravine	Roseville Parkway, Sierra College Boulevard, Barton Road, Auburn Folsom Road, Cavitt and Stallman Road, Horseshoe Bar Road, King Road, Rock Springs Road, Newcastle Road.

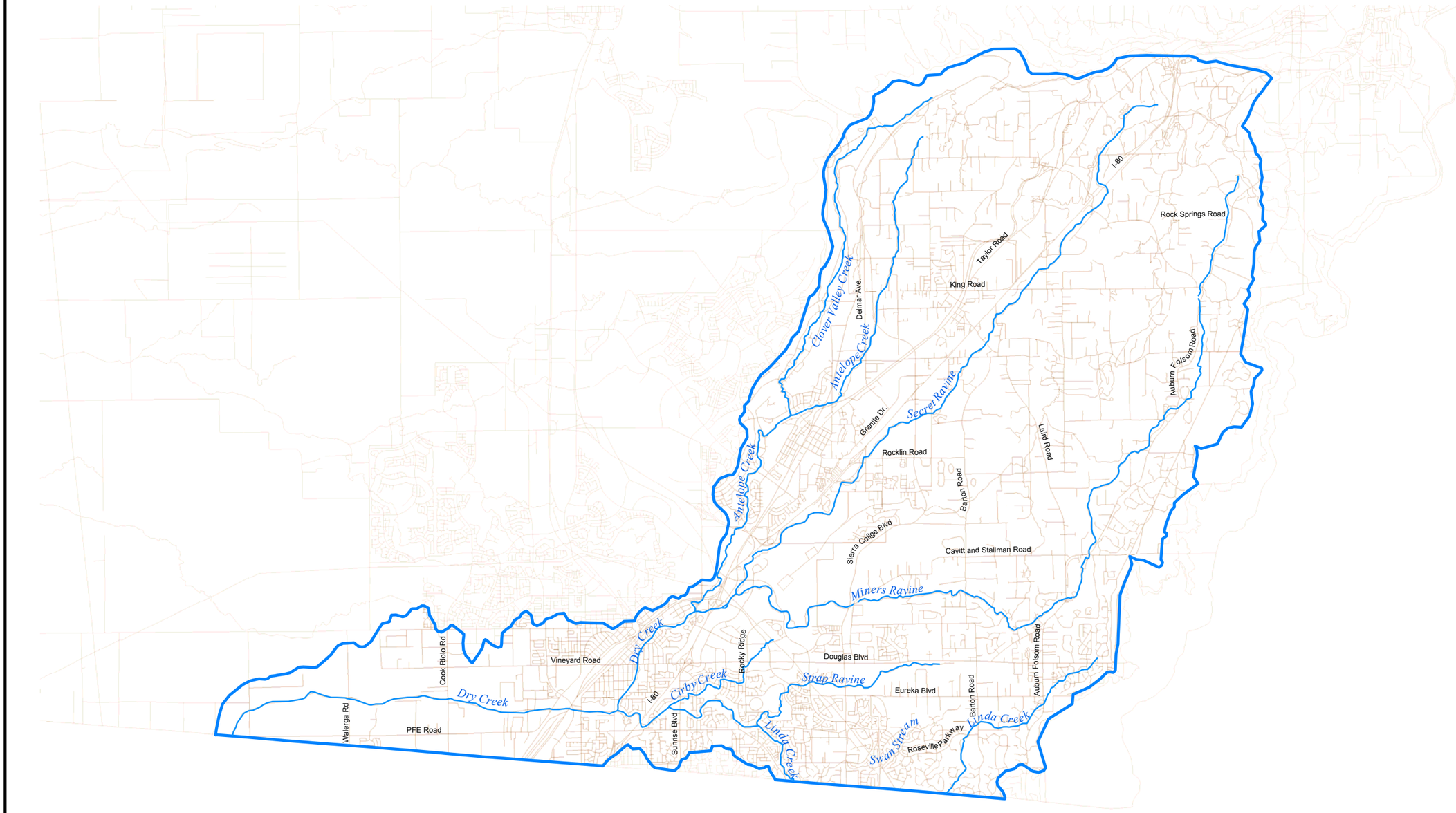
Secret Ravine	Roseville Parkway, Rocklin Road, Sierra College Boulevard, Brace Road, Horseshoe Bar Road, King Road, Penryn Road, Rock Springs Road, I-80 (tributary to headwaters).

These crossings must be considered in comprehensive planning for the Greenway because of their impacts on wildlife and aquatic habitat, conveyance of floodwater, and water quality. Table 3-3 lists some of the potential impacts of bridges on stream systems.

Table 3-3 Potential Impacts of Bridges on Stream Systems

Habitat	Danger to wildlife crossing roads from vehicular traffic, Degraded fish habitat due to impacts to water quality of road runoff, Disruption of migratory corridor, Potential fishing access point where fish are more easily caught (due to decreased visibility of the angler), Potential barrier to fish migration due to in-channel structures to limit erosion below bridges, Sediment accumulation, Prevention of natural meandering.
Water quality	Degraded water quality due to road runoff, Potential access point for trash dumping into stream system, Increased chance of homeless camps which often results in increased contamination due to feces and cleaning supplies.
Flood conveyance	Potential barrier to floodwaters causing greater chance of upstream flooding.

Major road crossings present an opportunity for recreation, in that they provide access points to the trail system along the creek and the potential for locating public parks, staging areas and other amenities in a location where people can enjoy the natural open space.



Source: US EPA reach file 3, Basins 3.0 dataset,

HYDROGRAPHY

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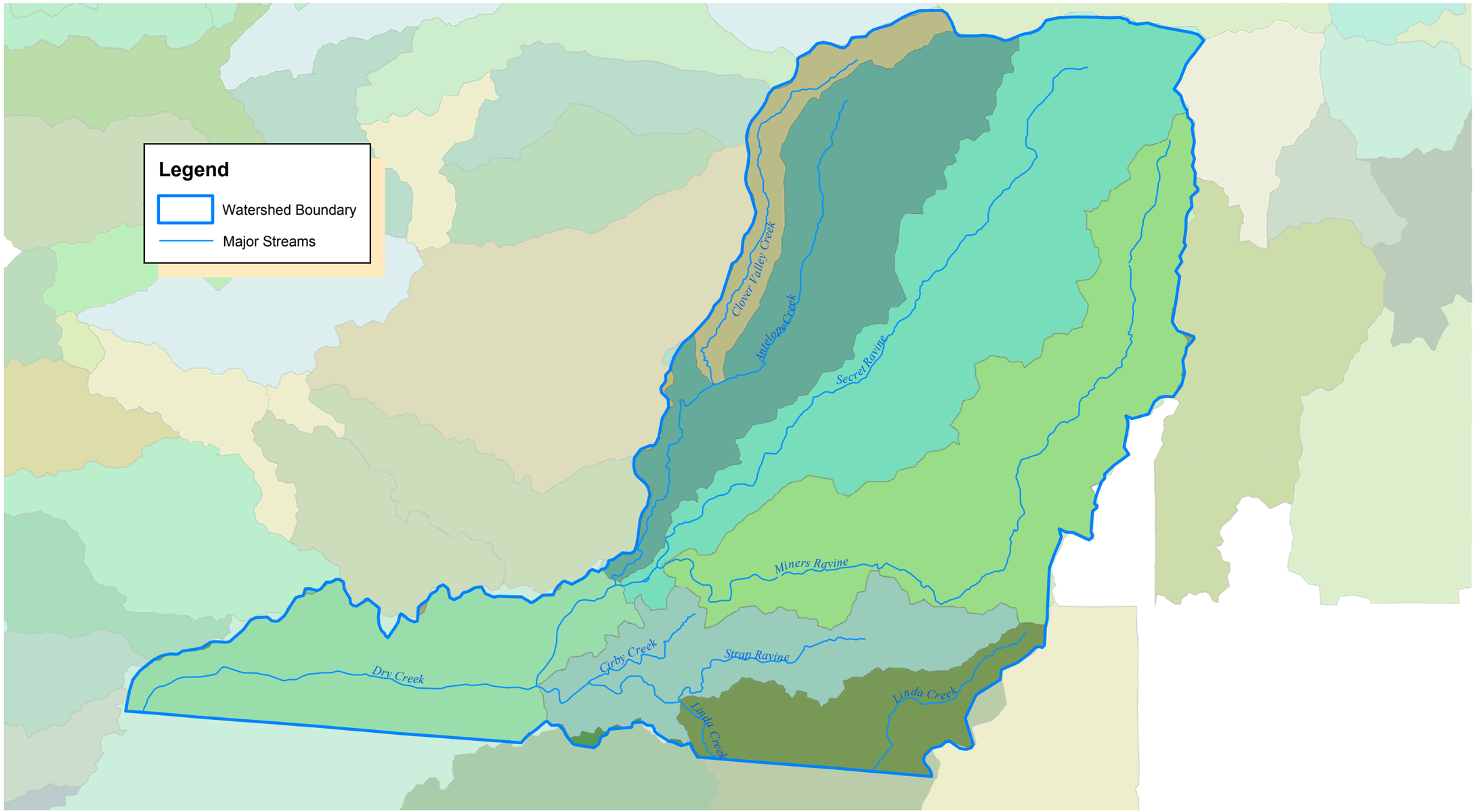
N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-1

2-1 streams.mxd



Source: US EPA reach file 3, Basins 3.0 dataset

SUB-BASINS

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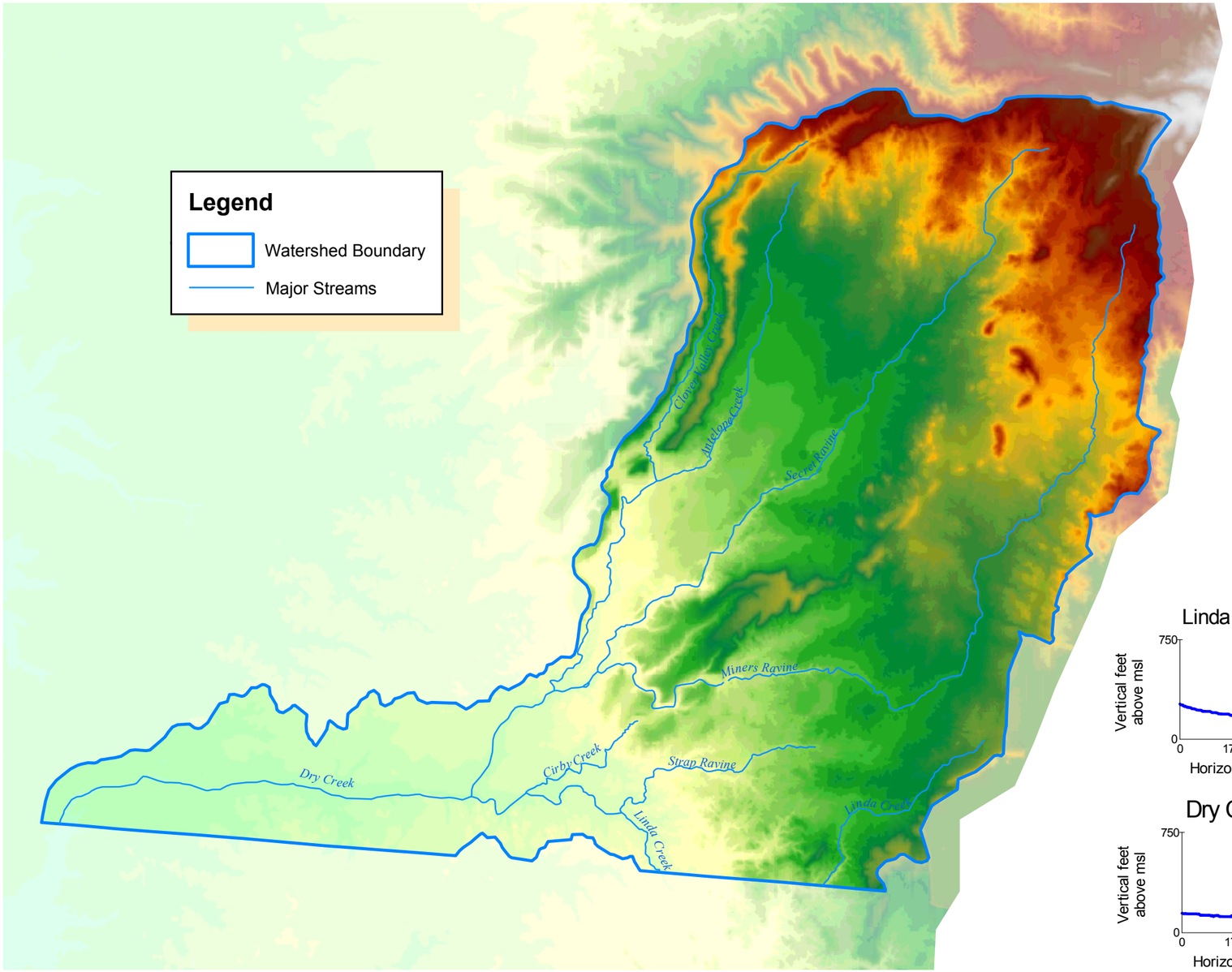
N

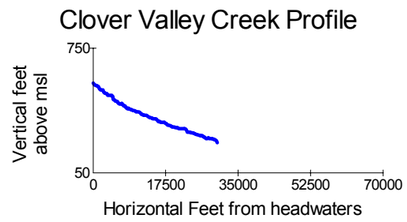
SCALE 1 0.5 0 1 2 Miles

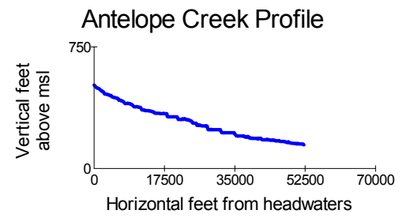
DRY CREEK GREENWAY REGIONAL VISION

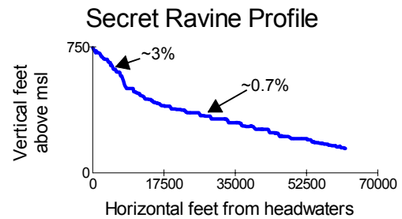
FIGURE 3-2

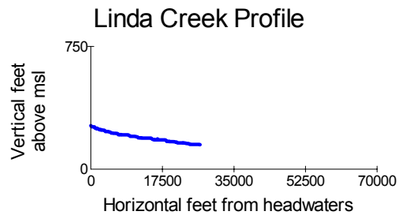
2-2 subbasins.mxd

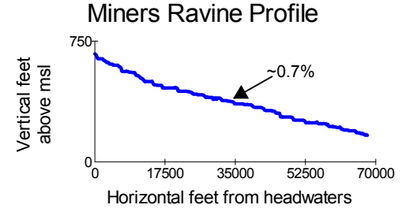


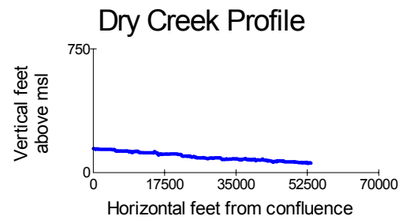


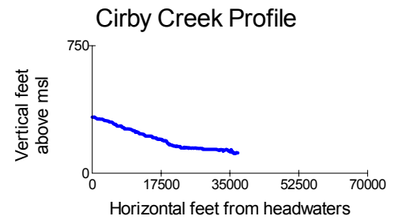












Source: US EPA reach file 3, Basins 3.0 dataset, USGS 1:24K Digital Elevation data

STREAM PROFILES

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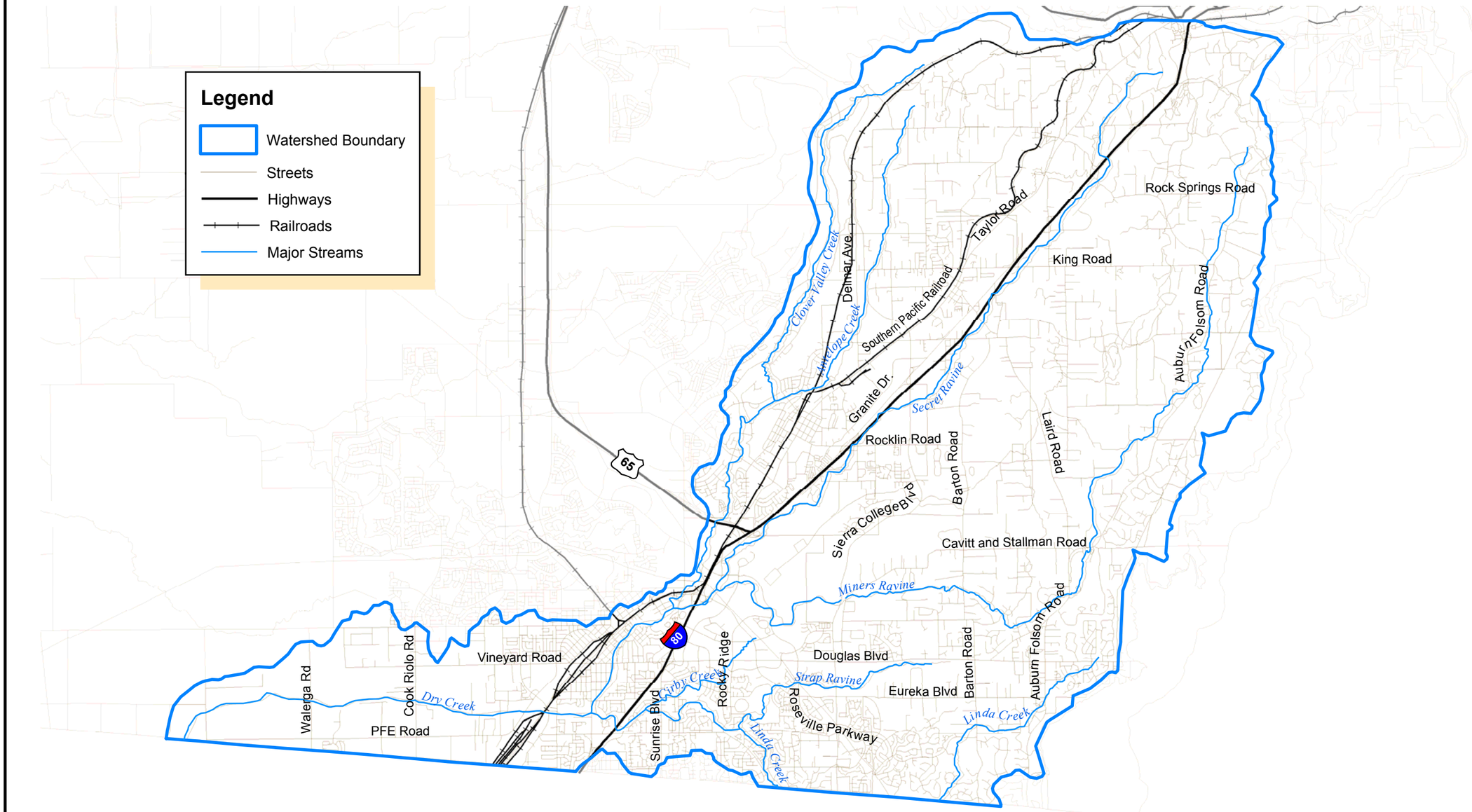
N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-3

2-3 profiles.mxd



Source: 1995 & 2001 Census data tiger line files

TRANSPORTATION

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N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-4

2-4 transportation.mxd

The Union Pacific Railroad has several active lines that transect the watershed from southwest to northeast. A major yard is located along Dry Creek near downtown Roseville on both sides of the creek where the railroad crosses the stream. This yard is a significant obstacle to the Greenway corridor and will require special consideration in routing of bikeways. Water quality issues should also be considered in planning for habitat restoration in this area.

3.3 Topography

The Dry Creek drainage basin runs primarily east to west. The headwaters lie in the foothills of the Sierra Nevada mountain range in Placer County, California, and Dry creek empties into Steelhead Creek, formerly the Natomas East Main Drainage Canal (NEMDC). The watershed is defined by a north-south ridge separating Miners Ravine and Linda Creek from Folsom Lake Reservoir to the east and a northeast-southwest tending ridge separating Antelope and Clover Valley Creeks from the Pleasant Grove and Curry Creek watersheds to the west (Figure 3-5). A ridge within the watershed splits the basin down the middle into two distinct geographic subbasins: the northern most containing Clover Valley Creek, Antelope Creek and Secret Ravine, and the southern containing Miner's Ravine, Cirby Creek, Linda Creek and Strap Ravine. Miner's ravine actually splits the ridge on its lower slopes, joining Secret Ravine rather than Cirby and Linda Creeks, thus the subbasins are not hydrologic units, but are geographically separated.

Clover Valley Creek, Antelope Creek, Secret Ravine and Miners Ravine traverse similar topography, with headwaters in the upper elevations of the watershed and mouths in the broader and flatter valley. These streams have generally steeper average profiles than Dry Creek, Linda Creek, Cirby Creek and Strap Ravine, which lie mostly within the valley floor.

Elevation is maximum near the headwaters of Secret Ravine, at approximately 1,230 feet, and lowest at the mouth of Dry Creek. At the downstream study area boundary, where Dry Creek crosses the Placer-Sacramento County lines, elevation is approximately 70 feet.

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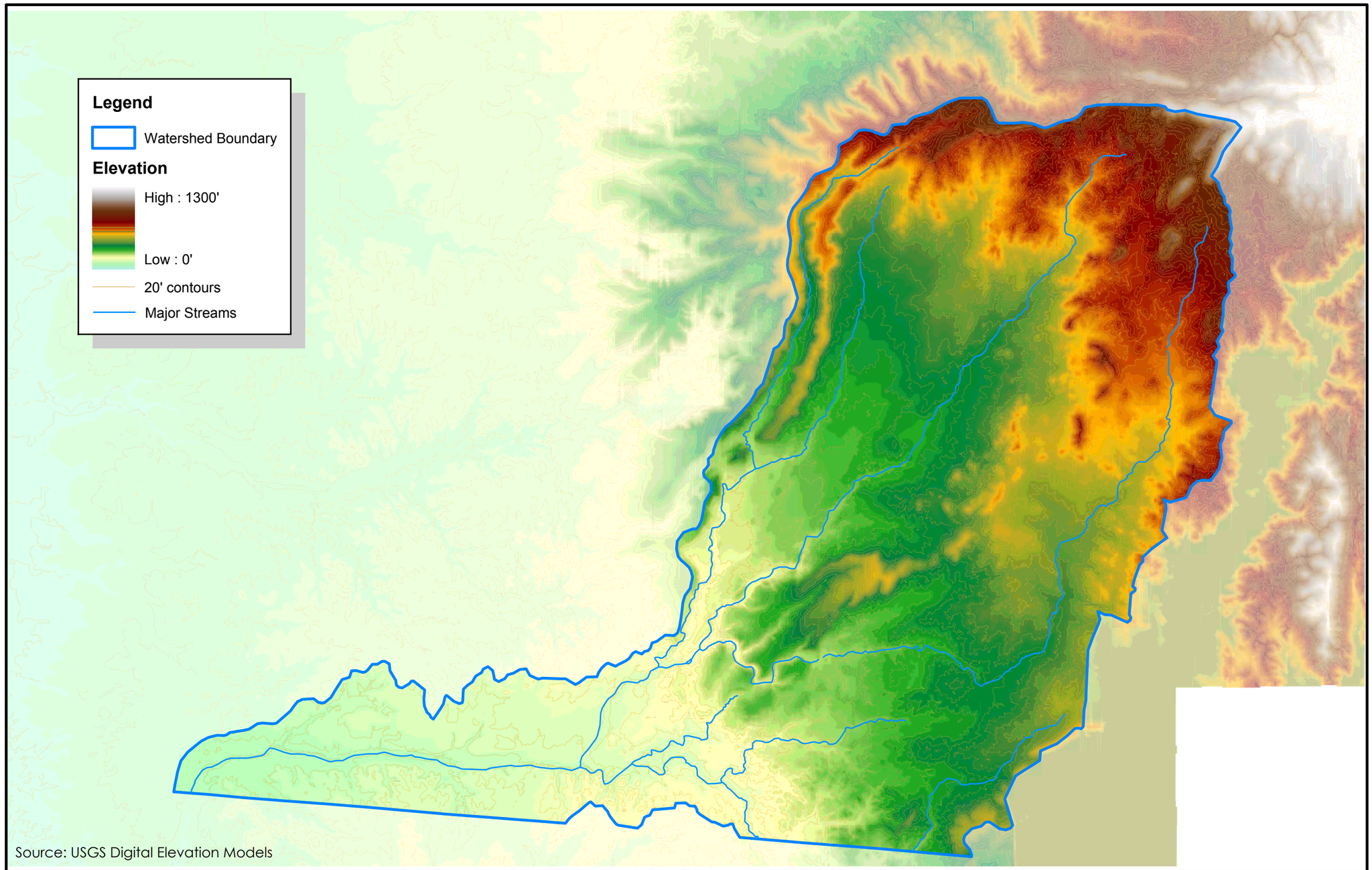

TOPOGRAPHY

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N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-5

2-5 topography.mxd

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3.4 Jurisdictions

Figure 3-6 shows the city jurisdictions, special planning areas and community planning areas within the Placer County portion of the watershed. The three city agencies are the City of Roseville, City of Rocklin, and the Town of Loomis. These three jurisdictions have expended varying degrees of effort towards open space planning within their limits. Of these three, the City of Roseville has the most extensive policies directed towards open space and trail connections contained within its General and Specific plans. Three specific plan areas determine policy for sections of Cirby Creek, Miners Ravine, Strap Ravine and Secret Ravine: Stoneridge, Northeast Roseville, and Southeast Roseville. The North Central Roseville Specific Planning area borders the watershed on the northwest near the junction of Highway 65 and Interstate 80, and also contains some policies applicable to planning along Dry Creek and Antelope Creek.

Outside of the City jurisdictions, Placer County has goals and policies contained in its General Plan as well as Community Plans for Horseshoe Bar/Penryn, Granite Bay and Dry Creek West Placer. Additionally there are areas of the watershed that are outside of the community planning zones that are regulated by the General Plan and other applicable County zoning ordinances. The Horseshoe Bar/Penryn and Granite Bay plans are particularly important in that they regulate land use and development in the upper watersheds of the Dry Creek tributaries. The streams in these areas are generally less impacted than in the lower watershed so are more vulnerable to development, which is more likely to occur in these areas in the next 10 years given current population projections and the average lot sizes in the upper watershed.

One of the major challenges in planning the Dry Creek Greenway is developing goals and policies that support the visions for Greenway yet are consistent with the general, specific and community plans of the various agencies. It is critically important in a watershed that encompasses multiple jurisdictions to create a plan that can be supported, and perhaps even adopted, by all of the jurisdictions in the watershed.

3.5 Population Centers

Population in the watershed largely follows city. special planning area and community planning area jurisdictional boundaries. The highest population density occurs in the population centers of Roseville, Rocklin and Loomis (Figure 3-7). Granite Bay has the highest population density in the unincorporated County. Within Roseville, the Southeast and Infill specific planning areas are the most populous. According to the 2000 census, the Stoneridge and Northeast areas were sparsely populated, but that has largely changed in the last three years, although the Northeast area contains a significant amount of land zoned Business Professional and Highway Commercial.

3.6 Land Use

Land use in the watershed includes general and light industrial; business professional; regional, community and neighborhood commercial; public/quasi-public; high, medium and low density residential; agriculture; parks and recreation; and open space (Figure 3-8). The industrial lands primarily follow the railroad lines to the north of Interstate 80. Commercial properties are also in this zone, as well as along Highway 65, Douglas Boulevard, the Roseville Automall area (in Northeast Roseville), and southwest of the Granite Drive-Sierra College Boulevard intersection in Rocklin. Business professional land

uses are largely in Northeast Roseville near Douglas Boulevard and along the Highway 65 corridor. The majority of the unincorporated County is low density or rural residential (defined as 4 dwelling units per acre or less). This is especially applicable to the upper watershed.

3.7 Soils

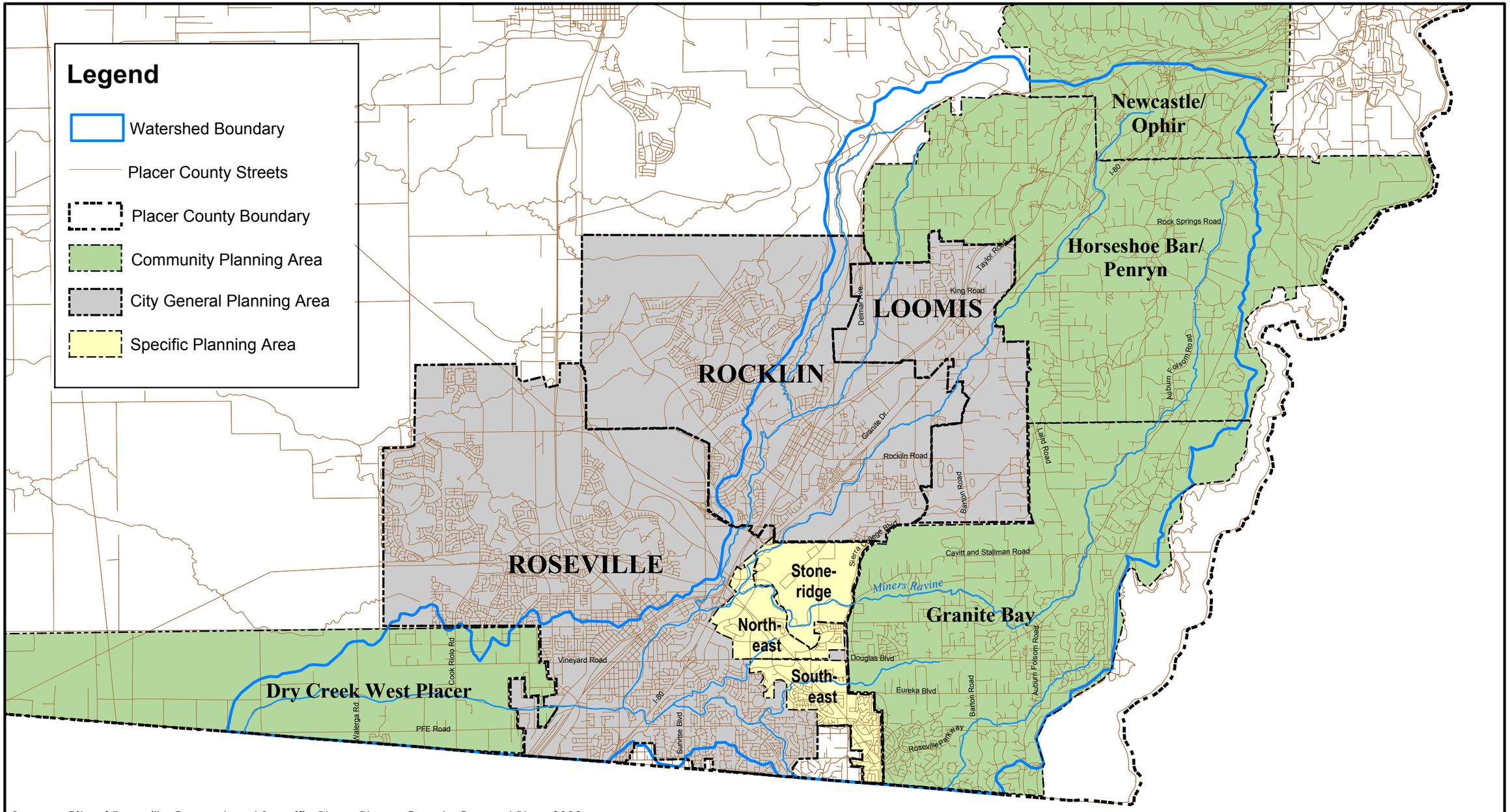
The soils in the northern or upper Dry Creek watershed near Penryn are generally well drained with low to medium runoff potential. Parent material for the soils consists primarily of granite or other andesitic conglomerates, with deeper soils forming along the ridge lines. Just south of the upper most watershed, near Loomis and Rocklin, the soils become dominated by Andregg Coarse Sandy Loam/Complexes which are moderately deep well drained soils formed on the rolling to steep slopes of the surrounding area.

Soils in the Roseville area begin to show higher runoff potentials and are less permeable than those in the higher elevations. This area is dominated by Inks Cobbly Loam/Complex, Cometa Loam/Complexes and other granite derived soils, the majority of which were formed from alluvium. Inks Cobbly Loam and Exchequer Very Stony Loam are soils in the Mehrten Volcanic formation. This formation forms a very hard layer underneath the surface, and combined with the shallowness of the soils, creates areas that are devoid of trees and dominated by grasslands. The Inks Cobbly Loam feature in the Northeast Roseville specific plan area exhibits these characteristics.

The lowest part of the watershed that is still located in Placer County has soils with widely varying physical properties. Along the streams within the floodplain Xerofluvents have formed which are well drained and tend to be stratified. The surrounding uplands consist of alluvium derived soils with pockets of Fiddyment Loam which are formed on low siltstone terraces. (Figures 3-9 and 3-10)

3.8 Wildlife Habitat Conditions

The flora and fauna found in the Dry Creek watershed are largely a reflection of soils, climate and land use. The Dry Creek watershed has a range of land uses, including residential, commercial, agricultural and recreational. Similarly, the soils range from relatively well-drained San Joaquin soils in agricultural use to fully built out urban areas with a very high degree of impervious surfaces. The Mediterranean climate is hot and dry in the summers and moderately cool with a moderate amount of precipitation in the autumn, winter and spring.



Source: City of Roseville General and Specific Plans, Placer County General Plan, 2003

JURISDICTIONS

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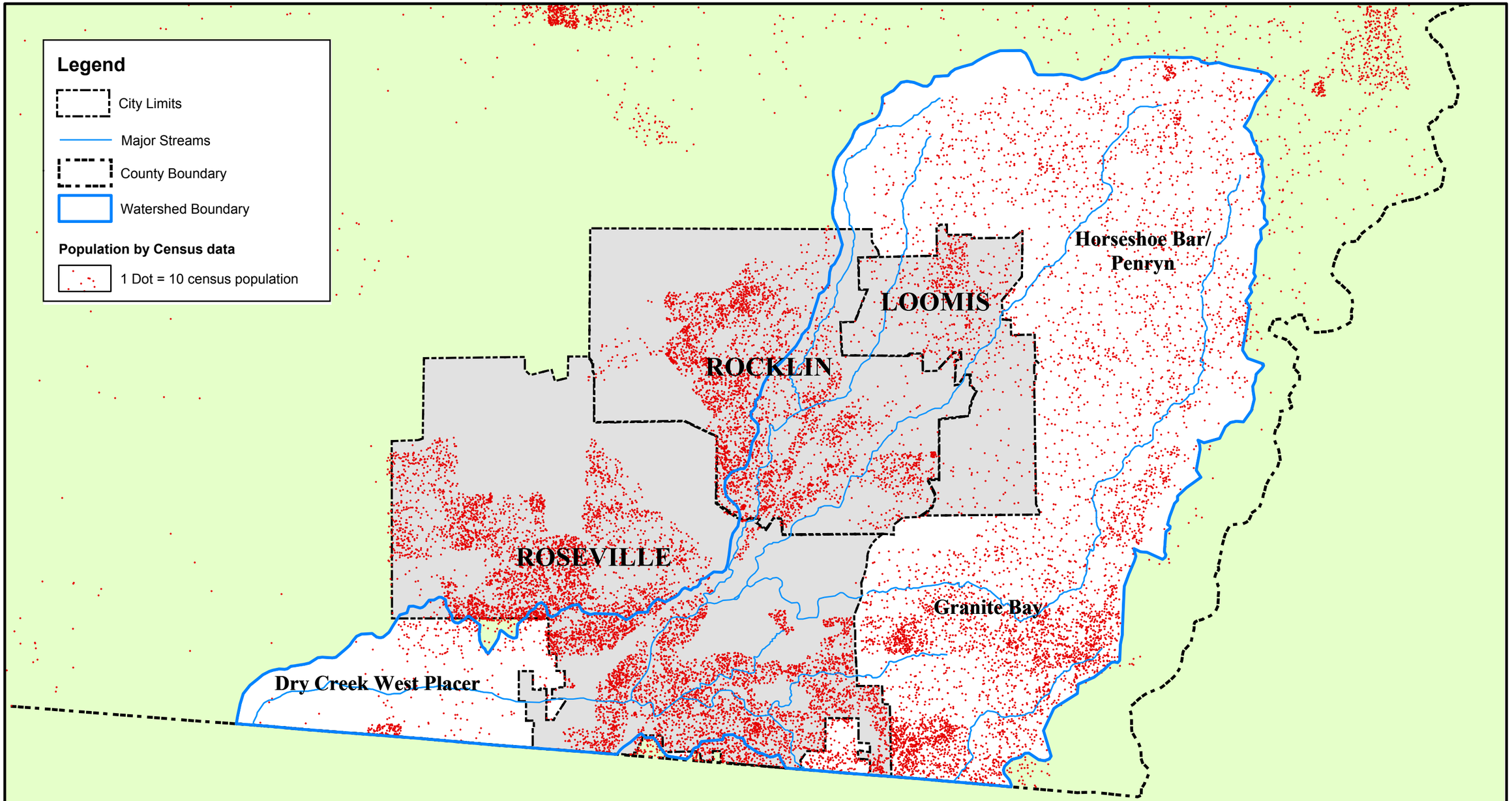
N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-6

2-6 jurisdictions.mxd



Source: US Census 2000 data

CENSUS 2000 POPULATION CENTERS

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LANDSCAPE ARCHITECTURE

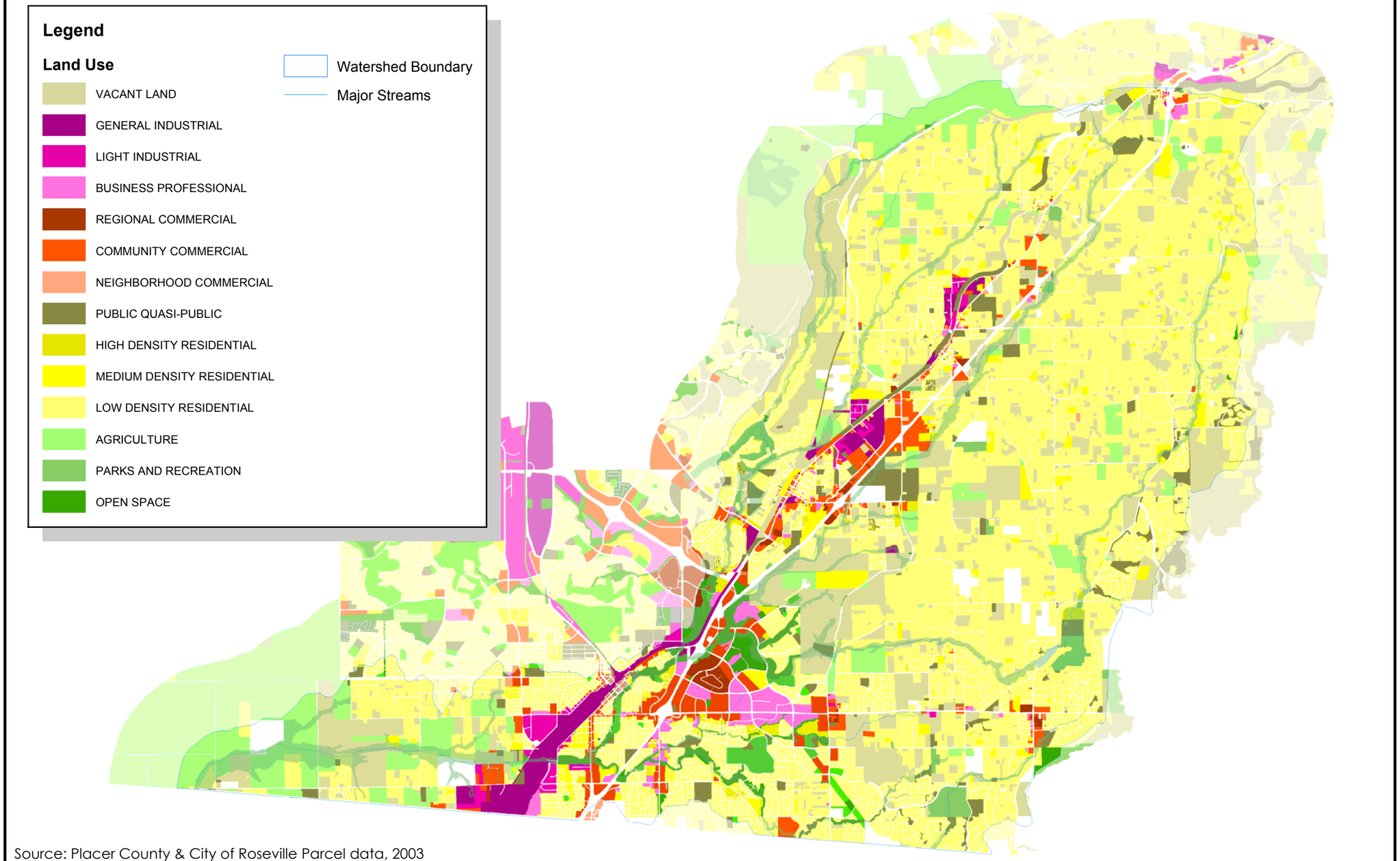
N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-7

2-7 population.mxd



Source: Placer County & City of Roseville Parcel data, 2003

LAND USE

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LANDSCAPE ARCHITECTURE

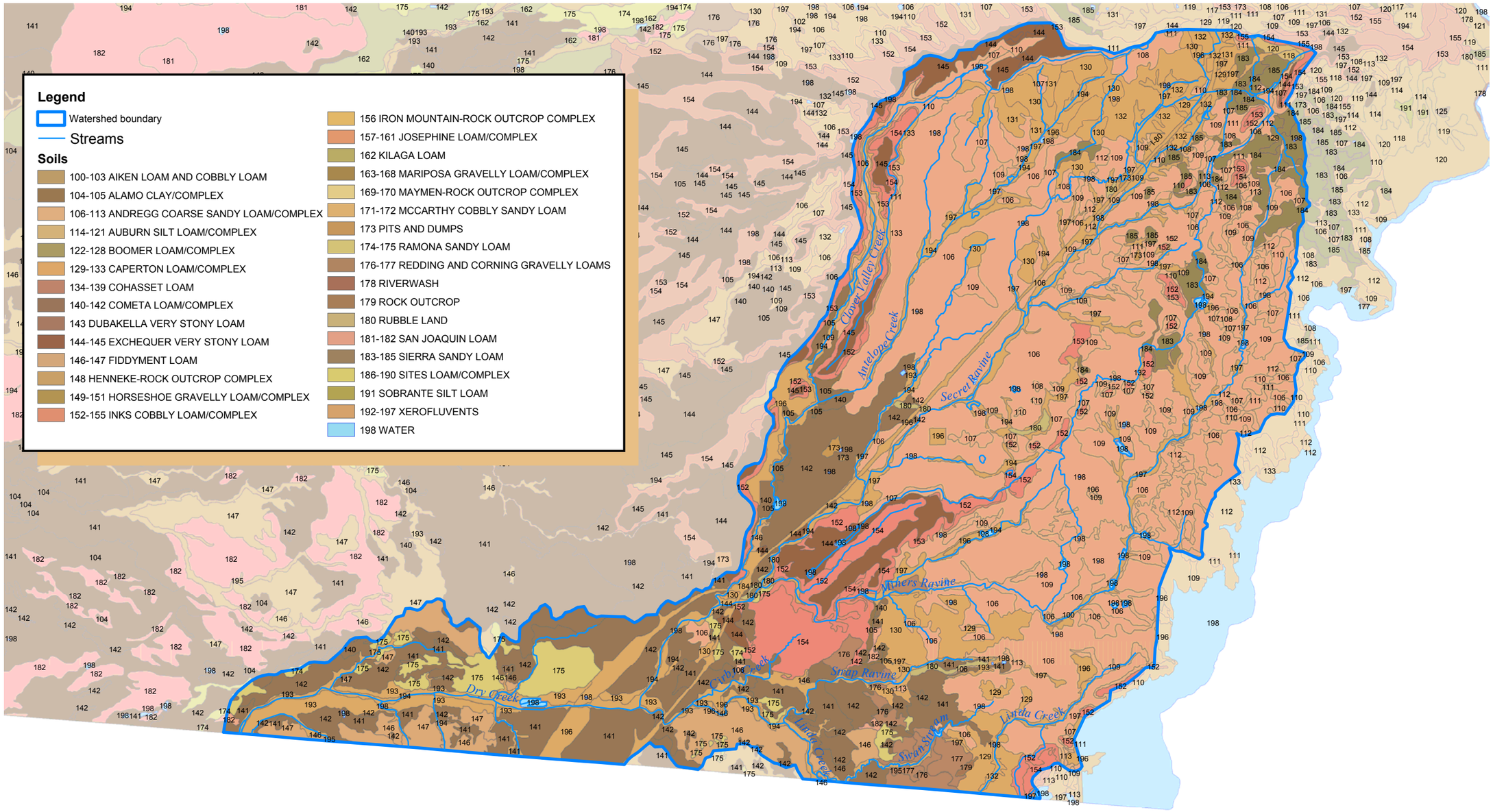
N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-8

2-8 land_use.mxd



Source: USDA NRCS Soil Survey for Placer County, 1998

SOILS

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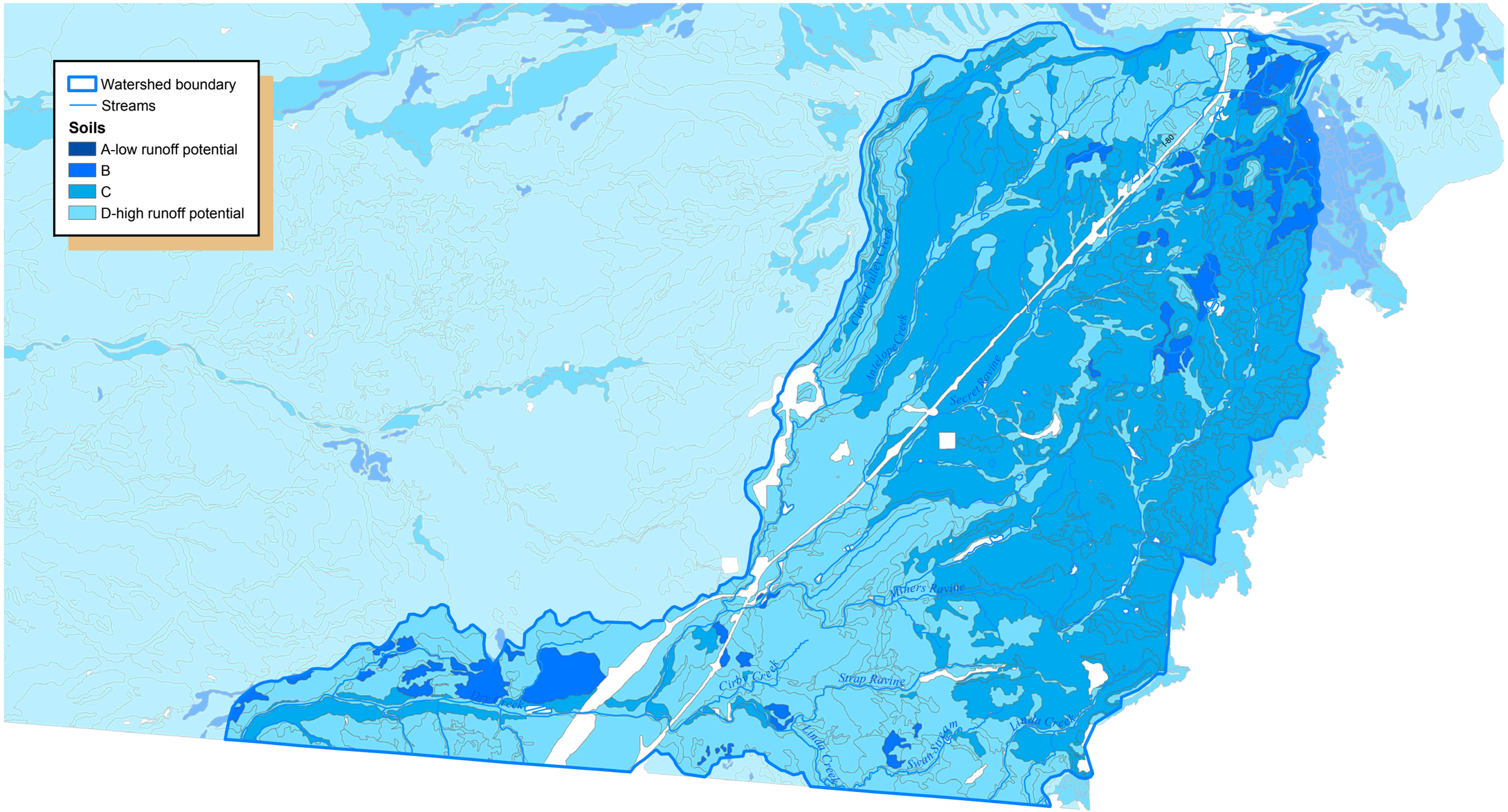
LANDSCAPE ARCHITECTURE

N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-9



Source: USDA NRCS Soil Survey for Placer County, 1998

HYDROLOGIC SOIL GROUP

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LANDSCAPE ARCHITECTURE

N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-10

2-10 hydr soils.mxd

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The plant communities are typically ruderal annual grasses and forbs in range lands and pastures, lawns and scattered native or non-native trees in parks, golf courses, school yards and other landscaped areas, mixed oak woodlands in upland and riparian areas, and smaller areas of emergent or scrub shrub wetlands, creeks, and open waters. Wildlife tends to locate in those areas where they can find the essentials of survival and reproduction, including foraging nesting and breeding habitats. Fish and other aquatic organisms may be found in those areas that are suitable in terms of water quality, cover, and other factors, and both fish and wildlife require the capacity to move freely between the resources that they utilize and, in some cases, to migrate beyond the watershed boundaries.

An example of an important combination of habitat types in the Dry Creek watershed would be a mature riparian forest in proximity to open grasslands. These habitat types provide surface water, cover for small mammals and deer, trees for raptors that may nest there, tree hollows for bats and cavity-nesting birds, and foraging opportunities for the hawks and owls that hunt open lands and for egrets and herons that hunt for fish and amphibians. Habitats that are compromised by breaks in connectivity, such as roads, or impaired by poor water quality will inevitably produce fewer numbers and types of flora and fauna.

Figure 3-11 shows vegetation types within the Greenway from the Placer Legacy database, and Figure 3-12 shows a California Natural Diversity Database (CNDDB) report for the watershed. Species of concern in the watershed include Valley Elderberry Longhorn Beetle (Linda Creek, Miners Ravine and Secret Ravine subbasins), California Linderiella (Linda Creek subbasin), Dwarf Downingia (Miners Ravine and Dry Creek subbasins), Vernal Pool Fairy Shrimp (Miners and Secret Ravine subbasins) and Western Spadefoot Toad (Antelope Creek subbasin).

3.9 Aquatic Habitat Conditions

Fish habitat varies considerably in streams that comprise the Dry Creek Watershed. Fall-run steelhead and chinook salmon have been observed on Secret Ravine[9], Miners Ravine[10], and Linda and Cirby Creeks[11]. A 1993 habitat evaluation of Dry Creek, Antelope Creek, Secret Ravine and Miners Ravine rates habitat from poor to excellent, with poor habitat occurring in the lower watershed and improved habitat occurring in the upper[12]. This study found Secret Ravine to have the best habitat, of the four streams studied, with gravel substrates and frequent riffles and pools. Cover was good on Secret Ravine and stream-flow was adequate throughout the year. Miners Ravine was rated as having good physical habitat, but low late summer flow levels. Beaver dams were noted as significant on upper Miners Ravine. Fish habitat along Antelope Creek was variable, recovering from construction of highways and bridges at the time of the report. Some good pools were noted, but sedimentation in the downstream reaches resulted in poor spawning habitat.

Sand was noted as the major problem on Secret Ravine for anadromous fish habitat[13]. Sand degrades habitat by burying spawning riffles, slowing water flow and making the

[9] Stacy K. Li, 1999.

[10] ECORP, 2003.

[11] Garcia and Associates, 2002.

[12] Vanicek, 1993.

[13] Li, 1999.

stream shallower, which warms water temperature. It also decreases aquatic food sources by limiting benthic macroinvertibrate habitat[14]. Li found seven major human-induced sources contributing to greater sediment loading of the stream: 1) bank erosion from a llama ranch downstream of Rock Springs Road, 2) stream-scour behind bank boulders upstream of King Road, 3) bank degradation along equestrian trails, 4) removal of vegetation through application of herbicides downstream of Loomis Regional Park, 5) degradation due to cattle upstream of Sierra College Boulevard, 6) off-road vehicle use, 7) development in Rocklin and Roseville without adequate use of BMPs. Most of these problems can be relatively quickly corrected, so it is unknown if these particular issues are still of concern in 2003; however, recent studies have indicated significant amounts of sediment are still present in the channel[15].

Habitat conditions for aquatic species in Linda and Cirby creeks have been classified as suboptimal; however, it was also noted that egg incubation and hatching has occurred successfully[16]. Water temperature was one of the limiting factors for salmonids during the warm seasons. Non-salmonid fish species identified on these creeks included Sacramento sucker, bluegill/green sunfish hybrid, hitch, Sacramento pikeminnow, mosquitofish and to a lesser extent spotted bass, largemouth bass, golden shiner, and black bullhead.

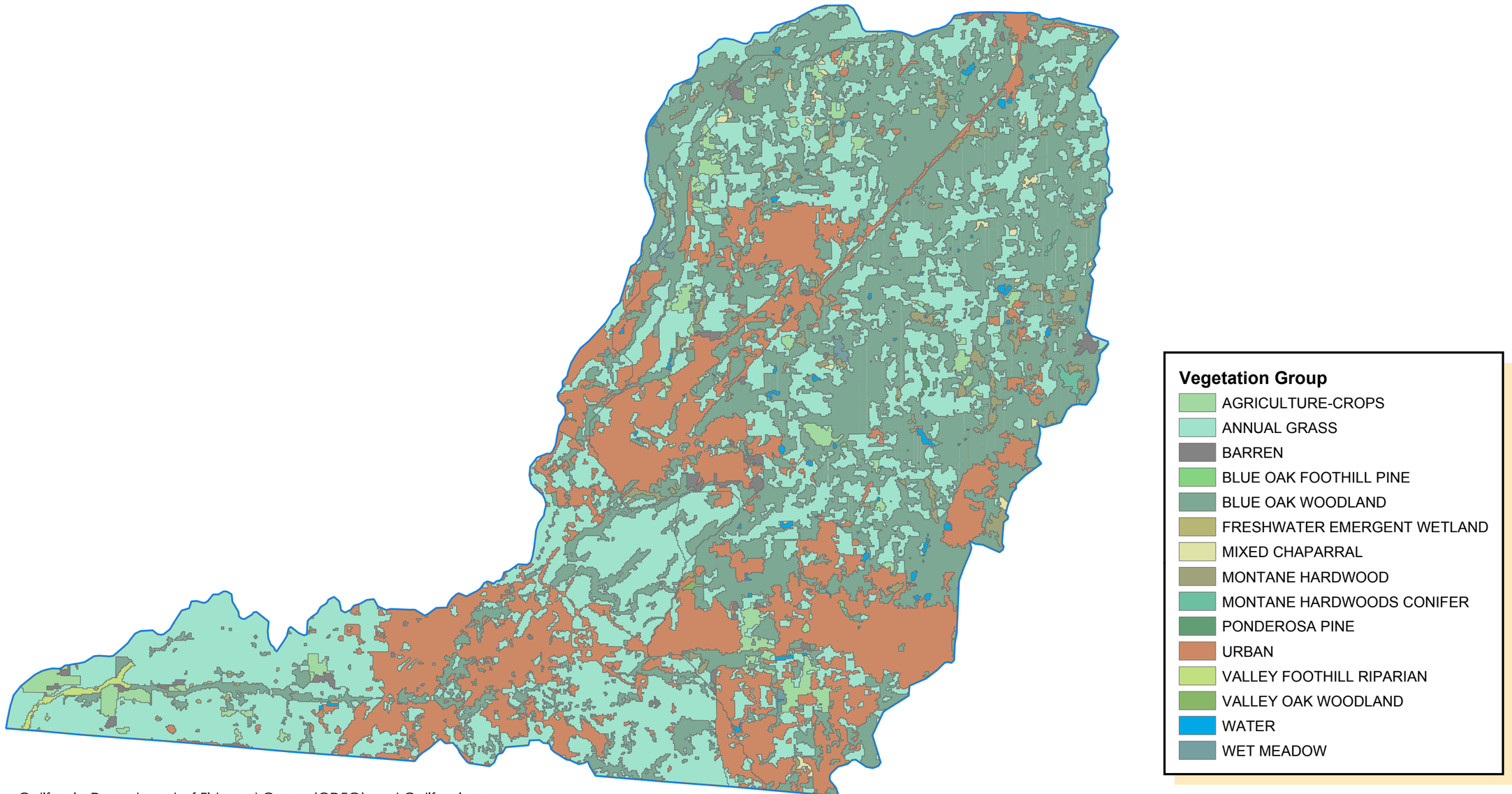
3.10 Recreation Resources

Recreational sites within the Dry Creek watershed include a number of public uses, including parks, golf courses, open space/greenbelt, streams and lakes, schools, recreational clubs and businesses, and wetlands/vernal pools, for their educational opportunities (see Figure 3-13). Schools, parks and open space are of primary importance in developing a plan for the Dry Creek Greenway, since these land uses are areas where people can access the Greenway as well as being major destinations for alternative modes of transportation such as bicycling. Children bicycling or walking between home, schools and parks should have a route that is separate from the road network as much as possible to improve safety, quality of experience and environmental education.

[14] Ibid.

[15] HDR, 2003.

[16] Garcia and Associates, 2002.



Source: California Department of Fish and Game (CDFG) and California □
Department of Forestry and Fire Protection (CDF/FRAP) westveg dataset, 2001

VEGETATION

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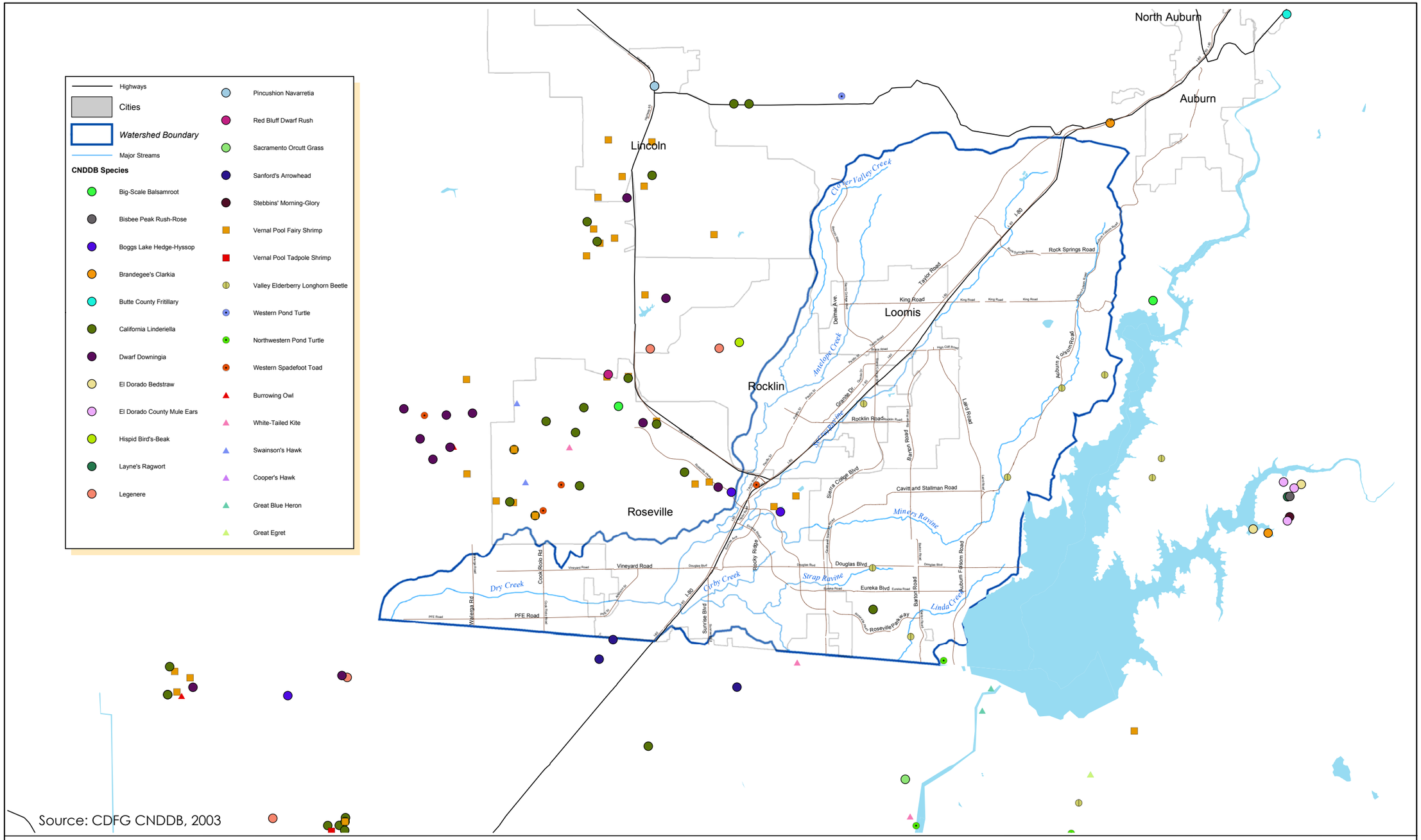
N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-11



California Natural Diversity Database (CNDDB)

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LANDSCAPE ARCHITECTURE

N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-12

2-12 CNDDB.mxd

WATERSHED BOUNDARY

MAJOR STREAMS

STREETS

FOLSOM LAKE STATE RECREATION AREA

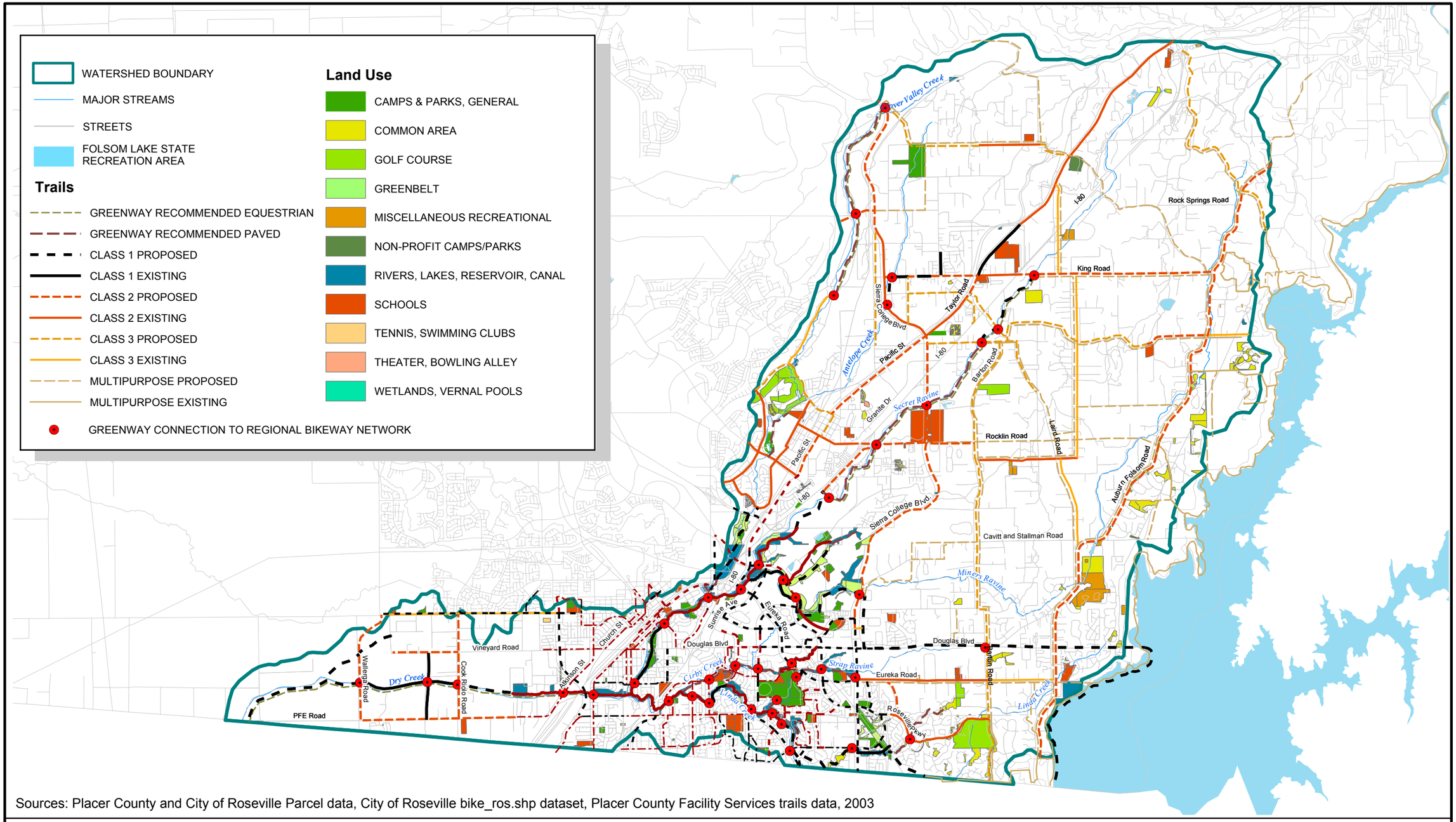
Trails

- GREENWAY RECOMMENDED EQUESTRIAN
- GREENWAY RECOMMENDED PAVED
- CLASS 1 PROPOSED
- CLASS 1 EXISTING
- CLASS 2 PROPOSED
- CLASS 2 EXISTING
- CLASS 3 PROPOSED
- CLASS 3 EXISTING
- MULTIPURPOSE PROPOSED
- MULTIPURPOSE EXISTING

GREENWAY CONNECTION TO REGIONAL BIKEWAY NETWORK

Land Use

- CAMPS & PARKS, GENERAL
- COMMON AREA
- GOLF COURSE
- GREENBELT
- MISCELLANEOUS RECREATIONAL
- NON-PROFIT CAMPS/PARKS
- RIVERS, LAKES, RESERVOIR, CANAL
- SCHOOLS
- TENNIS, SWIMMING CLUBS
- THEATER, BOWLING ALLEY
- WETLANDS, VERNAL POOLS



Sources: Placer County and City of Roseville Parcel data, City of Roseville bike_ros.shp dataset, Placer County Facility Services trails data, 2003

RECREATION RESOURCES

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LANDSCAPE ARCHITECTURE

N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-13

2-13 recreation resources revised.mxd

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Recreational areas within the watershed include Sabre City, Westwood, Rusch Community, Cresthaven, Cirby Creek, Mark White, Eastwood, Garbolino, Saugstad, Kaseburg, Weber, Ferretti, Royer, Woodbridge, Lincoln Estates, Sierra Gardens, Madera, Sculpture, Crestmont, Edgecliff Court, Maidu, Willard Dietrich, Ray E. Lockridge, Olympus, Hillsbourough, Treelake, Miners Ravine Nature Preserve, Sterling Point, Sierra Meadows, Woodside, Sunset East, Johnson Springview, Quarry, Clover Valley, Sunrise Loomis, Griffith Quarry, Loomis Regional, Granite Bay Regional Park (planned) and Traylor Ranch.

Elementary School Districts include Center Joint School District, Dry Creek Joint School District, Roseville City School District, Eureka Union School District, Rocklin School District, Loomis Union School District, Penryn School District, Newcastle School District and Auburn School District. High School Districts include Center Joint High School District, Roseville Joint Union School District, Del Oro High School District and Placer Union High School District. Sierra College is also located within the watershed, at the intersection of Sierra College Boulevard and Rocklin Road, and is a major educational and recreational contributor.

While golf courses are not primary destinations for alternative modes of transportation, this land use forms large tracts of open space within the watershed. They are mentioned here because public courses could be staging areas for accessing the greenway, as they are often adjacent to existing streams. They may also function as habitat for birds and small animals in such cases. Golf Courses in the watershed include Indian Creek Country Club, Sunset Whitney Country Club, Granite Bay Country Club, Morgan Creek and Roseville Rolling Greens Golf Course.

The Folsom Lake State Recreation Area (FLSRA), though outside of the watershed, forms a critical element in the Dry Creek watershed recreation component. The large number of people using the FLSRA may access the Greenway through the Baldwin Lake or Douglas Boulevard connections. Similarly, recreating people in the Sacramento County planned Dry Creek Parkway may access the Greenway through the Dry Creek connection at the Placer-Sacramento county line. Maidu Park is a large tract of continuous open space adjacent to Linda Creek at Strap Ravine and is also a major recreational destination. Indian Stone Corral in Orangevale is adjacent to the Baldwin Lake connection and could also function as a staging area for the Greenway.

3.11 Existing and Anticipated Floodplain Conditions

The 100 year floodplain in the Dry Creek watershed varies in condition, from intact riparian zones protected from development by regulations, to impacted and encroached-upon areas where development has occurred prior to adoption of regulations restricting development in the floodplain. Current regulations in Roseville restrict development in the 100 year floodplain. Development in infill areas is prohibited in the floodway zone, but may be permitted in the floodway fringe (as defined by the Nolte Future Floodplain Information). Development in the remainder of Roseville is prohibited within the future floodplain (floodway and floodway fringe) except as evaluated on a case-by-case basis. Placer County regulations prohibit development in the 100 year floodplain, unless insufficient area exists outside of the floodplain on a specific property for the zoned development to occur. In the case of the latter, regulations specify actions that must be taken to minimize the impact of the development on the flow of floodwaters. Loomis also restricts development in the 100 year floodplain as mapped by FEMA for build-out conditions. Rocklin has a similar policy.

Figure 3-14 maps the FEMA 100 year and 500 year floodplain. In the upper watershed, particularly in the Horseshoe Bar/Penryn area, floodplains are narrow or insignificant. As the tributaries converge, flooding becomes a more serious issue. Roseville has historically been heavily impacted by floods. In the Roseville area, the floodplain varies from less than 200 feet at the Roseville Parkway bridge over Secret Ravine to greater than 1600 feet downstream of the Dry Creek-Linda Creek confluence. The latter is one of the few areas that exhibit a 500 year floodplain that is significantly larger than the 100 year.

A 1992 report by the Placer County Flood Control and Water Conservation District and the Sacramento County Water Agency[17] examined the potential impact of flooding in the Dry Creek watershed and recommended possible solutions. It found that substantial flood damage will occur during a 100 year flood under the existing conditions. It projected an increase in peak flood flows of 10 to 20 percent as a result of development in the basin. It also found that under current and anticipated future conditions, 70% of the bridges and culverts in the watershed are inadequate to accommodate a 100 year flood, and 52% are insufficient for a 25 year event. Based upon their research, Placer County concluded that local on-site detention basins cannot completely mitigate the cumulative impacts of future development in the watershed, and that regional detention basins could be significant in reducing existing flooding problems and mitigating future impacts. They also recommended against significant clearing of vegetation, as this would increase the level of flooding in the region. The report further recommended construction of a number of regional detention basins. None of these basins have been constructed as of Summer 2003, and a number of the more promising sites have been deemed unfeasible due to neighborhood opposition and/or other issues.

The Placer County study was followed in 2000 by an additional regional detention study by Montgomery Watson. The 2000 report[18] supported the 1992 conclusions that the on-site detention requirements for new development were insufficient to account for the increase in peak flood flows due to that development. The 2000 report recommends five sites for regional detention, in addition to those recommended in the 1992 report: Miners Ravine upstream of Auburn Folsom Road, Miners Ravine upstream of Moss Lane, Dry Creek at Saugstad Park, Linda Creek between Oak Ridge and Rocky Ridge Drive, and Dry Creek west of Cook Riolo Road. Additionally, it was found that increasing local detention requirements to reduce runoff to 70% of existing conditions was sufficient to maintain regional flooding at current (2000) levels. The Recommendation of the 2000 report was to take one of two possible actions: 1) adopt regulations for new development to reduce runoff to 70% of current state, or 2) construct regional detention facilities at the Dry Creek/Saugstad Parks site and the Linda Creek site noted above, as well as on Strap Ravine at McLaren Drive in Maidu Park. This latter site was identified in the 1992 study as a potential regional detention site and is currently under further study by Placer County Flood Control and Water Conservation District. The new development regulations were not adopted.

An August 2003 report by the Placer County Flood Control and Water Conservation District (PCFCWCD) recommended two sites on Secret Ravine for floodplain restoration[19]. Site 1is located approximately 75 feet upstream of the Sierra College Boulevard crossing and extends 1400 feet upstream. Site 2 starts approximately 500 feet upstream of the Roseville/Rocklin City limits and encompasses 30 acres. Restoration goals for these

[17] PCFCWCD and SCWA, 1992.

[18] Montgomery Watson, 2000.

[19] HDR Engineering, 2003.

projects include improving the creek's access to the floodplain through channel widening and floodplain terracing, increasing the sinuosity of the channel, reduction of bank erosion sources, removal of invasive plants and revegetation with native riparian species, potential addition of in-stream structures, restoration of side-channels or backwater areas and limited recreational improvements.

Additionally, PCFCWCD is currently conducting an alternative regional detention site analysis to identify updated/viable regional detention sites within the watershed.

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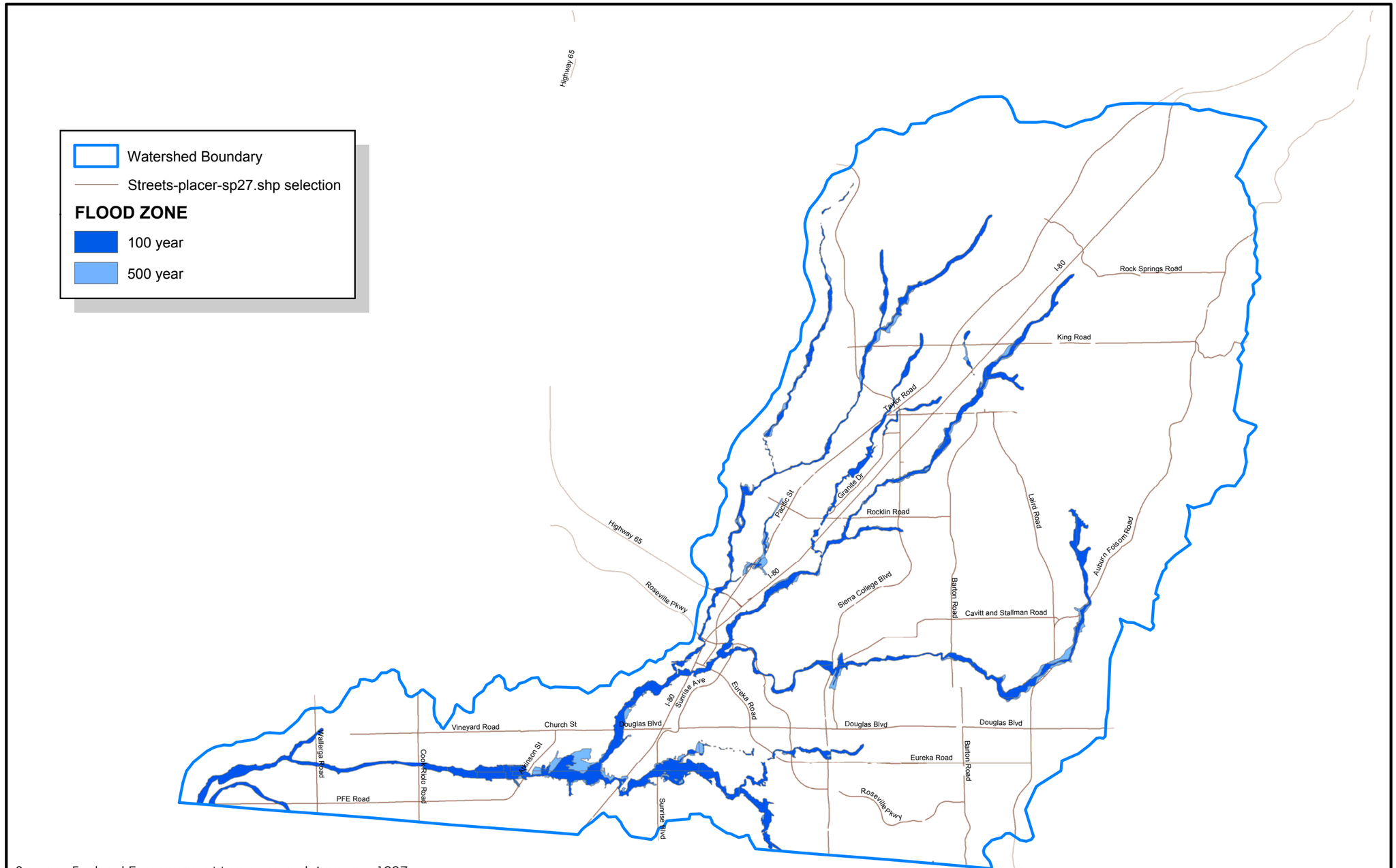

Source: Federal Emergency Management Agency, 1997

FEMA FLOOD PLAINS

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LANDSCAPE ARCHITECTURE

N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-14

2-14 floodplains.mxd

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3.12 Key Positive Corridor Attributes

Several opportunities exist in the watershed that support the implementation of the Greenway. A partial list includes designated open space along creeks, parks within or adjacent to the Greenway, public land near the creek corridors, the proximity of Sierra College to Secret Ravine, valuable riparian vegetation, extent of floodplains and existing and proposed bikeways within the corridor. Land along the major creeks that is currently designated open space supports the Greenway Plan because trails can often be located in these areas without requiring purchase of land or easements. The exception to this is designated open space that is held by private organizations such as HOAs that permit access to residents of that HOA. However, even these common space lands preserve the open space from development, and thus preserve habitat values. They also may function as private connector routes to Greenway trails for local residents.

Parks within or adjacent to the Greenway are positive attributes. They function as staging areas proving access to Greenway trails, picnic and recreational areas for trail users to gather, relax and play, restroom areas, and focal points for larger trail events. Parks adjacent to creeks are located on publicly-owned land within the Greenway which is also available for trails. Similarly, land other than parks that is already in public ownership such as the public/quasi-public land use designation provides additional potential routes for trails.

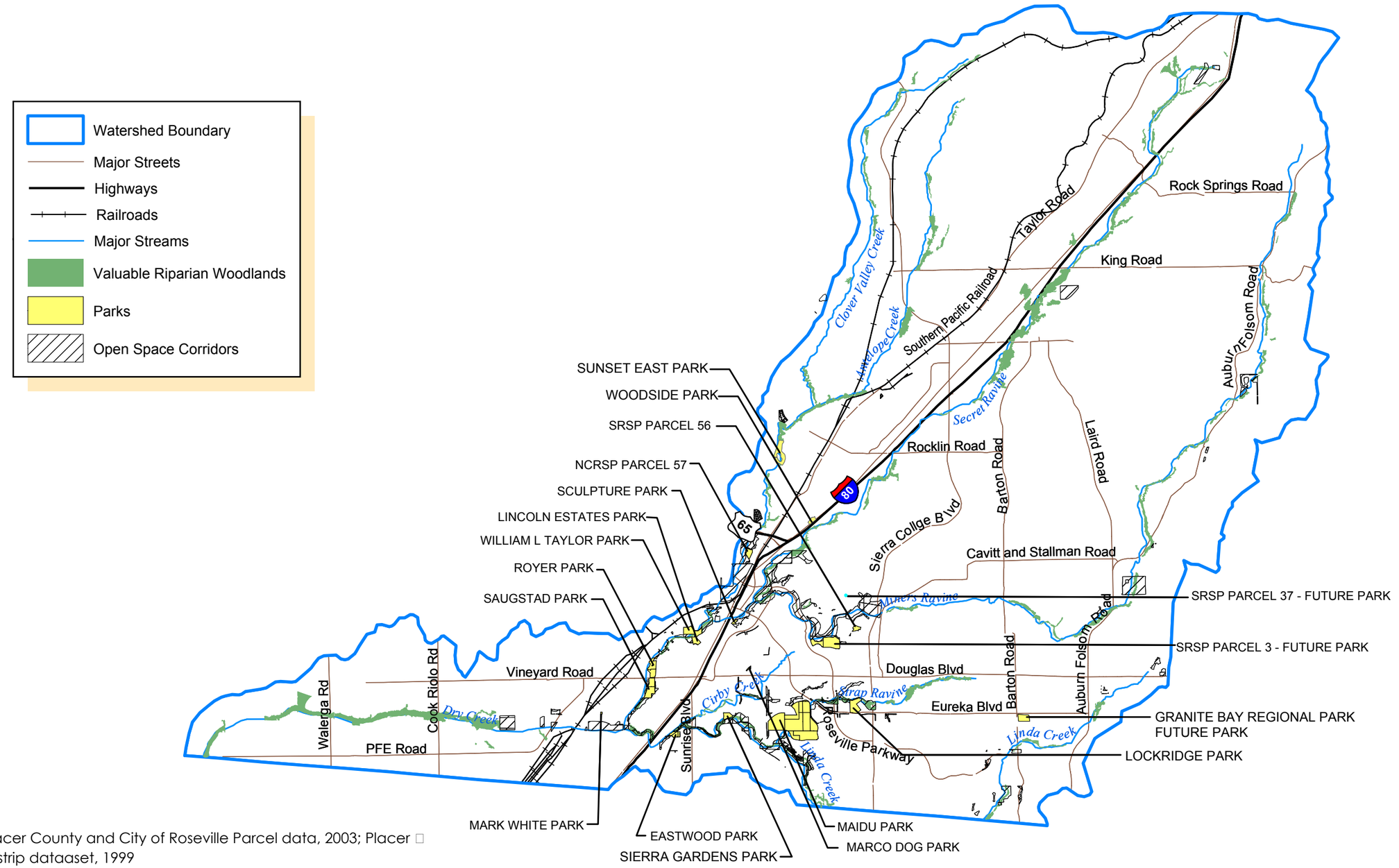
Sierra College is a positive corridor factor because of the potential involvement with Secret Ravine of students and faculty in environmental programs. The college has programs in biological sciences, earth sciences, environmental horticulture, forestry, geography, and geology, all of which could benefit from the use of the open space along the Ravine as an outdoor lab. Involvement of students at the college in creek programs may also help to build public advocacy for the creek. Sierra College can additionally function as a staging area for potential trails in that area. Elementary and High Schools are also positive factors when in proximity to the Greenway for similar reasons. Environmental programs in public and private schools often utilize natural open space for outdoor classrooms.

Valuable riparian vegetation and the 100 year floodplain are protected from development by existing City and County regulations, and because of this, they provide natural open space corridors for trails and wildlife and aquatic species habitat. Additionally, mature, intact riparian vegetation provides an aesthetically pleasing environment for urban residents seeking a respite from the city.

Finally, existing bikeways and those proposed in the City of Roseville's Bikeway Master Plan and Placer County's Regional Bikeway Plan support Greenway objectives for recreational trails where they follow the stream corridors. Several segments of Class I bikeways have already been built in Roseville along Dry Creek, Miners Ravine and Linda Creek, and where they don't exist currently, major sections are planned along Dry Creek from the Placer-Sacramento County line to the confluence of Secret and Miners Ravines, along Cirby Creek from its confluence with Dry Creek to Linda Creek, along Linda Creek from Cirby Creek to the powerline corridor east of Sierra College Boulevard, along Secret Ravine from its confluence with Miners Ravine to China Garden Road, and along Miners Ravine from its confluence with Secret Ravine to the Sierra College Boulevard crossing. Figure 3-15 maps some of these positive corridor attributes.

In addition to the physical positive corridor attributes, positive social attributes support the Greenway through public backing and stewardship. Some of the social factors that support the Greenway concept include the desire to

- recreate in natural surroundings,
- use alternative forms of transportation,
- protect streams in a natural, unchannelized forms,
- experience natural settings and wildlife,
- preserve and protect wildlife and fish,
- preserve settings for environmental education,
- create a regional amenity that will attract visitors,
- preserve sufficient flood capacity to minimize damage from storms,
- protect water quality in the streams.



Sources: Placer County and City of Roseville Parcel data, 2003; Placer □ Legacy westrip dataaset, 1999

POSITIVE CORRIDOR ATTRIBUTES

FOOTHILL ASSOCIATES
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LANDSCAPE ARCHITECTURE

N

SCALE 0.8 0.4 0 0.8 1.6 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-15

2-15 positive attributes.mxd

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3.13 Barriers to Trail Development

The primary limiting factors to trail development in the Greenway include physical barriers, financial barriers and social barriers. Physical barriers include features such as road crossings and culverts; private property; habitats for species sensitive to human presence; existing incompatible land uses such as industrial sites, storage yards or any site that poses a hazard to trail users. Financial barriers limit trail development due to the cost of land acquisition, trail improvements and maintenance. Social barriers include negative attitudes of the public towards trails and usage of the Greenway, including the following concerns:

- impact of increased usage on habitat,
- privacy in residential areas,
- respect of private property rights,
- fair compensation for public acquisition of desirable lands,
- impact of traffic and increased usage on neighborhoods around nodes,
- maintenance of trails and nodes.
- Crime associated with trails and increased access to open space systems,
- Difficulty in establishing workable partnerships between local governments and the business and nonprofit sectors.

Figure 3-16 shows some of the barriers to trail development.

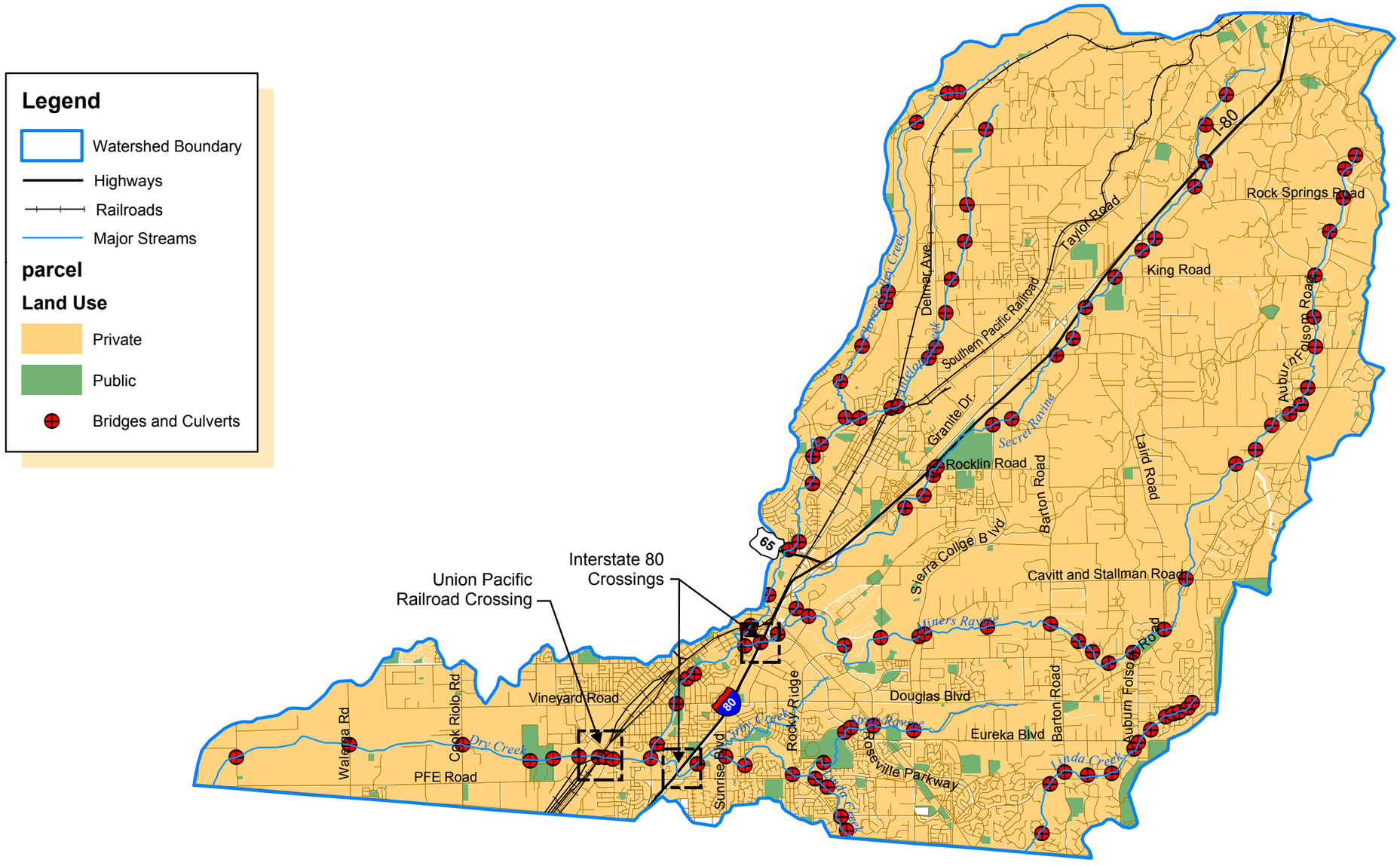
One of the most significant physical barriers is the crossing of the Union Pacific Railroad yards in the City of Roseville over Dry Creek. This highly industrialized area encroaches upon the creek in the area of the railroad crossing, leaving little natural habitat and little allowance for a class-I bike trail. Sufficient space may exist on the southern bank for a location of a bicycle trail underneath the bridge; however, more detailed studies would need to be performed to verify the feasibility. If it is possible, the trail would likely be confined to periods of low-flow in this section, based upon elevations of the trail and creek. If it is not feasible to route the trail under the bridge, the bikeway would either need to pass over the Foothills Boulevard bridge or follow an alternative route. An overpass structure would be expensive, and may require easements and/or authorizations from the railroad. An alternate route exists already, following Atherton Road, Foothills Boulevard and Vernon Street; however, this is a significant detour from the stream course. The preferable solution from a cost/benefit standpoint is an under-bridge trail with the existing alternate route used during high-water events.

Another significant barrier is the Interstate 80 crossings of Dry Creek and Secret Ravine. This freeway forms a major topographic feature in the watershed which affects both the Secret Ravine and Antelope Creek watersheds. It forms a significant barrier to wildlife migration which is difficult to mitigate. The bridges over the streams should be of sufficient height to allow trails underneath; however, such crossings will require engineering studies during the design phase.

The primary social barrier to trail development is private property ownership. Private land holdings far outweigh public land, and although Figure 3-15 does not show private open space that is held in common but is publicly accessible, it does demonstrate that the

large majority of the land through which the creeks flow is private property. In locations where trails are important, but land is owned by private entities, the public jurisdictions may elect to negotiate with private entities to acquire land. This may be through fee-title ownership or purchase of easements. The land in question is often not developable because it is in the floodplain, and may be acquired for a lesser value than developable land. When considering acquisition of private land for a section of trail, it is important to consider the parcels on both sides of the creek and route the trail depending upon the following criteria:

- Which alignment contains the most public land?
- On which bank(s) are the existing trails located?
- Where are the willing property owners?
- Can the trail cross the creek to take advantage of willing property owners or public land? What are the associated costs in environmental and financial terms?
- Which local streets can be used to make the desired connection in the event a route cannot be negotiated along the creek?
- If willing property owners exist, are they interested in negotiating a fee-title sale or an easement?



Sources: Placer County and City of Roseville Parcel data, 2003; US EPA reach file 3, Basins 3.0 dataset; 1995 & 2001 Census tiger line files

BARRIERS TO TRAIL DEVELOPMENT

FOOTHILL ASSOCIATES
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LANDSCAPE ARCHITECTURE

N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-16

2-15 barriers.mxd

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3.14 Compatibility of Land Use with the Greenway Concept

The Greenway passes through a wide variety of land uses, from the industrial and urban areas around downtown Roseville to large lot, low density residential communities in the upper watershed. Small and medium lot new residential developments encompass much of the lower and middle watershed, where most of the recent growth has occurred. This land use is generally compatible with the Greenway, since many of these new communities, such as Morgan Creek and Placer Vineyards, have been required by Placer County or the City of Roseville to designate the area around Dry Creek as public open space. In the lower watershed west of the City of Roseville, several new communities along Dry Creek and minor tributaries are in various stages of implementation. Morgan Creek, Doyle Ranch and Sun Valley Oaks, in particular, are constructing bikeways that meet the goals of the Greenway Plan as part of their development agreements.

The middle watershed is composed of new communities, older residential developments, and industrial and commercial uses in the area of downtown Roseville and Rocklin. The Union Pacific railroad may pose challenges to the Greenway. Industrial areas are generally incompatible with the recreational and habitat preservation goals of the Greenway; however, some of the negative impacts can be minimized by construction of berms, screening, water filtration swales or other site design techniques. In addition to negative impacts, industrial land uses can also support the Greenway because there is no impact to individual homeowners, and industrial owners may be more willing to negotiate for public access.

In some areas, such as along Dry Creek near Royer Park, existing hardscape fronts directly onto the creek without sufficient space for mitigating measures. This hardscape may be existing structures or roads. Little can be done currently to make these areas more compliant with the Greenway objectives; however, redevelopment or realignment of roads at some point in the future may create an opportunity for change.

In some areas, such as along Clover Valley Creek between Midas Avenue and Rawhide Road in the city of Rocklin, small lot existing older residential developments front directly onto the creeks without designated open space. It is unlikely that easements will be acquired or trails developed in these circumstances, since the chance of reaching universal consensus among many private property owners is slim, and the space may be insufficient for a trail corridor even if all parties were agreeable. Perhaps the best that can be accomplished in these areas is educating homeowners on the effects of household chemicals on the streams, encouraging the planting and maintenance of a healthy riparian buffer, and instilling a sense of creek stewardship in individual property owners.

Some large lots in the middle watershed (see Figure 3-8) remain vacant. These are opportunities for preserving the open space along the creeks and constructing Greenway trails if these properties are developed. Some of these types of properties have been designated as habitat with potential recreation areas, if trails would form meaningful connections with existing and proposed routes. This designation, discussed in greater detail in Chapter 4, indicates a corridor that is managed to maintain the quality of the riparian and aquatic habitat, but may include trails if easements can be acquired.

The upper areas of the watershed are dominated by large lot land uses, primarily low density residential and vacant land, with a scattering of agricultural uses. These types of

land uses generally offer greater opportunities for easement or property acquisition than the smaller lots in the lower watershed because the local jurisdictions only have to negotiate with one land owner rather than many. Additionally, large lot properties often undergo development as land values increase as a result of economic growth in the County. The permitting process that is a part of development presents opportunities for designation of open space and construction of trails. Furthermore, it may be easier to convince several large lot property owners to properly care for their riparian and aquatic resources than many small lot residents. The primary constraint presented by the upper watershed land use patterns is that little open space is currently designated in these areas. This means that easements or property will need to be acquired if any trails are to be constructed in the upper watershed.

4.0 DRY CREEK GREENWAY VISION STATEMENTS

The Dry Creek Greenway is envisioned as a regional open space resource that through a comprehensive management scheme provides multifunctional benefits including wildlife and aquatic habitat, passive recreation, and flood conveyance for the communities in western Placer County and northern Sacramento County. The Greenway passes through several local jurisdictions, specifically the Town of Loomis, the City of Rocklin, the City of Roseville, and the County of Placer. In the course of developing General Plans, community plans, specific plans, and local ordinances each of these jurisdictions has already adopted certain management and planning strategies that address local uses and activities within the Greenway boundary in a manner that reflects the community's conditions and priorities.

The Dry Creek Greenway Regional Vision recognizes that while these differences in specific planning and management activities will continue to exist, there is nevertheless a core set of common values that the jurisdictions share with respect to caring for the creek corridor and floodplain resources. The following ten Vision Statements identify those open space values that all the jurisdictions share so that future Greenway management will be guided by a common vision. The order that these vision statements are presented does not imply the priority of the individual statements. The manner and timing with which the Greenway vision will be accomplished may vary by jurisdiction according to factors such as the availability of funding, staffing, and access constraints.

The vision for the Dry Creek Greenway is to:

- Conserve and restore riparian and aquatic habitat located within the Greenway boundary (as defined in the Dry Creek Greenway Regional Vision) and enhance the value of habitat areas that adjoin the Greenway;
- Conserve and protect significant historic, cultural, and scenic resources of the Greenway;
- Provide a continuous open space corridor to the extent possible from the Placer County boundary at Dry Creek (west of Watt Avenue and PFE Road) to the American River Parkway (ARP) and Folsom Lake State Recreation Area (FLSRA) as part of the 70-mile regional greenway loop, and including the upper portions of the Dry Creek Watershed;
- Provide for management of facilities, natural resources, operations, and activities within the Greenway to assure public safety;
- Provide for the integration of active and passive recreational uses that will have minimal impacts on the natural resources;
- Maintain critical flood conveyance and capacity within the Dry Creek floodway;
- Develop and implement the Greenway in a manner that is consistent with existing plans developed by the local governments and special districts with Greenway jurisdiction;
- Coordinate with agencies and jurisdictions to secure adequate funding and resources to sustain and complete implementation of the Greenway;

- Propose strategies for immediate and long-term land use planning and management practices within the Greenway; and
- Promote the Greenway as a local and regional asset through collaboration and coordination with regional partners, resource agencies, and public education.

5.0 POTENTIAL GREENWAY IMPLEMENTATION STRATEGIES

This section of the Dry Creek Greenway Regional Vision contains potential implementation strategies that have been developed to support each of the ten Greenway Vision Statements. These strategies combine both directional statements that reflect the values of the Greenway Vision as well as specific projects.

Local jurisdictions have in some cases already adopted policies and/or executed projects that overlap with the measures described here. The Dry Creek Greenway Regional Vision is intended to complement, not replace, these significant planning efforts and land use oversight mechanisms already in place within the City of Rocklin, City of Roseville, Town of Loomis, and County of Placer. Endorsement of the Greenway Regional Vision is understood to mean that the local jurisdictions are committed to working collectively to further the overall conservation and enhancement of the Greenway resources. However, each jurisdiction is to retain authority over specific planning and implementation decisions in order to reflect local values, priorities, and availability of resources. Endorsement of the Dry Creek Regional Greenway Vision does therefore not obligate a jurisdiction to revise existing policy language or planning practices, or to implement any project proposed in the Regional Vision. Funding for the potential projects listed within these implementation strategies will be entirely dependent on the availability of resources, and the relative determination of funding priorities within each jurisdiction.

The purpose of this section of the Dry Creek Greenway Regional Vision is to provide a reference for local jurisdictions of supplemental policy language and project suggestions that specifically address the Greenway. Jurisdictions may wish to draw from these policies and projects at their discretion as they review or modify existing planning documents, ordinances, and operations to enhance the Greenway as feasible. The list of potential projects may also be used to develop cooperative grant requests that span jurisdictional boundaries and provide regional benefit.

Vision Statement 1.0 Conserve and restore riparian and aquatic habitat located within the Greenway boundary and enhance value of habitat areas adjacent to the Greenway.

1.1 Encourage the use of native/indigenous plant material within and adjacent to the Greenway whenever feasible.

1.2 Encourage the protection of native plant and animal species and elimination of invasive non-native plants and animal species that aggressively compete with native species.

1.3 Design and locate designated public use areas within the Greenway, including buildings, roads, trails, parking lots, and turf areas, such that impacts upon native vegetation, water quality, increased surface run-off, loss of floodplain storage, and wildlife habitat are minimized to the extent feasible. Incorporate appropriate mitigation measures into all projects to compensate for adverse impacts.

1.4 Develop and implement phased plans with short and long-term measures for the restoration and enhancement of native vegetation and wildlife habitat, and the elimination of undesirable non-native vegetation within the publicly owned

portions of the Greenway. Encourage private property owners to implement such measures.

A. Reintroduce native plants in undeveloped areas of their natural occurrence that have been disturbed by past land use, except in sites of human historical or cultural value.

B. Gradually remove non-native trees and shrubs, except those of historic value, in accordance with a long-range phasing plan. Give priority to removal of those exotics that compete with native vegetation, or exotics that do not have food or nesting value for wildlife.

1.5 Develop a list of trees, shrubs, and herbaceous plants native to the Greenway area and suitable for restoration or residential planting. Include a designation of the appropriate plant communities and habitat for each species. Only plant species on this approved list within the publicly owned portions of the Greenway, except in active parks, turf grass, or agricultural areas. Encourage private owners to use plants from this list.

1.6 Prohibit grading, drainage into, placing of impermeable surfaces, parking of heavy equipment or vehicles, new irrigation installation, and excavation/digging within the drip line of existing native oaks. However, paved trails will be allowed within the drip line provided that the extent of area covered by the trail and the construction methods for the trail do not cause significant damage to the tree. Place irrigated turf areas only in areas where there are no mature native trees that could be damaged by changes in the environment, such as summer watering. In areas where such improvements need to occur, a native oak tree protection plan developed by an arborist is encouraged to minimize damage to the Greenway area.

1.7 Prohibit the removal of native vegetation within the riparian zone of the Greenway except when its presence is an imminent threat to persons or property, contributes to the dangerous restriction of the conveyance of floodwater, or is required for maintenance or replacement of public infrastructure. Removal of native vegetation will occur only when no feasible alternative exists and shall be confined to the necessary minimum in order to protect natural riparian areas. Vegetation removal and revegetation shall occur in a manner that provides for erosion control.

1.8 Where existing land use and ownership permit, consider establishing a Riparian Protection Zone (RPZ), or other similar land use, zoning or easement mechanism, within which activities and resources will be managed to control erosion, to protect and create wildlife habitat, and to protect and restore fisheries and other wetland and riparian values. The native vegetation within the RPZ including trees, shrubs, understory plants, and grasslands would be maintained when it exists, enhanced where it is degraded, or restored where none exists. Unless a jurisdiction has adopted specific standards, the following guidelines are provided for consideration: the recommended width of the RPZ is 175' beyond the top of bank on both sides of the channel or secondary channel, or at least 40' beyond the riparian habitat, whichever is greater.

A. The justification of the 175 ft. width for the RPZ is based on 60-80 feet of protection of the existing tree canopy and other vegetation, 20-30 feet of area outside the canopy for regeneration, 20-40 feet of additional grassland that can be mowed, if necessary, for fire protection, and a possible 25 feet

for anticipated bank erosion due to increased water flows from potential urbanization of the watershed.

B. Recommended activities to be prohibited in the RPZ include the following:

B.1. Mowing or cutting of native vegetation and removal of snags, excepting as required for fire control, flood control, levee operation and maintenance, public infrastructure maintenance, trail maintenance, access, and public safety;

B.2. Structural modifications within the Greenway without approval by the local jurisdiction;

B.3. Stream bank or channel modifications other than as required for protection of property or public infrastructure which, individually or cumulatively, would adversely affect water holding capacity, flood flow, streamside vegetation, and water quality or produce other adverse impacts;

B.4. Use of motorized vehicles, except as required for maintenance, repair, emergency response, or flood control;

B.5. Planting of vegetation other than appropriate native species;

B.6. Use of herbicides except for maintenance of trails, fire breaks, channel conveyance, and levees;

B.7. Facilities for human use except trails, emergency/maintenance roads, flood gauges, essential utilities, public infrastructure, and bridges that may pass through the zone.

C. Recommended activities/improvements to be permitted in the RPZ include:

C.1. Performance of emergency work necessary to protect life or property, including firebreaks.

C.2. Projects to improve fish and wildlife habitat, streamside vegetation, aesthetics, scenic views, environmental quality, and public access along designated trails.

C.3. Maintenance and enhancement of utilities, flood control projects, water channels for erosion control, water quality improvements, service roads, existing road improvements, crossings as needed for new roads, utilities, and public infrastructure, fisheries production, permitted public use facilities, fire protection and resource management activities such as removal of problem beaver dams or other adaptive management measures in preserve areas.

C.4. Recreation activities that do not have an adverse impact on the habitat or flood control value of the riparian protection zone.

1.9 Require conditions for resource protection and the creation of a riparian protection zone (see policy 1.8) along the outer edge of the Greenway as part of any entitlements for all requests for subdivision of property or land use change of property that abuts the Greenway. The RPZ may be created by any means deemed suitable by the local jurisdiction such as an easement or deed restriction.

A. Examine each subdivision and land use change individually to take into account existing conditions which may require adjustments to these requirements.

B. Maintain a portion of the riparian protection zone adjacent to private property as a firebreak. The width and maintenance practices for this

firebreak will be determined by the local fire district or department to reflect local fire hazard conditions.

1.10 Identify and establish migration corridors for terrestrial species within the Greenway with standards such as widths and habitat types. Recommended corridors include:

- Connection between the headwaters of Secret Ravine and the headwaters of Pleasant Grove Creek,
- Connection between Linda Creek and Folsom Lake State Recreation Area (FLSRA), and
- Connection between Miner's Ravine and FLSRA.

1.11 Identify locations for and establish habitat 'islands' for native plants and animal species to support migration, breeding, foraging, and provide cover.

1.12 Identify priority habitat restoration and preservation areas within the Greenway.

1.13 Establish mitigation lands within the Greenway where sensitive habitats are degraded and allow developers to mitigate for losses to native habitats provided mitigation within the Greenway is determined by the regulating agency to satisfy project mitigation objectives.

1.14 Work with State and Federal agencies and special districts to establish and maintain sufficient habitat in water bodies downstream of the Greenway to support salmonid spawning and migration.

1.15 Work with State and Federal agencies to regulate fishing within the Greenway creeks to a sustainable level.

1.16 Preserve water quality in the creeks through a comprehensive approach that includes monitoring, regulation and avoidance of potential impacts, and education on best management practices.

A. Review existing water quality monitoring programs within the study area, and where programs are insufficient to accurately characterize and monitor water quality, establish a regular monitoring and reporting program at appropriate locations along the creeks in the Greenway.
B. Periodically review existing regulations for onsite detention for new developments, and strengthen regulations where needed to maintain stormwater runoff at predevelopment levels.
C. Periodically review existing regulations for onsite detention for redevelopment and strengthen regulations where needed to establish targets for reduction of stormwater runoff.
D. Prevent or eliminate discharge or drainage of pollutants into the Dry Creek Greenway channels.
E. Establish a homeowner education program on the impacts of household chemical use, including herbicides, pesticides, and fertilizers on creek water quality.
F. At a minimum, require that all pets be on leash within public areas of the Greenway and prohibit pets from entering dedicated habitat preserve areas. Educate pet and livestock owners about potential impacts of pets on water and habitat quality, and encourage owners to clean up after their pets. Encourage the development of dedicated off-leash parks in non-Greenway areas.

G. Implement an Integrated Pest Management (IPM) approach for park maintenance that reduces the amount of herbicides and pesticides utilized, especially for parks adjacent to the creeks.

1.17 Conserve and enhance existing salmonid habitat through a comprehensive approach that includes assessment of existing conditions and implementation of appropriate restoration measures.

A. Conduct inventory of existing in-stream habitat including spawning gravels, shelter habitat, and feeding habitat.

B. Identify fish passage barriers and develop strategy to remove barriers and/or enhance passage.

C. Evaluate effectiveness of NPDES Stormwater Pollution Prevention Plans (SWPPP) and monitor and modify as necessary to reduce the danger of siltation of salmonid spawning gravels.

D. Evaluate existing erosion of stream banks and implement bioremediation methods that reduce erosion problems in hot spots while improving fish shelter habitat.

E. Conserve and enhance riparian habitat especially where tree canopies shade stream surfaces.

F. Allow large woody debris to remain within the stream channel except where it compromises floodwater conveyance and increases water surface elevations to such an extent as to cause probable property damage.

G. Monitor water temperature and condition of salmonid spawning gravels to track long-term changes to fish habitat.

1.18 Work with local water providers to maintain water flow in Greenway creeks at adequate levels to sustain the integrity of the water quality, fisheries, riparian vegetation, wildlife, habitat, and other creek-dependent features.

1.19 Discourage the discharge of new untreated concentrated drainage or new piped drainage directly into the creek except for natural surface drainage, unless necessary for public safety and authorized by the local jurisdiction. Potential methods of pretreatment for runoff before discharging to local waters include oil/grit separators, detention facilities and sediment controls.

1.20 Provide for management of beaver population as needed to protect property and public safety while allowing beaver to remain in areas where there presence is not problematic and dams help enrich habitat diversity.

Vision Statement 2.0 Conserve and protect significant historic, cultural, and scenic resources of the Greenway.

2.1 Prior to considering development in the Greenway, conduct an inventory to catalogue known resources so that appropriate decisions regarding protection and preservation of these resources can be determined. Cultural resources include historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic, historical, religious or socio-economic importance. Stewardship of these resources includes the inventory, protection, and interpretation of the cultural heritage they represent.

2.2 Identify representatives of races, tribes, ethnicities or other historical/cultural interest groups to participate in efforts to conserve, restore, and educate the public about historic and cultural resources of the Greenway.

2.3 Identify scenic resources including corridors and vista points within the Greenway and include conditions and mitigation measures for development or infrastructure projects to limit adverse impacts to these resources.

Vision Statement 3.0 Provide a continuous open space corridor to the extent possible from the Placer County boundary at Dry Creek (west of Watt Avenue and PFE Road) to the American River Parkway (ARP) and Folsom Lake State Recreation Area (FLSRA) as part of the 70-mile regional greenway loop, and including the upper portions of the Dry Creek Watershed.

3.1 Plan and manage the Dry Creek Greenway in a manner that is consistent with existing and future regional parkways, including the American River Parkway, the Ueda Parkway, and the Dry Creek Parkway, to provide a high-quality, integrated recreation and open space resource for the region.

3.2 Encourage all agencies with jurisdiction within the Greenway to participate or assist in acquiring properties and easements within the Greenway boundary which will further the vision expressed in this document.

3.3 Designate all unpaved trails for multiple uses, including pedestrians, bicycles, equestrians, and other non-motorized recreational uses that do not unduly damage trails or create safety issues. Designate paved trails for the same uses, excluding equestrians. Use appropriate signage to communicate trial right-of-way protocols for the various types of uses.

3.4 Establish a multi-use trail corridor between Linda Creek and Folsom Lake State Recreation Area (FLSRA) through the Baldwin Lake area.

3.5 Establish multi-use trail corridors between Miners Ravine and the FLSRA along Douglas Boulevard, and between upper Miners Ravine and the FLSRA.

3.6 Establish a multi-use trail corridor along Dry Creek from Cook Riolo Road to the City of Roseville and identify a means for providing passage through or around the UPRR yard.

3.7 Locate and design trails at a range of scales from major north-south and east-west linkages to minor access routes. Major connections may include Dry Creek, Linda Creek, Secret Ravine, and Clover Valley Creek.

3.8 Provide connections to recreational nodes such as parks, schools, community centers, equestrian staging areas, nature centers, and public open space.

3.9 Support alternative non-motorized transportation by forming connections to commercial centers, office parks, schools, downtowns, historic districts, other employment centers, and mass transit stations. Provide park-and-ride staging areas at key locations along Greenway.

3.10 Maximize opportunities for multi-use trails within the Greenway while respecting private property ownership and rights.

3.11 Consider road right-of-ways as prominent open space elements within the plan, suitable for trail elements and connections. Establish connections between on and off street facilities.

Vision Statement 4.0 Provide for management of facilities, natural resources, operations, and activities within the Greenway to assure public safety.

4.1 Actively maintain standards for the protection of public health, safety, and welfare, including flood control, sanitation, security, and fire control.

A. As warranted by public uses and activities, provide and maintain minimal lighting (one foot candle per square foot of surface) to improve public safety. Direct all lighting down to minimize impact on the night sky and away from adjacent residential and habitat areas.

B. Locate barbecues and/or fire pits at a safe distance from combustible materials and where adequate water supplies are available for emergency response.

C. Control and limit fuel loads around structures according to the recommendations of the local fire district or department.

D. Locate and design public use areas to accommodate ease of patrolling.

E. Site trails and other proposed Greenway elements to minimize conflict between Greenway users and adjacent landowners and to be compatible with flood control activities.

4.2 Emergency access and safety procedures are essential to the well being of the Greenway and its users, and shall therefore be accommodated to the extent feasible without compromising the vision expressed in this document.

A. Establish emergency vehicle routes and barricade their entrances to prevent use by non-emergency vehicles, except maintenance vehicles where emergency routes also provide maintenance access.

B. Additional emergency vehicle access, other than that identified in the Plan, shall be as recommended by the fire and police/sheriff departments of the local governments with approval as required by the State Reclamation Board.

C. Established and maintained emergency vehicle routes to provide adequate horizontal and vertical clearance associated with trees and shrubs, and appropriate clearance at turnarounds.

D. Designate and construct selected pedestrian bridges capable of supporting emergency and maintenance vehicles.

E. Install mile markers along the trails at regular intervals as feasible to aid in emergency response. Where appropriate, make markers visible from search and rescue aircraft.

F. Where public access is to be accommodated, locate and maintain vegetation to ensure public safety. Trim or remove dead vegetation to eliminate immediate fire danger. Where public safety is not an issue, retain dead vegetation to provide shelter for wildlife.

4.3 Use slope stabilization methods along the creek when there is a demonstrated need to protect the health, safety, water quality, and welfare of the community. Use methods that will result in minimal damage to riparian vegetation, wildlife and habitat. Where possible, incorporate bioengineering alternatives in preference to traditional-engineered solutions for slope stabilization projects.

4.4 Install emergency phones along the trails where feasible.

Vision Statement 5.0 Provide for the integration of active and passive recreational uses that will have minimal impacts on the natural resources.

5.1 Design all recreation and public use activities within the Greenway to minimize impact to natural vegetation, wildlife, habitat, flood control, and water quality and to be compatible with natural resource protection.

5.2 Conduct and manage group activities in such a manner that the impact on the natural habitat, as well as other users in the Greenway, is minimized.

5.3 Install picnic facilities in locations with appropriate means of access and limit the size of such facilities to minimize the impact on the Greenway and other users.

5.4 Do not allow development of new organized game fields for active recreation within the Greenway except in areas designated as public parks.

5.5 Allow only those activities and public uses that are compatible with the Greenway vision statements within the Greenway.

5.6 Develop appropriate continuous facilities for bicycle, equestrian, and pedestrian use throughout the Greenway compatible with open space and natural resource protection.

5.7 Limit impacts of recreation on sensitive habitats by use of signage, plantings, post-and-cable fencing or other control measures.

5.8 Minimize impact of uncontrolled fishing access to the stream banks by providing primitive and developed fishing access areas.

5.9 Limit all trail users including equestrians, pedestrians, and bicyclists to designated trails.

5.10 Prohibit motorized off-road vehicle use within the Greenway and restore habitat in areas of unauthorized historical off-road vehicle use.

5.11 Where practical, trails should be combined with firebreaks and maintenance roads and surfaced with the most suitable materials to minimize impact on vegetation and other natural resources.

5.12 Design paved bicycle trails to be compatible with the Caltrans standards when feasible and to include shoulders for pedestrian use.

5.13 Where resources are to be protected, restrict and limit access to designated trails to avoid potential use conflicts. Establish patrols, use signage, barriers, and other enforcement systems to prohibit unauthorized use of sensitive habitat areas.

5.14 Establish a hotline to report infractions to sensitive area use restrictions.

5.15 Where site conditions allow, design Parkway facilities at a minimum to accommodate access for people with disabilities as required by the Americans with Disabilities Act of 1990.

5.16 Encourage the development of Greenway pedestrian, equestrian, and bicycle trails that provide connections with nearby communities. Whenever possible, locate these connecting trails off-street.

5.17 Wherever possible, design mass transit routes and stops to provide public access to the Greenway, preferably at designated trail entry locations.

5.18 Develop a comprehensive interpretive and informational signage program to communicate proper use of trails, access restrictions, routes and connections, safety issues, and habitat protection considerations.

Vision Statement 6.0 Maintain critical flood conveyance and capacity within the Dry Creek floodway.

6.1 Restore historical topography and connectivity of the floodplain to convey floodwaters where possible. Encourage development of regional off-channel detention basin facilities and floodplain restoration projects.

6.2 Maintain the natural topographic diversity of Dry Creek where possible. This includes flood flow management involving floodplain restoration techniques. Such practices may include meander sequences, low flow terraces, and secondary bypass channels where appropriate. In order to increase stream conveyance, the construction of secondary overflow channels is preferred to channelization. Encourage the construction of low terraces to accommodate widening of the channels.

6.3 When designing channel modifications for flood control purposes, consider and minimize adverse impacts on environmental values, including riparian vegetation, fish passage, wildlife habitat, slope stability, aesthetics, and natural stream processes. Bioengineered techniques are preferred over traditional channel engineering.

6.4 Pursue channel realignment only when absolutely necessary to eliminate flood hazards and when alternative flood protection measures (e.g., levees, restored and created bypass channels) are not feasible.

6.5 Whenever possible maintain riparian vegetation when implementing channel modifications. Modifications resulting in loss of vegetation will be mitigated at a ratio consistent with the local jurisdiction policies, and regulatory agency requirements, whichever is greater. Implement such mitigation within or adjacent to the Greenway.

6.6 When designing improvements for Greenway projects, consider existing regulations from the County, Cities and Placer County Flood Control and Water Conservation District requiring no net increase of fill within the floodplain and no rise in water surface elevations.

6.7 When designing stream crossings, consider impacts to water surface elevations and changes to floodplain limits.

Vision Statement 7.0 Develop and implement the Greenway in a manner that is consistent with existing plans developed by the local governments and special districts with Greenway jurisdiction.

7.1 Provision for the design, development, and operation of publicly owned lands within the Greenway boundary is the responsibility of the government jurisdiction or entity that owns the property. However, jurisdictions are encouraged to work cooperatively to achieve the greatest regional benefit.

7.2 When considering uses and activities not otherwise addressed in this document, binding direction will be provided by approved local zoning and other applicable ordinances, general plans, and community plans.

7.3 Conserve and manage the open space resources of the Greenway in a manner that is consistent with the County of Placer's Legacy open space and agricultural conservation program and other regional or local open space and resource plans.

7.4 Public acquisition of private property or easements for non-essential public uses will rely on the willing participation of the private property owner.

7.5 Implement this Plan and manage the Greenway in a manner that is consistent with any agreements between local jurisdictions and regulatory agencies, and the resource permitting requirements of federal, state, and local agencies. These include MOU's for creek channel maintenance, and programmatic agreements such as an NCCP or HCP.

7.6 Establish multi-use trails in the Greenway that support bicycle corridor connections proposed in the Placer County Regional Bikeways Plan, the City of Roseville Bikeway Master Plan, the Town of Loomis Bikeway Master Plan and other cities.

7.7 Encourage local jurisdictions to support the Greenway vision in all resource management and land use decisions that impact the Greenway plan area.

Vision Statement 8.0 Coordinate with agencies and jurisdictions to secure adequate funding and resources to sustain and complete implementation of the Greenway.

8.1 Encourage Greenway jurisdictions to collaborate with each other and other regional partners to identify and apply for appropriate local, state, and federal grant funds that would be used to support Greenway implementation, maintenance, and operations.

8.2 Build private/public partnerships to pursue funding for Greenway initiatives from a variety of sources.

8.3 Seek contributions from community interest groups to supplement and enrich interpretive and public access programs, where possible.

8.4 Identify and incorporate appropriate revenue generating opportunities. Appropriate activities are those that do not adversely impact the Greenway resources or otherwise conflict with the vision expressed in this document.

8.5 Develop mitigation opportunities within the Greenway to encourage the enhancement and restoration of natural open space areas. All mitigation projects within the Greenway are to be consistent with the Greenway vision and include provisions for ongoing maintenance.

8.6 If feasible, establish a Greenway mitigation fund that will receive in-lieu fees from development projects for which adequate mitigation cannot be implemented on-site.

8.7 Pay mitigation fees collected for projects within the Greenway to the Greenway mitigation fund to support implementation of Greenway habitat improvements.

Vision Statement 9.0 Propose strategies for immediate and long-term land use planning and management practices within the Greenway.

9.1 Limit new agricultural uses (including livestock pasturage) within the Greenway to those that are conducted in a manner that is consistent with the vision for the Greenway, including protection of water quality and habitat resources. Encourage existing agricultural operations to implement such practices.

9.2 Provide buffer areas within the Greenway of a width that is sufficient for screening incompatible views and disruptive noise associated with adjacent land uses and to screen sensitive habitat areas from public intrusion.

9.3 When possible, use open space areas as a buffer between the Greenway and adjacent land uses.

9.4 Do not allow land uses adjacent to the Greenway that will have adverse impacts on Greenway resources, or require mitigation for such impacts to the satisfaction of the local jurisdiction.

9.5 In order to preserve aesthetic qualities of the Greenway, set back new structures on properties adjacent to the Greenway far enough from the outer edge of the riparian corridor and/or use building and screening techniques to minimize visual impact as seen from the Greenway. The specific set back and screening required will vary depending on the location and style of the structure.

9.6 Where possible, land use bordering the Greenway should favor public frontage rather than private frontage. As an example, roads running parallel to the creek are preferred to backyards or backsides of commercial buildings directly facing riparian protection areas.

9.7 The orientation of new buildings placed adjacent to the Greenway should be towards the Greenway, with landscaping that links the appearance of the buildings to the riparian landscape.

9.8 Require an erosion control and revegetation program for all projects that involve unavoidable disturbance of creek banks, such as installation of utility infrastructure, off-channel detention, and trail creek crossings. The program may be included in the resource permit approval process. Include in the erosion control program measures to minimize damage to riparian vegetation, wildlife, and habitat. Where possible, incorporate bioengineering alternatives to traditional-engineered solutions for slope stabilization projects. Environmentally damaging materials, such as rubble, gunite, cement, sandbags, bulkheads, fences, and tires are not to be used for permanent erosion control features when a feasible bio-engineered alternative exists. Where vegetation measures alone are insufficient consider the use of rock and wire mattresses, gabions or wire mesh with overplanting to restore vegetation in the area and enhance the aesthetic and natural values of the creek bank.

9.9 Implement new development or redevelopment projects within or adjacent to the Greenway in a manner that is consistent with this document.

9.10 Require any new development or redevelopment project that includes area within the Greenway boundary to designate land as public open space as a condition of approval consistent with jurisdictional policies. Determine ownership and maintenance of the designated open space according to the policies of the local jurisdiction.

9.11 Encourage the inclusion of policies in new and existing CC&Rs and/or HOA documents to help reduce the adverse impacts to the Greenway resources associated with residential landscape management practices such as the use of invasive plant species, removal of bank stabilizing vegetation, and excessive application of fertilizers and herbicides.

Vision Statement 10.0 Promote the Greenway as a local and regional asset through collaboration and coordination with regional partners, resource agencies, and public education.

10.1 Develop cooperative working relationships between Greenway jurisdictions including Placer County, the Cities of Rocklin and Roseville, the Town of Loomis, special districts, and agencies to ensure positive pursuit of the Greenway vision.

10.2 Placer County Flood Control and Water Conservation District will coordinate flood control improvements within the Greenway with Federal, State and local jurisdictions consistent with the vision expressed in this document. Within Roseville City limits, the City will take the lead on flood control project designs and will coordinate with PCFCWCD.

10.3 Encourage existing non-governmental organizations such as the Dry Creek Watershed Council, the Dry Creek Conservancy, Placer Land Trust, Friends and Lovers of Miner's Ravine, the Loomis Basin Horsemen's Association and homeowners' associations to include active support for Greenway implementation in their organizational objectives.

10.4 Encourage community support of the Greenway through the creation of special interest groups/organizations and special events such as:

- Friends of Dry Creek Greenway,
- Greenway Volunteer Patrol,
- Adopt-A-Creek Program,
- Equestrian and Bike Trail Patrols
- Creek and Greenway Clean Up Day;
- Annual Tree Plantings, and
- Restoration Programs.

10.5 Provide opportunities and create mechanisms to educate the public on the value of the Greenway and its resources.

A. Develop and coordinate educational outreach programs through local schools, environmental organizations, and special interest groups.

B. Establish nature study areas and interpretive centers to facilitate public education.

C. Develop a comprehensive interpretive program for the entire Greenway to provide for a continuous, integrated educational experience for visitors to all parts of the Greenway. This program should include such features as: signs, exhibits, nature trails, guided walks and tours, publications and media, and research.

D. All signs (e.g., interpretive, informational, directional, etc.) in the Greenway shall have consistency of design, color and materials and shall blend with the natural environment.

E. The design and placement of all signs shall consider access for people with disabilities.

6.0 PROPOSED GREENWAY RECREATION IMPROVEMENTS

The Dry Creek Greenway forms a major open space network within Placer County. Greenway corridors follow each of the major streams: Dry Creek, Linda Creek, Cirby Creek, Strap Ravine, False Ravine, Miners Ravine, Secret Ravine, Antelope Creek and Clover Valley Creek. These corridors are defined by the greater of the 100 year floodplain, valuable riparian habitat, open space designated in the Placer County and Roseville General Plans, 100 foot buffers around perennial streams and 50 foot buffers around intermittent streams. These factors were selected because Placer County currently has regulations limiting development in these areas, and these zones were thought sufficient to meet the goals of the Greenway such as maintaining flood capacity, protecting water quality, providing recreational opportunities where appropriate, and preserving habitat in and around the creeks.

This chapter of the Greenway Plan describes the proposed improvements that make up the Dry Creek Greenway. These improvements can be categorized into three areas: corridor types, trails and nodes.

Section 6.1 addresses appropriate activities in areas of the Greenway. Section 6.2 describes types of trails in the Greenway, key connections, guidelines for trail-stream crossings and standards for trail design. Section 6.3 on nodes presents types of staging areas, activities allowed at each, and signage. Management of trails and nodes will be addressed in the Management Strategy section of this document.

6.1 Corridor Types

The Dry Creek Greenway is divided into three corridor types based upon the role that each section plays in the overall functioning of the Greenway: recreation, habitat with potential recreation, and habitat only. Some of the major factors used in defining the spatial extent of these types include the importance of Greenway trail connections to bicycle, pedestrian and equestrian trails in the local jurisdictions through which the Greenway passes; existence of open space and likelihood of acquiring trail access, sensitivity of the creek system to disturbance, and respect for private property rights.

"Recreation" corridors are focused on integrating recreational uses with habitat preservation and enhancement. "Habitat with potential recreation" corridors include areas with valuable or sensitive habitat that may include some recreational usage, if such usage can be harmoniously blended with the existing habitat and local property owners are willing. "Habitat only" corridors are those areas that should be managed to preserve and enhance riparian and stream habitat.

Each of these corridor types is discussed in greater detail in the following text.

6.1.1 Recreation

Recreation plays a critical role in the Dry Creek Greenway. The Greenway forms the final critical link in a recreational loop trail system that encompasses much of the Sacramento metropolitan area. The Dry Creek Greenway connects the Dry Creek Parkway (DCP) in Sacramento County to the Folsom Lake State Recreation Area (FLSRA) and the Pioneer Express Trail. The other elements of this loop include The American River Parkway and the

Ueda Parkway. This sixty to seventy mile trail system defines a contiguous, primarily off-street bicycle and pedestrian trail for residents and visitors to the Sacramento area to experience the regional waterways, riparian vegetation and wildlife.

The sections of the Greenway within the recreational designation are located in the lower creek reaches, along Dry Creek, Linda and Cirby Creeks, and the lower portions of Secret and Miners Ravines. These corridors form major Class-I bikeways along these waterways and connect the DCP and FLSRA to several points along Sierra College Boulevard and the existing and proposed bicycle trail networks in Roseville and Placer County[20]. The primary connection between DCP and FLSRA occurs along Dry Creek, Cirby Creek, Linda Creek, Swan Stream (N. branch Linda Creek) and an existing unpaved trail along the Placer-Sacramento County Line through Baldwin Lake Reservoir. This Baldwin Reservoir connection is not a part of the Dry Creek Greenway, but forms a critical link in the loop trail system. The unpaved trail follows an existing Placer County easement, and this plan recommends that it be upgraded to a Class I bikeway.

A secondary connection from the Greenway to the FLSRA follows Dry Creek upstream from its confluence with Cirby Creek near Riverside to Miners Ravine, then along Miners Ravine to the Sierra College Boulevard overcrossing. From there, the bikeway follows Sierra College Boulevard as a Class II trail, then parallels Douglas Boulevard until it becomes a Class-I off-street trail east of Auburn Folsom Road. It intersects the Pioneer Express Trail that follows the west shore of Folsom Lake. The section of the trail along Douglas Boulevard should be located within the existing 300 foot buffer south of Douglas and separated from the street by a wide planting strip. Street crossings in this stretch could be handled by a separate pedestrian/cyclist controlled light or the existing traffic control structures on Douglas.

A third major recreational corridor follows Secret Ravine from its confluence with Miners Ravine upstream to China Garden Road, where it links to an on-street Class II route.

Several smaller open space connections form additional recreational trail corridors in the Greenway, generally connecting the larger regional recreational corridors to existing or proposed on-street bike routes. Table 6-1 summarizes the recreational corridors proposed in this plan:

Table 6-1 Recreational Corridor Locations

Primary Route (connects DCP to FLSRA)	Dry Creek from Sacramento-Placer County line upstream to Cirby Creek, Cirby Creek to Linda Creek confluence, Linda Creek to Swan Stream (N. branch Linda Creek) confluence, Swan Stream to powerline corridor east of Sierra College Boulevard, Baldwin Lake connection.
Major Routes	Dry Creek from confluence with Cirby Creek to Miners Ravine confluence, Miners Ravine upstream from confluence with Antelope Creek to Sierra College Boulevard,

[20] Roseville Bikeways Master Plan & Placer County Regional Bikeway Plan

	Secret Ravine upstream from confluence to approximately 500 feet downstream of Hidden Ct.
Secondary Routes	Dry Creek intermittent tributary east of Walerga Rd from confluence to Crowder Lane, following existing trail, Cirby Creek from confluence with Linda Creek to Douglas Blvd, Strap Ravine from confluence with Linda Creek to Sierra College Blvd, Swan Stream from powerline corridor to Roseville Parkway, False Ravine from confluence with Miners Ravine, northeast to Secret Ravine Parkway and Scarborough Drive, Antelope Creek, from Sunset Blvd to approximately 1200 feet upstream of Village Oaks Dr.

Recreation corridors perform both as linear transportation routes and as recreational destinations. They may contain multi-use trails; nodes that provide access to trails and may include parking, restrooms and/or interpretive signs; existing and proposed parks adjacent to the Greenway; fishing access points or platforms; overlooks; picnic areas; or interpretive sites.

6.1.2 Habitat with Potential Recreation

Greenway corridors designated "Habitat with Potential Recreation" include areas of high quality riparian habitat that may be sensitive to intensive recreational uses. In these locations, staging areas should be low-impact, and activities should be confined to linear paved or unpaved trails. These corridors are also locations where multi-use trails form important connections to existing routes but may not be feasible due to private property or other access issues. Further investigation is required to identify willing landowners and evaluate the potential of locating trails along these corridors. Actions appropriate in the "Habitat with Potential Recreation" corridors include bicycling, hiking, horseback riding, habitat preservation and enhancement, fishing, bird watching, nature interpretation, maintenance of regional flood control facilities, and other low-impact activities.

These corridors may or may not include recreational trails, depending upon ability of the local jurisdictions to acquire property along the creeks, sensitivity of habitat in those areas, availability of other bicycle and/or equestrian routes, and restrictions to trail development such as existing land use and bridges. The "Habitat with Recreation" designation typically occurs in the central portion of the watershed where the more privately held upland stream corridors link to the recreation corridors. Table 6-2 lists proposed locations for these trail types. Major routes are those corridors that form important connections to the existing and proposed City and County bike trails, and secondary routes are those corridors that form minor or local connections to existing communities or bike routes.

Table 6-2 Habitat with Potential Recreation Corridor Locations

Major routes	Secret Ravine from approximately 500 feet downstream of Hidden Ct. to King Road, Antelope Creek from confluence with Dry Creek upstream to Springview Drive, Clover Valley Creek from Rawhide Road upstream to English Colony Way.

Secondary routes	Clover Valley Creek through Sunset Whitney Country Club, Miners Ravine from approximately 1800 feet upstream to approximately 2500 feet upstream of Sierra College Boulevard, following the existing multipurpose trail, Linda Creek tributary from Roseville Parkway to Pastor Drive.

6.1.3 Habitat Only

High quality riparian and wetland habitats exist along many of the creeks in the study area, especially in the upper watershed. Riparian stands, often dominated by valley oak, blue oak and interior live oak, form mostly contiguous corridors from the lowlands near the Placer-Sacramento County line to the uplands near the town of Auburn. One of the goals of the Greenway is to preserve and enhance riparian and aquatic habitat located within the Greenway boundaries and enhance value of habitat areas adjacent to the Greenway by providing connecting corridors and habitat diversity. The Greenway plan recognizes the need to preserve and enhance the riparian corridors to permit migration of local animal and fish species, particularly spawning salmonids that have been identified in Miners Ravine and Secret Ravine. The plan also acknowledges the need to respect private property rights and privacy and recognizes that recreational trails are neither desired nor appropriate in all areas of the Greenway.

The goal of the "Habitat Only" corridors is to provide high quality, contiguous riparian and aquatic habitat from the more recreationally focused corridors in the lower reaches of the Greenway to the upper parts of the watershed. The plan for these corridors is that they will be managed for quality of habitat, if in public ownership. If privately held, property owners will be encouraged to maintain existing riparian areas and enhance degraded locations.

The majority of the "Habitat Only" corridors fall in the unincorporated areas of Placer County. The County currently has regulations that prohibit development within areas of sensitive habitat, floodplains or within 100 feet of a perennial stream or 50 feet of an intermittent stream. County native oak tree regulations prohibit cutting of native oaks over 6" diameter at breast height (DBH) or 10" DBH aggregate (for multi-stemmed trees), even on private land. A permit is also required to remove a native tree of any size in a riparian area.

In addition to supporting these restrictions, the Greenway plan makes the following additional recommendations within the "Habitat Only" corridors:

- Removing non-native plants and replanting with native species,
- Limiting removal of standing snags (dead trees) except where necessary for public safety,
- Limiting of removal of native vegetation from stream channels, except where such removal, if not done, presents a safety issue with respect to floodwater conveyance, fire control or public safety,
- Limiting of removal of large woody debris (LWD) from stream channels, except where such removal, if not done, presents a safety issue with respect to floodwater conveyance. Where LWD presents a potential safety issue, orienting the downed snags parallel to stream-flow may reduce the risk,

- Revegetation of poor quality habitat areas with native species such as valley oak, blue oak, interior live oak, black cottonwood, alder or other California riparian species native to this area,
- Restoration of excessively eroding stream banks using bioengineering techniques that benefit aquatic species and wildlife,
- Restoration of degraded salmonid habitat through reduction of siltation sources, growth of a healthy riparian canopy that shades the stream and provides root masses for cover.

Figure 6-1 Habitat Only Corridor

While these activities are recommended in all of the Greenway corridors, they are especially applicable to the habitat-only management areas. See the Potential Greenway Implement-ation Strategies, Chapter 5, under Goal 1.9, Riparian Protection Zone for additional recommendations.

Figure 6-1 shows an example of a "Habitat Only" corridor between an existing large parcel residential neighborhood and an agricultural land use. This simulation depicts a rural landscape in the uplands of the watershed, where floodplain influences are lesser than lower in the watershed. The intact riparian area consists of valley oaks, interior liveoaks, blue oaks, cottonwood, alder and willow and is managed for the quality of the habitat. The adjacent agricultural fields, their maintenance roads and residential landscaping are set back from the intact riparian vegetation.

Table 6-3 lists the "Habitat Only" corridors.

Table 6-3 Habitat Only Corridors

Major migration corridors	Miners Ravine from approximately 2500 feet upstream of Sierra College Boulevard to headwaters, Secret Ravine from King Road to headwaters, Antelope Creek from approximately 1200 feet upstream of Village Oaks Dr. to headwaters.
Secondary habitat corridors	Linda Creek mainstem from Placer-Sacramento Count line to headwaters, Swan Stream from Pastor Drive to headwaters, Strap Ravine intermittent tributary between Roseville Parkway and Sierra College Boulevard, from confluence to headwaters, Remnant oak woodland on north bank of Dry Creek tributary west of Walerga Rd,

	Dry Creek intermittent tributaries (2), between Walerga Rd and Cook Riolo Rd, extent as shown in Figure 2-3, Dry Creek intermittent tributaries (2), between Cook Riolo Rd and Roseville City limits, extent as shown in Figure 2-3, Remnant Oak stand on north bank of Miners Ravine near Sunrise Boulevard crossing, extent as shown in Figure 2-3, Secret Ravine intermittent tributary downstream of Roseville-Rocklin City limits, extent as shown in Figure 2-3, Secret Ravine tributary south of Rocklin Road crossing, from Aguilar Drive to Rocklin City limits, Antelope Creek from Springview Drive to Sunset Boulevard, Clover Valley Creek from English Colony Way to headwaters.

6.2 Trails

Three types of approved trails occur in the Greenway: paved bike/pedestrian, combined, and unpaved multipurpose. Paved bike/pedestrian trails occur in those areas where equestrians are prohibited and are typically 10' wide paved trails with 2' shoulders. Combined trails accommodate bicycles, pedestrians and equestrians. Bicycle and equestrian traffic may be separated by a strip, often 5' or more, or the paths may abut one another where space is limited. Unpaved multipurpose trails are unpaved, often being compacted dirt or decomposed granite. They may accommodate equestrians, able pedestrians or mountain bikes.

Trails should be located outside of riparian corridors, although in areas where an incompatible land use abuts the riparian corridor, as in the Morgan Creek Golf and Country Club, it may be necessary to locate the trail in the riparian fringe to avoid health and safety issues.

6.2.1 Paved Bike/Pedestrian

The paved trails within the City of Roseville in the Recreational Greenway corridors are for bicyclists and pedestrians, since current City regulations prohibit equestrians on public trails. Additionally, recreational Greenway corridors outside of the City of Roseville that do not form significant connections with the equestrian trail network[21] are designated "paved bike/pedestrian" as well. Other than lacking an equestrian path, these trails are similar to the combined trails found in the remaining Greenway corridors with a recreational focus. They comply with the Class I designation requirements used by the City of Roseville, with the following standards:

- Separated from the street system,
- Exclusively for bicyclists, pedestrians and motorized scooters that travel less than 5 mph,
- Minimum width of 10 feet with 2 foot graded shoulders on each side. These shoulders provide recovery space to the path and must be clear of obstacles.

This plan includes the following additional recommendations:

- Striping should be used to indicate traffic lanes,
- Because the bicycle system also functions as emergency access for vehicles such as utility/maintenance and fire control, paths should be designed to accommodate these vehicles with respect to turning radii, grades, etc.,
- Rules of the road should be published that indicate right of way (see standards section which follows),
- Where the trail is adjacent to an incompatible land use, a berm or combination of berm and planting should be used to visually and spatially separate the trail from the adjacent use. In many circumstances, a trail is seen as a highly desirable amenity to a residential community, and residents often install gates in their backyards for more convenient access. However, in some areas, residents may be sensitive to public

[21] As provided by the Loomis Basin Horseman's (LBHA) Association, Map titled "Loomis Basin Horseman's Association Trail Map", August 31, 1999.

access or view issues. In these cases, a berm may also be used to separate paved trails from private residential backyards.

Figure 6-2 and Figure 6-3 illustrate a paved pedestrian/bike trail.

Figure 6-2 Paved Bike/Pedestrian Trail

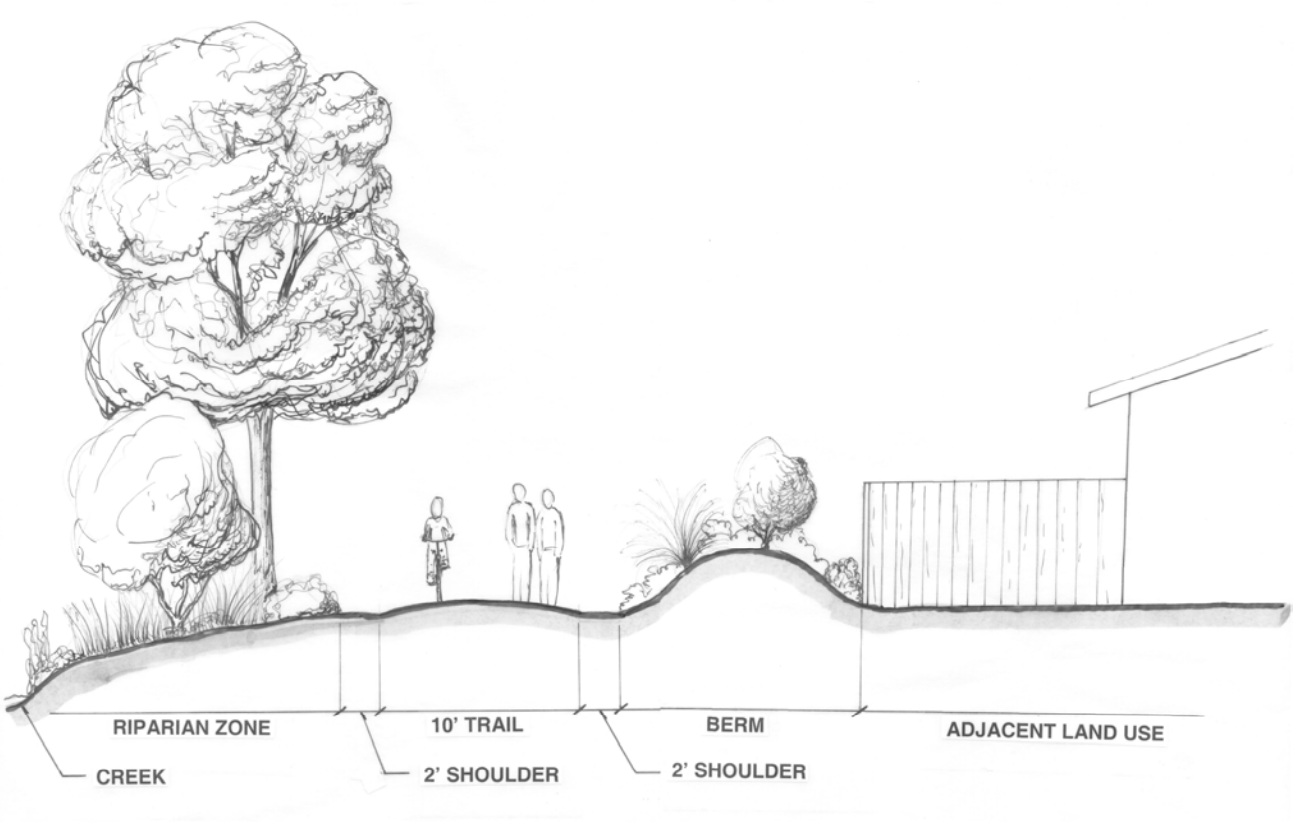

Figure 6-3 Cross Section of Paved Trail

6.2.2 Combined

Combined trails are located within the Greenway outside of the City of Roseville in areas where equestrian trails are indicated as proposed on the LBHA map or recommended by this plan. In addition to the trails proposed on the LBHA map, this plan recommends equestrian trails be developed along the creeks where the trails will connect to the larger equestrian trail network in two locations: lower Dry Creek from the Placer-Sacramento County line to the Atkinson Road crossing, and upper Secret Ravine from King Road to China Garden Road. The Dry Creek connection will extend the equestrian trail in the Dry Creek Parkway four to five miles into Placer County. Nodes at both ends of this trail provide equestrians with parking and access to this trail segment. The Secret Ravine trail is within a "Habitat with Potential Recreation" corridor, and would require acquisition of properties or easements to create this connection. It connects to the existing unpaved multipurpose trail on King Road and provides equestrian access to approximately 4.5 miles of the Greenway along Secret Ravine.

These combined trails are similar in design to bike/pedestrian trails, except for the addition of a six to eight foot unpaved equestrian trail. This trail should be separated from the bike path by an unpaved strip that is planted with native grasses or perennials, where sufficient easement width is available. If space is not available, the equestrian path can abut the pedestrian path.

Figure 6-4 depicts a cross section through a combined path.

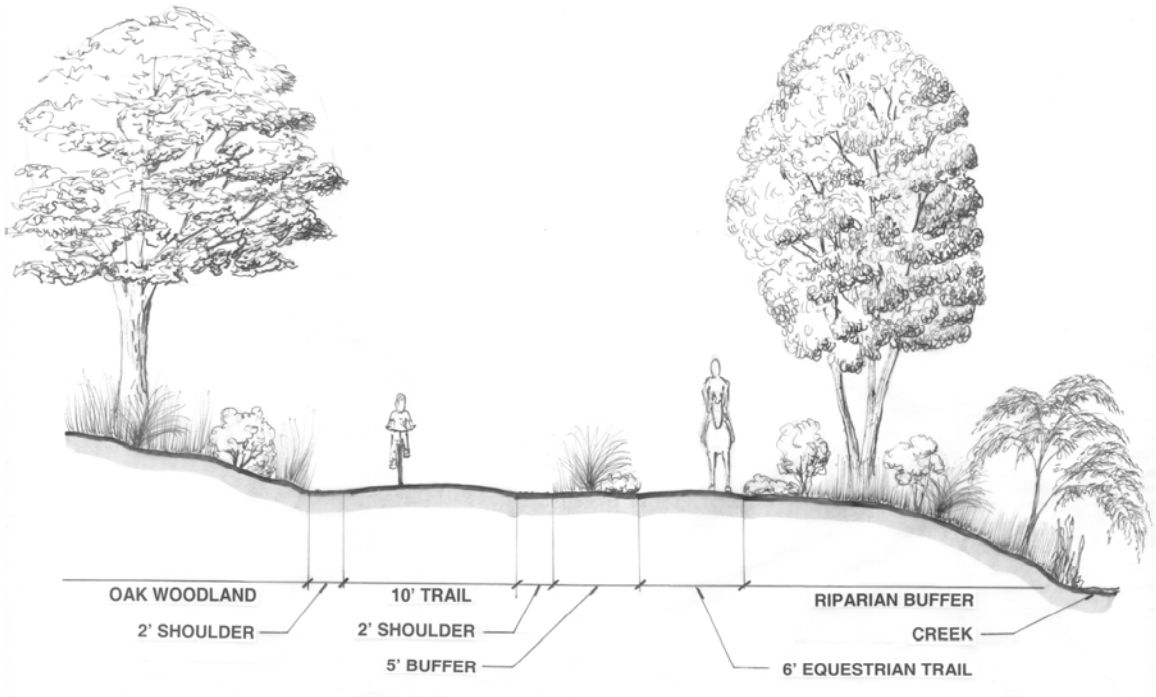

Figure 6-4 Combined Trail Cross Section

6.2.3 Unpaved Multipurpose

Unpaved multipurpose trails are dirt paths used for walking, jogging, mountain biking, horseback riding and other non-motorized off-road activities. These trails are typically six

to eight feet wide with a three-foot security buffer on either side. This buffer should be clear of obscuring vegetation (not including tree trunks) from three feet to eight feet high to provide a greater feeling of security to trail users.

The "Habitat with Potential Recreation" corridors are appropriate places for unpaved multipurpose trails, if private property owners are amenable to public access. There are also areas in the "Habitat Only" corridors where unpaved trails may be located such as already exists in the Miners Ravine Nature Preserve. These trails may have different rules from the larger Greenway system depending upon programmed uses; for example, a recreational trail in the Greenway may allow mountain bikes, but an unpaved trail in a nature reserve may only allow pedestrians.

Unpaved multipurpose trails in the Greenway may represent a transitional phase. For example, any Greenway trail may be developed as an unpaved path following acquisition of easements or property but before funding is secured for construction of a paved bike/pedestrian or combined trail.

A representative cross section of an unpaved multipurpose trail is shown in Figure 6-5.

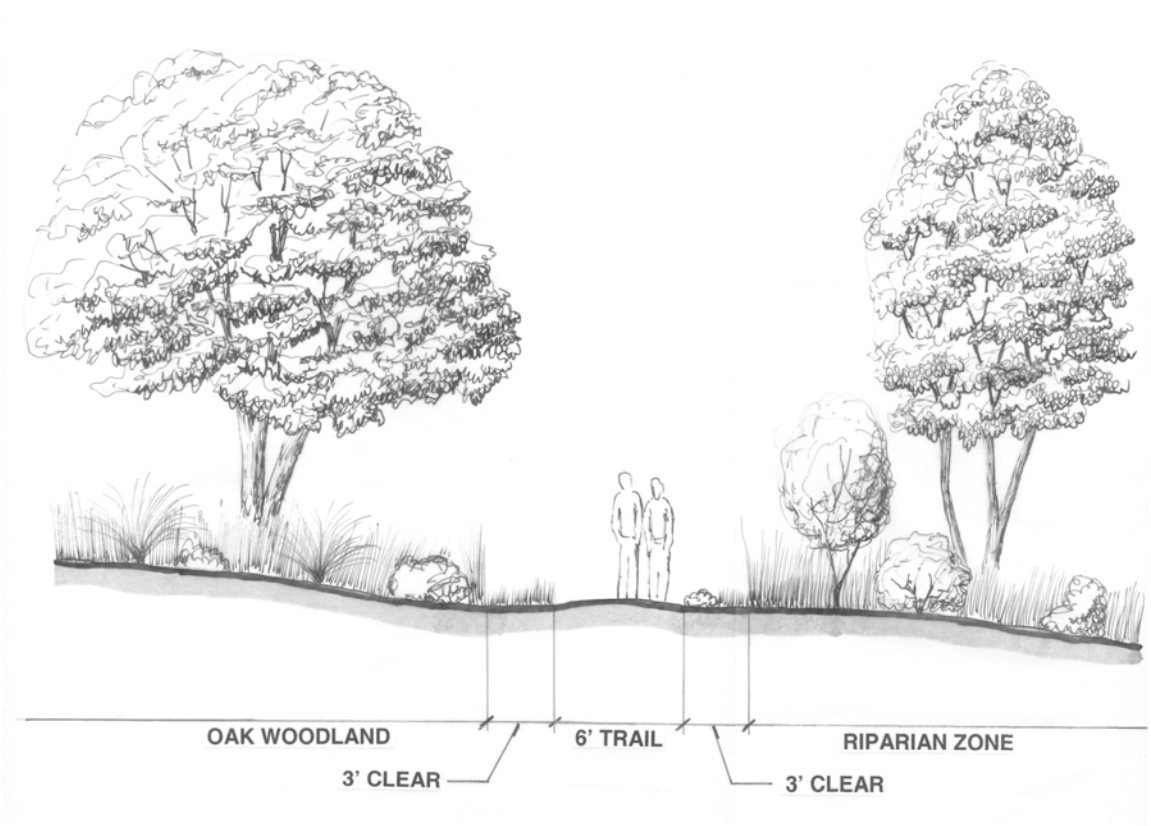

Figure 6-5 Cross Section through an Unpaved Trail

6.2.4 Trail Connections

Trail connections within the Greenway occur where bikeways from the City of Roseville and Placer County cross the Greenway. Sometimes, a node may be located at these intersections, in which case signage associated with the node will provide directions;

otherwise, signage at the trail crossing will provide directions and indicate the Greenway route.

Trail crossings may be at grade or grade-separated, depending upon local topography and presence of bridges. If grade-separated, appropriate transitions must be made between trails. If at-grade, stop signs should be used to control bicycle traffic, unless a road is also present, in which case traffic signals may be appropriate, depending upon the volume of traffic.

In areas of the Greenway where a trail connection is needed through private property, and easements or acquisition cannot be obtained, the route may use local streets to bypass the inaccessible properties. If this is done, the connecting trail should be separated from the street with a planted buffer strip as illustrated in Figure 6-6. The illustration shows a 10 foot buffer strip incorporating street trees and a stormwater interception swale.

Figure 6-6 Greenway Path Adjacent to Local Road

6.2.5 Guidelines for Trail Development and Maintenance

The Dry Creek Greenway Regional Vision envisions a series of open space corridors following the primary streams within the Placer County portion of the Dry Creek watershed. These corridors take the form of recreation corridors in some areas and habitat preservation corridor in others. The primary objective of the recreation corridors is to interweave habitat with recreational trails to benefit trail users while preserving and protecting habitat. The primary objective of the habitat preservation corridors is to restore and enhance riparian and aquatic habitat. This section presents general guidelines for trail and habitat development and maintenance.

The trails proposed for the Greenway that are not currently a part of an existing bikeway master plan are as follows:

- Unpaved trail along Dry Creek from the Sacramento-Placer county line to the node at Atkinson Road,
- Paved trail along Secret Ravine from China Garden Road to Brace Road,
- Unpaved trail along Secret Ravine from Sierra College Boulevard to King Road,

- Paved trail along Strap Ravine connecting from Linda Creek to Sierra College Boulevard,
- Paved trail along False Ravine from Secret Ravine Parkway to Scarborough Drive,
- Paved trail on Swan Stream from the powerline corridor to Pastor Drive.

These trails should conform to the following standards:

Paved Trails

Width:	2-Way – 10' minimum with 2' D.G. shoulders, preferably striped
Surface:	Paved
Terrain:	5% maximum
Separate:	When possible
Speed:	15 MPH maximum

Unpaved Trails

Width:	6' minimum
Surface:	Dirt
Terrain:	Varied
Separate:	Yes

6.2.6 Stream Crossings

There will be places in the Greenway where it is necessary for the trails to cross the stream. This may be due to the location of publicly owned parcels, a negotiated easement, a connection to a local or regional bikeway, access to a node, or where the trail leaves the creek. Stream crossings may be low-flow or above-channel.

Low-flow crossings typically entail a low bridge or weir structure over which the trail passes. A bridge is the preferred, though higher cost, option due to its lesser impact on fish migration and stream-flow. If a weir is used, the stream usually passes through one or more culverts. Whichever structure is chosen, it is designed to be inundated when the stream is swollen with stormwater runoff. This usually works well in a bike trail system on the West Coast, because trail use is often minimal in the rainy season, especially during or shortly after storms when the stream banks are likely to be full. Costs are also lower for a low-flow structure than for a standard bridge; however, these systems can carry a higher liability unless controls are installed to close the trail or inundated trail segments during wet weather.

Bridges located above the channel avoid these problems, but may cost $30,000 or more (in 2003 dollars) for a small (30') span pedestrian and bike bridge. These structures should be designed to avoid inundation during high-flows.

6.2.7 Road Crossings

Roads and railroads crossing the Greenway and vehicular bridges over the streams pose a challenge to trail development within the Greenway. Each crossing must be studied to determine if the trail can go under, over or through the crossing. Routing of trails under bridges is often the preferred option, if feasible, because it interrupts the trail experience less, avoids conflicts between trail users and automobiles, and is often the lower cost

alternative. Under-bridge trail crossings are likely to be low-flow routes, because they have to descend the streambank to clear the bridge, and thus become inundated during large storm events when the creeks are swollen with rainwater.

The Union Pacific Railroad crossing is a particularly significant barrier which has already been discussed. The preferable option for this route is an under-bridge trail with an alternate route in the event the low-flow trail is flooded; however, this requires additional study in collaboration with the railroad to determine feasibility.

Other significant road crossings in the Greenway include the Interstate-80 bridges over Linda Creek and Secret Ravine. These bridges should have sufficient clearance for Greenway trails to pass beneath them, but additional studies are necessary on all bridge overcrossings where trails are planned to verify feasibility.

6.2.8 Standards for Trail Design

The following standards for trail design are recommended for the Greenway. Implementation of these standards will provide consistency to the trails within the Greenway.

1.0 Design trails to avoid high-quality habitat areas to minimize impacts to sensitive vegetation. This includes habitat associated with CNDDB species (see Figure 1-12).

2.0 Trail Signage

   A. Provide trail signage at nodes to indicate who has right-of-way on the trails between bicyclists, pedestrians and equestrians.

   B. Provide directional signage at trail intersections.

   C. Provide signage clearly stating the rules of the Greenway. This includes dog policies, motorized traffic restrictions, etc. Where the Greenway trails cross jurisdictional boundaries, post signs indicated changes in trail rules.

   D. Design and incorporate a common element into signage to indicate Greenway trails. This element might be a logo or other design unique to the Dry Creek Greenway.

   E. Design signage to meet ADA requirements.

   F. Provide interpretive signage where appropriate at nodes, overlooks and other significant sites. These sites may include historically or prehistorically significant locations, wetlands or sensitive habitats, local wildlife that trail users might encounter, etc. Design interpretive signage to meet ADA requirements.

3.0 Design trails for emergency vehicle access, a minimum of 10 feet wide with minimum curve radii of 45 feet. 12 foot wide paved routes are recommended by Caltrans in areas where heavy bicycle or pedestrian traffic is anticipated. Paved

paths that are less than 12 feet wide are also more vulnerable to degradation of pavement edges due to wear by maintenance and emergency vehicles[22].

4.0 Provide striped, separated lanes for traffic control, where possible.

5.0 Design all improved pedestrian, bicycle and combined trails to meet ADA requirements, where feasible. Unpaved trails will not meet universal accessibility standards.

6.0 Provide a diversity of riding and walking experience by varying the ecosystems through which the trail travels. Take advantage of ecotones (transitions between ecosystems) to create an interesting experience for the trail user. Create overlooks at scenic locations on the creek or surrounding landscape.

7.0 Avoid trail dead-ends, especially where a trail terminates in a private parcel. This encourages trespassing. Instead of creating a dead-end, identify a nearby road or other circulation element and connect the trail to that system. Ideally, the connection would be to a road that has an existing bike route. If that is not available, a road that has a proposed bikeway is preferred.

8.0 Where a trail is adjacent to residential or industrial uses, provide a minimum 6 foot high barrier to separate the trail from the adjacent land use. This barrier might take the form of a berm or a berm and plantings.

6.3 Nodes

Nodes are locations on the Greenway where trail users gain access to the system. These nodes range from small neighborhood access points to larger regional staging areas (see Figure 1-3). Nodes are located based upon the Roseville and Placer County existing and proposed bikeways, the road network, and Greenway connections. The suggested types of nodes are dependant upon factors such as the class of the intersecting bikeways, size of roads, significance of the particular area within the Greenway, location of equestrian trails, sensitivity of local neighborhoods to increased traffic associated with larger nodes, and locations of other nodes.

Table 6-4 lists the node types in the Greenway.

Table 6-4 Node Types

Node Type	Description	Locations
A	Neighborhood access, no parking, minimal signage, traffic control.	Local street/Greenway crossings. Located within neighborhoods.
B	General public access, some automobile parking (horse trailers excluded), basic signage. May have some basic site amenities such as benches or native landscaping.	Major street/Greenway crossings. May be on an arterial street in urban areas or a rural road.

[22] Caltrans, 2001.

Node Type	Description	Locations
C	Public access, horse trailer and car parking, moderate signage, no plumbed facilities, may have site amenities such as trash receptacles, benches, landscaping, porta potties, etc.	Major street/Greenway crossings on equestrian routes.
D	Regional access, full facilities, plumbed restrooms, horse trailer (where equestrian trails are present) and car parking, full signage, security lighting, bike racks and trash receptacles	Major street/Greenway crossings coincident with Class I Greenway trails.
E	Park: Type D adjacent to a local or regional park. Includes planned park uses such as recreation facilities, picnic tables and shelters, benches, etc.	Greenway/Park coincident locations.

Type A nodes are located in local neighborhoods or other places where nodes that include parking are inappropriate. They are also located where secondary corridors provide access from private open space areas to the Greenway system.

Type B nodes are located where major streets intersect the Greenway. They include parking for locals and visitors, some signage, and control structures to prevent unauthorized access to the Greenway by automobiles and other motorized traffic.

Type C nodes are located where existing or proposed equestrian trails intersect with Greenway equestrian trails. They may include parking for horse trailers and cars, moderate signage and may include site amenities such as benches or trash receptacles. Two type C nodes at the King Road crossing and at Sierra College provide access to the Secret Ravine equestrian trail. The node at Sierra College Boulevard and Miners Ravine connects the Greenway to an unpaved multipurpose trail.

Type D nodes are located near the Walerga Road crossing over Dry Creek, the Foothills Boulevard crossing over Dry Creek, the Roseville Parkway crossing over Secret Ravine, and near the Village Oaks crossing over Antelope Creek. The Foothills Boulevard and Walerga Road nodes provide equestrian access to the equestrian trails in the Dry Creek Parkway, as well as bicycle and pedestrian traffic access to the Greenway. The type D node at the Roseville Parkway crossing provides access to three Class I bikeways that come together in that location, converging from Dry Creek, Miners Ravine and Secret Ravine. This node need not include horse trailer parking, since equestrians are not permitted on the trails within the City of Roseville.

Type E nodes occur anytime the Greenway intersects an established or planned park, such as at Johnson Springview Park on Antelope Creek, or Loomis Regional Park on Secret Ravine. These nodes utilize the park facilities for staging and rest stops within the Greenway, including picnic grounds, restrooms, drinking fountains, sports facilities, etc.

The following section presents the suitability of each site where a Type B, C or D node is proposed. Since Type A nodes are simply trail access points without parking or other facilities, they can occur almost anywhere that the trail intersects with a road, and so have not been individually investigated for site suitability.

6.3.1 Type B Nodes

Dry Creek at Cook Riolo Road

Cook Riolo Road crosses Dry Creek on a narrow one lane girder bridge. This area currently has a rural character, although that may change with new development that is occurring in this area (Figure 6-7).

Figure 6-7 Cook Riolo Road and Dry Creek Greenway

Sufficient space exists on either bank for a bike and equestrian trail to pass under the bridge (Figure 6-8). Wooden stairs are currently set in to the south bank on the west side of the road to give access to an informal dirt trail. The creek splits into two low-flow channels in this section.

Figure 6-8 Cook Riolo Bridge

There is sufficient room within the existing riparian band for a Type B staging area, but this would impact valuable existing vegetation.

The preferred location is where the existing Class I bikepath dead-ends at Cook Riolo Road several hundred feet south of the bridge (Figure 6-9). This trail follows the south side of the Dry Creek riparian zone and connects to Walerga Road to the west. Properties in the vicinity of this node are owned by private entities, so acquisition of the land for the node will require negotiations with private landowners or partnerships for easements and/or fee-title purchase. Land could also be dedicated as part of a development project.

Figure 6-9 Existing Bikeway at Cook Riolo Road

Across the road from the existing paved path is a private drive, and posted signage states that this is a private drive with no public access, indicating that residents may have had problems with trail users in the past. The Cook-Riolo Road-Dry Creek Greenway intersection will require redesign when the path is extended eastward to resolve potential conflicts with the existing private drive and properties.

Dry Creek at Vernon Street

Sufficient space exists on both stream banks on both sides of the street for a Type B node, including parking for several automobiles, trailhead and signage (Figure 6-10). Both sides of both banks are currently designated open space, zoned "floodway". Both parcels are privately owned, so the City of Roseville would need to negotiate access with the property owners. A BMX track is the existing land use on the north bank, east of Vernon Street. The property on the opposite side of the creek is currently undeveloped, and is adjacent to a Union Pacific Railroad maintenance facility.

Figure 6-10 Dry Creek at Vernon Street

Although a formal vegetation survey was not conducted, a field visit to this site showed good riparian canopy structure upstream and downstream of Vernon Street, with herbaceous, shrub and tree layers present (Figure 6-11). The field visit also found evidence of a potential homeless problem in this reach, which may be somewhat alleviated with the increased public presence associated with a node and trail.

Figure 6-11 Vernon Street Looking West

A special study is needed to determine how the Greenway path will negotiate the Union Pacific Railroad yard just upstream of this node. A path could pass beneath the UPRR bridge on the south bank of the stream between the bridge abutment and two rows of support columns; however, this path would need to be raised five to ten feet to allow use of the trail in anything but extreme low flows, as the existing ground level is just above dry season water level in October (Figure 6-12). Given that the bottom of the bridge is at least 20 feet high, construction of a raised bike and pedestrian trail should be feasible. In addition to the technical challenges of locating a trail underneath the UPRR yard, the City of Roseville will need to negotiate with the UPRR for this access.

Figure 6-12 UPRR Bridge South Bank

Antelope Creek at Roseville Parkway

Where Roseville Parkway crosses over Antelope Creek, the road is built on an embankment that is perhaps 30 to 40 feet above the stream. There are no locations on the west bank where access is feasible from the street without construction of large fill banks or bridge structures. On the east bank, the land rises to the level of the road, where the Creekside Ridge office complex is located on the north side of the highway.

There are three options for locating a node with parking, trailhead and signage in this area (Figure 6-13).

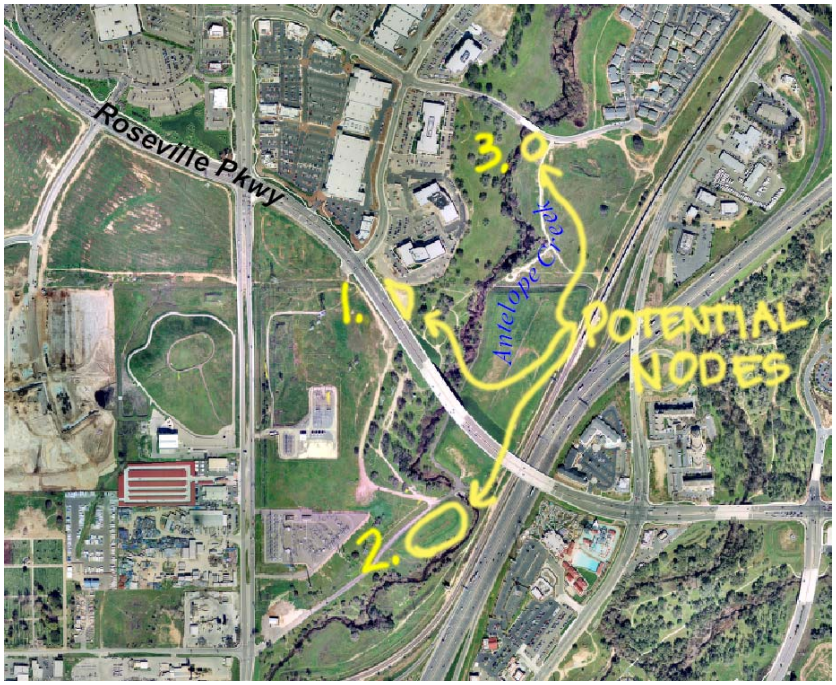

Figure 6-13 Antelope Creek at Roseville Parkway

The first is a vacant lot zoned industrial but designated open space between the office complex and the creek. The east bank of the creek on the north side of the highway is currently posted private property and appears to be a target range, potentially for archery. This may pose a safety hazard for trail users in this area, and a potential barrier for trail access from this node location (Figure 6-14).

Figure 6-14 Posted Private Property at Roseville Parkway and Antelope Creek

The second possible site is east of the Roseville power substation where Berry Street ends at Galleria Boulevard. From the aerial photographs, it appears that the paved road east of the Berry Street-Galleria Boulevard intersection crosses over the creek just south of the Roseville Parkway overpass; however, this road is blocked by a posted, closed gate. The land that this access road occupies is zoned "general industrial." The City of Roseville should consider whether this road could be used for public access to the Greenway.

The third and recommended location is north of the Roseville Parkway Bridge where Antelope Creek Drive crosses Antelope Creek. A large vacant lot on the east bank of the creek on the south side of the road could provide public access. This land is designated "park and recreation" and probably represents the best potential for access to the Greenway in this area.

Swan Stream at Sierra College Boulevard

A small tributary to Linda Creek joins the mainstem approximately 600 feet north of where Linda Creek crosses the Placer-Sacramento County line. This tributary has been called both Linda Creek (north branch) and Swan Stream, since it drains from Swan Reservoir to the east. An existing Class I bikeway follows this trail from Sierra College Boulevard east to a major powerline corridor. On the west side of the street, a wall separates the public right-of-way from Woodbridge Ranch. Within this private community, Swan Creek is bordered by private open space that varies from 150 feet to 450 feet in width (Figure 6-15). To create a connected trail through this segment, the City of Roseville should enter negotiations with Woodbridge Ranch to attain public access to this open space. This should be a high priority acquisition, because this segment forms part of the primary connection to Folsom Lake State Recreation Area. If access cannot be obtained, Old Auburn Road is the next best connection between Linda Creek and the Placer County dedicated open space along Swan Stream.

A Type B node at this location could occur within the vacant parcel south of the existing City of Roseville open space east of Sierra College Boulevard. Sufficient area exists to locate several parking spaces, signage and a trailhead (Figure 6-16).

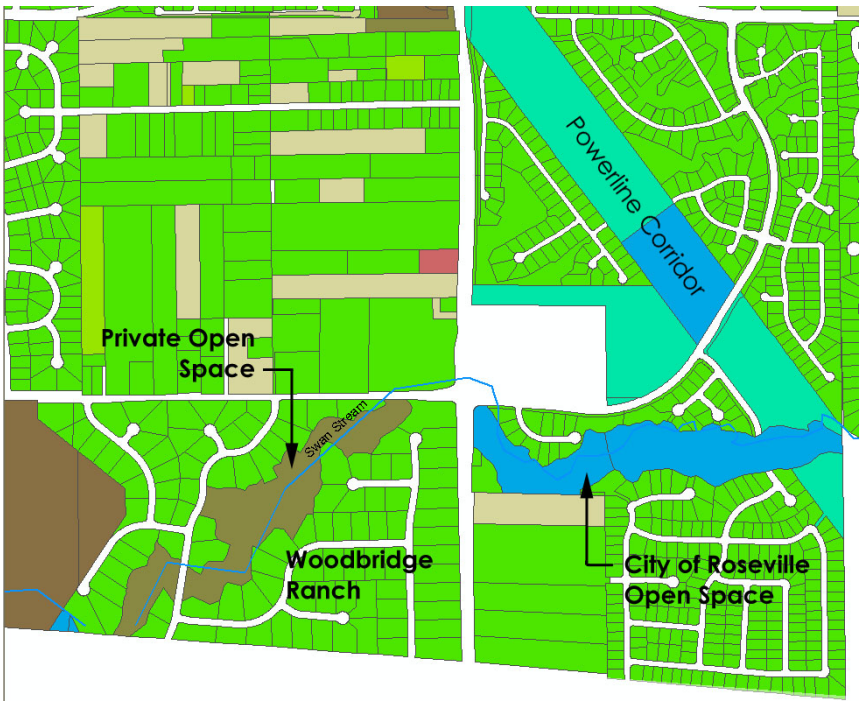

Figure 6-15 Swan Stream Open Space

Figure 6-16 Swan Stream Open Space Corridor

The existing open space is zoned "floodway", so care should be taken to design the node to not impede the flow of floodwater, and minimize the potential for volatile organic compounds associated with parking lots from entering the waterways.

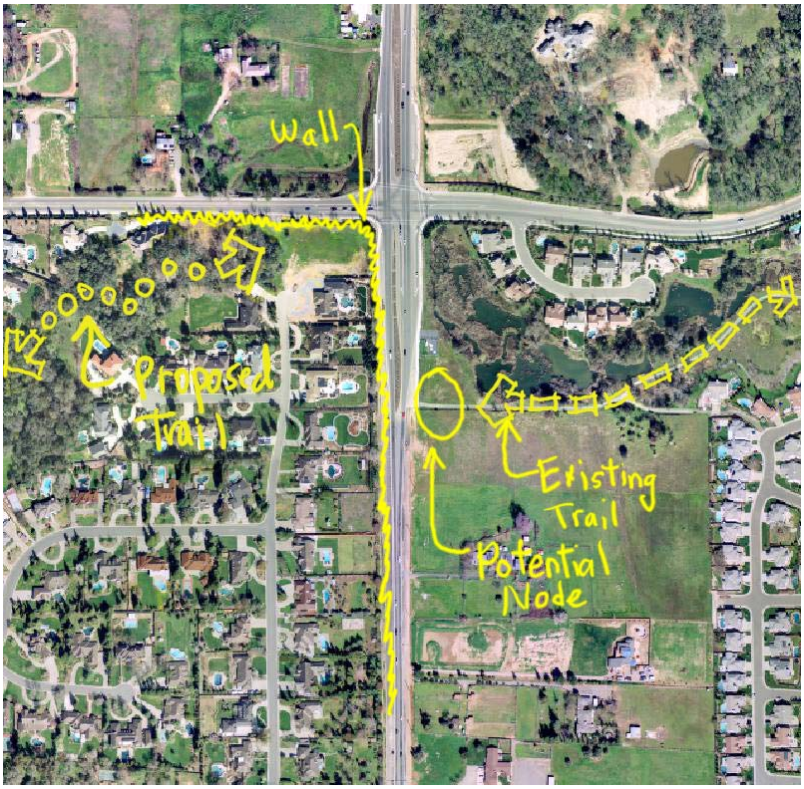

Figure 6-17 Swan Stream at Sierra College Boulevard

Linda Creek at Rocky Ridge Drive

The corner of South Cirby and Rocky Ridge is currently undeveloped, privately owned and zoned medium density residential. Additionally, the parcel immediately southeast, bordering S. Cirby Way, is undeveloped, zoned open space. This parcel, which appears from the city parcel map to be owned by the adjacent subdivision, currently has paved parking for two to three automobiles and an open gate leading down to the creekside (Figure 6-18). This area already functions as a node for access to the multipurpose trails along Linda Creek. Minor improvements such as the addition of sidewalks, marked parking spaces, and landscape plantings would formalize this node.

Figure 6-18 Existing Parking off of Cirby

Public open space along the creek extends to Maidu Park, following Strap Ravine (Figure 6-19). Trails within this open space would link Maidu Park to the Greenway system. Additionally Rocky Ridge has a bikeway that is divided from the street by a 5 to 10 foot landscape strip, and McLaren Drive has a grade separated, though not buffered, bike path.

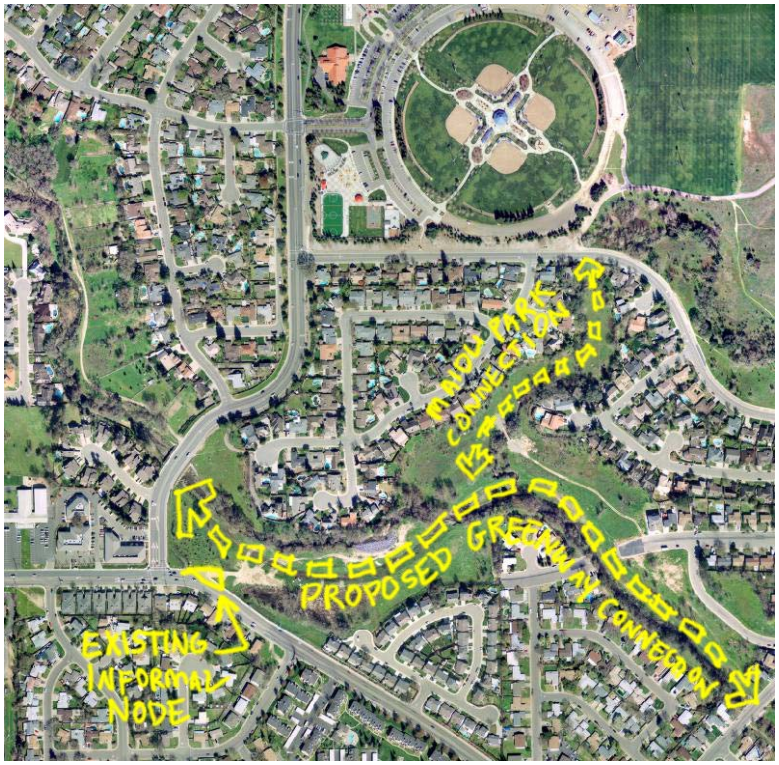

Figure 6-19 Linda Creek at Rocky Ridge

Secret Ravine at Sierra College Boulevard

The 2003 Secret Ravine Floodplain Restoration Feasibility Study[23] recommends a floodplain restoration project east of Sierra College Boulevard on Secret Ravine. The proposed project focuses on creation of floodplain terraces, improvement of channel structure, removal of invasive plant species and replanting with riparian vegetation. As a recreational component, the Feasibility Study recommends a staging area for the Greenway that includes a small parking lot. This integration of a PCFCWCD project with the Greenway provides an opportunity to educate Greenway visitors on urban impacts to creeks and principles of urban stream restoration. The node at this location should include additional interpretive signage related to the restoration project.

Figure 6-20 shows the proposed location for the floodplain restoration site.

Figure 6-20 Secret Ravine at Sierra College Boulevard

[23] HDR, 2003.

6.3.2 Type C Nodes

Dry Creek at Atkinson Street

Sufficient space exists at the Atkinson Street bridge over Dry Creek for a Type C node. This node would include parking for horse trailers, signage, and potentially porta-potties, picnic tables or trash receptacles. The north bank west of Atkinson is broad, relatively flat and does not have significant riparian vegetation in the open space (Figure 6-21). This parcel is designated open space and zoned floodway which limits development in this area. This area already contains informal multipurpose trails on the north bank of the creek that lead downstream.

Figure 6-21 Atkinson Street Potential Staging Area

The current road network should be sufficient to handle the increased traffic that this node would generate. It is relatively close to Foothills Boulevard, a major four lane arterial, and access to the node would primarily occur from Foothills Boulevard to Atkinson Street. While Atkinson Street is moderately busy, curb cuts and intersections are infrequent, and this road appears to have the capacity to handle the increased traffic volume (although traffic studies will be required to confirm this).

The existing character of this area is industrial fringe. The contrast between the railroad switching yard, the adjacent light manufacturing facility and undeveloped lots and open space along Dry Creek is dramatic (Figure 6-22).

This node provides access to the equestrian and bicycle/pedestrian trails downstream along Dry Creek that connect the Dry Creek Greenway to the Dry Creek Parkway. It forms a significant component of the Greenway system that forms the upstream end of the equestrian trail from the Parkway. Construction of this node should be a high priority.

Figure 6-22 Dry Creek at Atkinson Street

Clover Valley Creek at Sierra College Boulevard

The Type C node on Clover Valley Creek at the Sierra College Boulevard overpass provides access to the multipurpose trails along English Colony Way, and the proposed equestrian trails along Clover Valley Creek and in the Bickford Ranch development. A Type C node in this location is predicated on the construction of the potential multipurpose trail along Clover Valley Creek, and that is dependant upon successful negotiations with land owners for an easement.

The location for this node is not immediately apparent, although several possibilities exist. The easement in the area of Sierra College Boulevard and English Colony Way is wide, approximately 250 feet, which might be sufficient for a small parking area that would accommodate one or two horse trailers. This node could occur on either side of the road, although access from the southwest side of the Sierra College Boulevard would eliminate the need for trail users to cross the street to access the proposed Clover Valley Creek trail (Figure 6-23).

At the end of Caperton Court is a vacant parcel owned by the Placer County Water Agency that contains a pond. A node could potentially be located on this parcel. The route for the trail would need to be determined prior to selecting either location for the node. Currently, the Sierra College Boulevard and English Colony way intersection is surrounded by single family residential and farm properties. A vacant, privately owned parcel abuts the Placer County Water Agency parcel on the south side and also adjoins the creek. An easement negotiated on this parcel would provide the needed connection.

Figure 6-23 Vacant Land at Sierra College Boulevard and English Colony Way

Due to the potential conflict between public users and the Water Agency, this plan recommends creating a small Type C node for equestrian access at the intersection of English Colony Way and Sierra College Boulevard. This node would only accommodate a small number of horse trailers, depending upon available space. Overflow parking would be available at the Traylor Ranch Bird Sanctuary and Nature Reserve, approximately 4800 feet from the trailhead, and equestrians from that location can access the Greenway through the multipurpose trail on English Colony Way. An on-demand traffic light over Sierra College Boulevard may be required to allow equestrians to safely cross that street.

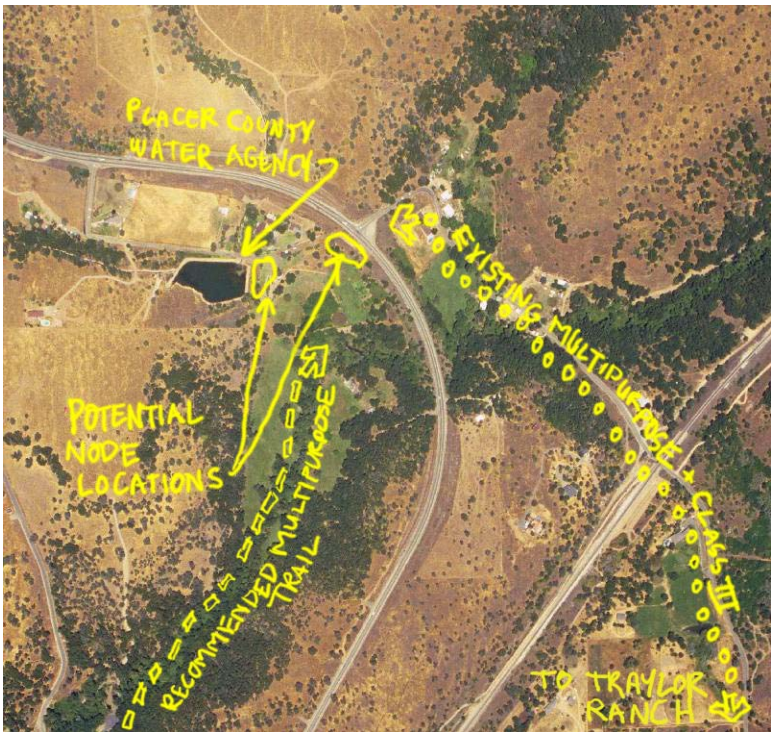

Figure 6-24 Clover Valley Creek and Sierra College Boulevard

Secret Ravine at Rocklin Road

The Rocklin Road bridge over Secret Ravine is just downstream of the Sierra College campus. Primary access for the Greenway in this area may occur through the campus; however, parking on college grounds requires payment of a fee, and alternative unpaid access points should be available to the public. Additionally, equestrians need access to the proposed multipurpose trails up and downstream of this point, and this may be unavailable through Sierra College (Figure 6-25).

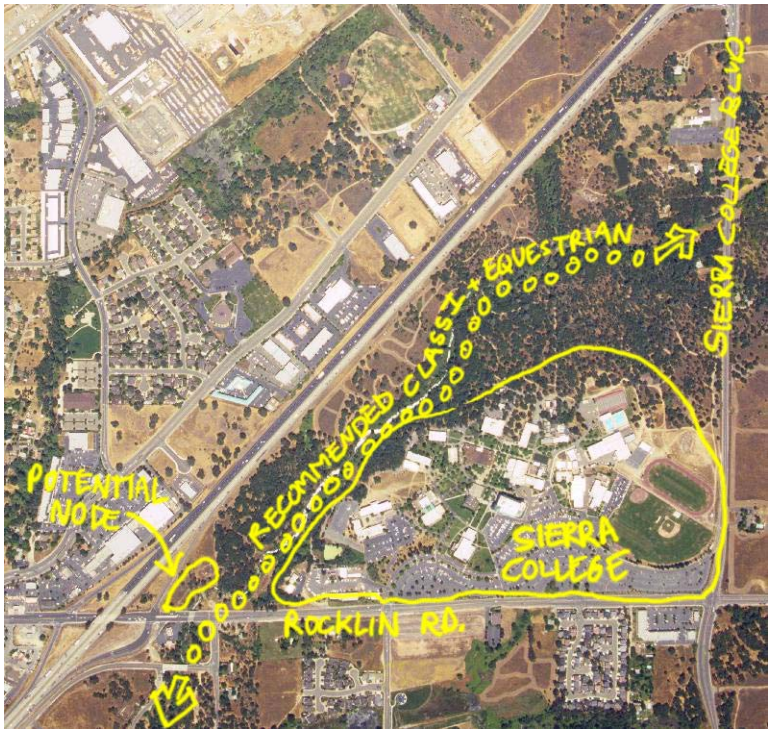

Figure 6-25 Secret Ravine at Rocklin Road Showing Sierra College Campus

A Type C node located near the Rocklin Road crossing would provide free access to the Greenway. Sufficient undeveloped land exists on east and west stream banks on the north side of Rocklin Road. The parcel between Interstate 80 and Secret Ravine would be suitable for this node (Figure 6-26).

Ownership is private, zoned commercial. Negotiations would be required with the private landowner, and could potentially be done in conjunction with development of these properties.

Figure 6-26 Undeveloped Land on West Bank, North of Rocklin Road

Miners Ravine at Sierra College Boulevard

A large parcel west of Sierra College Boulevard on both banks of the creek is designated open space. Current plans specify construction of an off-channel detention basin adjacent to the north creek bank on this parcel by the PCFCWCD. This area will also accommodate a large community access node (Figure 6-27).

Figure 6-27 Miners Ravine at Sierra College Boulevard

This node will provide access for bicyclists and pedestrians to the west and east, and equestrians to the proposed multipurpose trail to the east following Cavitt and Stallman Road. The trail crossing of Sierra College Boulevard poses a problem. This road is heavily trafficked. The ideal solution would be to pass the trail beneath the bridge; however, the existing bridge height is insufficient for this (Figure 6-28). Planned widening of Sierra College Boulevard to four lanes and potential redesign of the bridge structure may accommodate an under-bridge crossing. Lacking that, the best option may be to install a traffic control structure on Sierra College Boulevard.

Figure 6-28 Bridge on Miners Ravine at Sierra College Boulevard

6.3.3 Type D Nodes

Dry Creek at Walerga Road

An existing class I paved trail connects Walerga Road to Cook Riolo Road on the south side of Dry Creek (Figure 6-29). In the vicinity of Walerga Road, an informal unpaved trail parallels the paved track (Figure 6-30). A node located near the Walerga Road Bridge would provide access for equestrians, bicyclists, pedestrians and other trail users to the paved and unpaved trails upstream and downstream, connecting into the Dry Creek Parkway at the County line approximately 2 miles downstream.

The open space buffer on the south creek bank east of Walerga Road provides adequate space for a Type D node (Figure 6-31). The existing trailhead provides parking for one or two vehicles as well as an existing plastic trash can. This should be upgraded to parking for automobiles and horse trailers, plumbed or vault-style restrooms, trail signage, and potentially picnic tables.

Yellow star thistle appears to be a problem in some areas along the existing trail. A management plan should be developed to deal with this invasive plant species.

Figure 6-29 Class I trail at Walerga Road

Figure 6-30 Informal Unpaved Trail

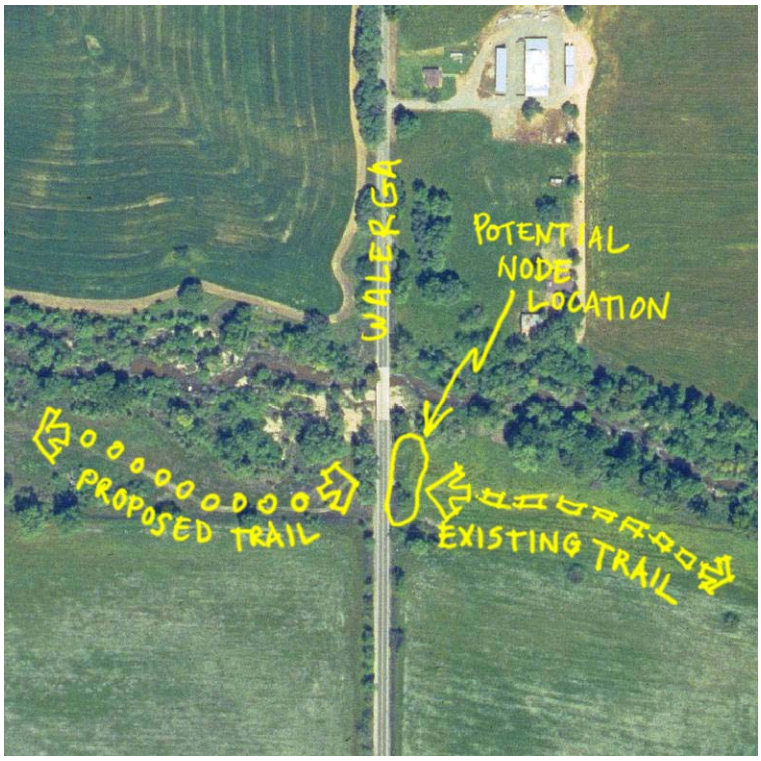

Figure 6-31 Dry Creek at Walerga Road

Secret Ravine at Roseville Parkway

A type D node located in this fully developed, centralized location would provide a primary access point to the Greenway. The open space corridor in this area is wide, varying from 540 feet on the south side of Roseville Parkway to over 1200 feet on the north side. Most of this open space is set 8-10 feet below the level of the adjacent roads and businesses and within the 100 year floodplain. This open space is bordered on the west by a Union 76 station & Burger King south of Roseville Parkway and a Mariott Fairfield Inn to the north. It may be possible to locate a staging area within the 100 year floodplain just east of the Union 76 station or on the opposite side of Roseville Parkway below the Mariott (Figure 6-32), if the staging area were designed to not impede floodwater and to limit the amount of volatile organic compounds entering the waterway during flood events.

Figure 6-32 Open Space on Secret Ravine at Roseville Parkway

Informal multipurpose trails run upstream and downstream from the Roseville Parkway Bridge (Figure 6-33). About ¼ mile downstream, they provide access to the existing Class I trail that parallels Miners Ravine from its confluence with Secret Ravine to just downstream of the intersection of Rocky Ridge Drive and Roseville Parkway.

Figure 6-34 shows the section of Secret Ravine between Roseville Parkway and Eureka. The significant amount of open space in this area is apparent from this aerial photograph. As can also be seen, undeveloped land between Taylor Road and Secret Ravine, near the Secret Ravine and Miners Ravine confluence, presents an alternative location for a node.

Figure 6-33 Multipurpose Trail along Secret Ravine

Figure 6-34 Secret Ravine at Roseville Parkway

This land is currently zoned "highway commercial," and is privately owned; however, the potential exists to develop some form of cooperative agreement with private entities to provide public access to the Greenway from this location. One of these parcels contains

two large powerline towers. Adjacent to these towers may be a likely location for a node. If sufficient space is available and easements can be secured, this location is preferred due to the ease of access from Taylor Road and the relationship of this site to the creek.

The large parking lot just south of the confluence is part of for the United Artists theater complex on Eureka Boulevard. It is possible that the City could also arrange some form of cooperative agreement with this business to allow parking for Greenway access.

6.3.4 Type E Nodes

Antelope Creek at Johnson Springview & Antelope Creek Parks

Antelope Creek passes through Antelope Creek Park in within the city of Rocklin. In this area, Antelope Creek Park combines with Johnson Springview Park to form a regional recreational center. Johnson Springview Park contains baseball, soccer, and field hockey fields as well as a skatepark and tennis courts. Antelope Park includes several multipurpose, unpaved trails that parallel the creek (Figure 6-35). In between the two parks is a Frisbee golf course, set amidst native oaks. Drainage is handled above ground in vegetated swales in both of these parks.

Figure 6-35 Creekside Multipurpose Trail

At one location on the creek in Antelope Park, an informal pathway leads from the creekside unpaved trail to the streambank, and continues on the opposite bank near a private residence. The streambanks are riprapped with stone at this location. A sewer line also crosses the stream at this location, presenting a barrier to migrating salmonids. Water was just spilling over the top of the pipe at mid-October flow levels (Figure 6-36). This pipe should be redesigned to improve fish passage.

The existing parking and facilities at Johnson Springview Park provide a primary access point to the Greenway in Rocklin. Existing signage may need to be enhanced to indicate the access points to the trails and the primary staging area. Interpretive signage could be added that explains the role of the creek in wildlife and aquatic habitat as well as a floodwater conveyance system.

Figure 6-36 Sewer Crossing on Antelope Creek

Secret Ravine at Loomis Regional Park

Loomis Regional Park provides access to Secret Ravine on both sides of King Road in Loomis. This park forms the upstream limit to the recommended Greenway potential recreation corridor on Secret Ravine. Provided the cities of Rocklin and Loomis and Placer County can negotiate easements to establish trails in this corridor, this park will function as the northernmost staging area on Secret Ravine for equestrian, bicycle and pedestrian access to the Greenway.

The park currently contains a concession stand, baseball fields, picnic areas with barbeques, porta-potties, unpaved trails and a bridge over the creek (Figure 6-37). A small sign adjacent to the bridge includes a calendar of events at the park. The parking lot has sufficient space for horse trailers, but is not currently striped for vehicles towing trailers.

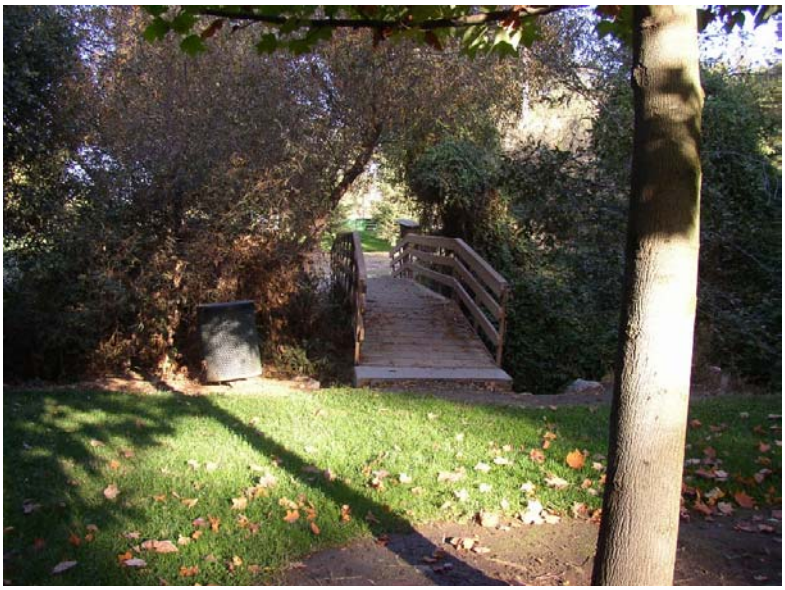

Figure 6-37 Bridge Over Secret Ravine in Loomis Regional Park

Dry Creek at Royer Park

Royer Park, in downtown Roseville, provides an excellent staging area for the Greenway (Figure 6-38). An existing trail follows the creek for the length of the park, providing access to sports fields, turf grass areas, tennis courts, basketball courts, restrooms, parking lots and other amenities.

Figure 6-38 Dry Creek at Royer Park

The north end of this park is less than 500 feet from the new Roseville Civic Center and the revitalized downtown, providing easy access from this busy urban area via a pedestrian bridge over the creek.

Figure 6-39 Royer Park Creek View

Riparian habitat in this area is marginal (Figure 6-39). The west creek bank is partially riprapped north of Douglas Boulevard, and parking lots are paved to the top of the bank in some cases (Figure 6-40). The riparian band throughout the park is narrow, often from 10 to 20 feet in width, especially in the area discussed above, and trees are relatively sparse. The most that can probably be accomplished in the west bank areas that are encroached upon by pavement is the application of biotechnical bank stabilization techniques that incorporate woody vegetation.

Figure 6-40 Pavement Encroaching on Stream Bank

On the east bank of the stream, through most of the park, the path is separated from the stream bank by an approximately 10 foot strip of mown, unirrigated herbaceous plants, primarily annual grasses. Woody species could be planted in this area to improve riparian cover. As safety is often a primary issue in urban parks, these species might be limited to large trees and low shrubs less than three feet tall. The low shrubs would stabilize the top of bank and provide habitat for small animals, and the trees would improve shading of the surface of the stream and stabilize the banks with their root masses.

A large erosional hotspot is occurring south of Douglas Boulevard on the west bank of the creek where several hundred feet of bank is sloughing into the creek. This problem could be addressed by bank stabilization that includes recontouring. Restoration is currently planned along Dry Creek from Riverside Avenue to Adelante High School as part of the Roseville Creek and Riparian Management and Restoration Plan.

The paved trail is moderately used. This trail is approximately 10 feet wide, and is striped south of Douglas Boulevard (Figure 6-41). In 40 minutes spent walking the trail in the early afternoon on a weekday, four cyclists, six pedestrians including a youth with a fishing rod, two dog walkers, and two people using electric mobility scooters were seen using the trail. This usage would certainly increase if the trail extended upstream and downstream through the Greenway. The paved path turns to a dirt track several hundred feet north of Darling Way.

Figure 6-41 Paved Trail in Royer Park

Other Type E Nodes

Other Type E Nodes exist where the Greenway intersects with existing parks, such as along Clover Valley Creek at Sierra Gardens Park, Eastwood Park and Cirby Creek Park and Antelope Creek at Sunset East Riverwood Park. At these nodes, the Greenway will take advantage of existing facilities for staging areas to access the Greenway trails.

6.3.5 Signage

As indicated in the section on standards, signage within the Greenway consists of rules signs, interpretive signs and directional signs. Rules signs indicate what activities are prohibited within the Greenway, such as dogs without leashes, motorized traffic capable of speeds greater than 5 mph, or equestrians. Rules signs should be posted at nodes, trail intersections and jurisdictional boundaries. Penalties for noncompliance should also be indicated. Specific Greenway rules are up to the local jurisdictions to establish; however, cooperation between jurisdictions to adopt a standard set of rules may make enforcement easier.

Interpretive signs should be posted at larger nodes (type C and D), overlooks or areas of natural or cultural significance. These signs should focus on cultural and natural resources within the Greenway. Some topics might include native vegetation communities, wildlife and wildlife habitat, salmonids and fish habitat, Native American history and cultural sites, impacts of urbanization on the Greenway creeks, impact of beavers in the Greenway, changes to the landscape and creeks due to mining, geology of the area, and importance of the Greenway in the regional recreational system.

Directional signage should be located at all trail intersections and nodes. Signage should indicate directions to major destinations and distances and, in the case of intersections, which route follows the Greenway. Major destinations include city centers, FLSRA, Dry Creek Parkway, Ueda Parkway, American River Parkway, local and regional parks such as Maidu Park or Royer Park, and the end of the Greenway trail. Signage located at nodes should be appropriate to the node type; for example, nodes A and B might include directions to local parks and destinations, where nodes C and D might include directions and distances to more regional destinations. Additional directional signage could include mile posting signs to indicate distances from major trailheads or destinations.

Signs within the Greenway should have a common design element to distinguish them as belonging to the Greenway system. This element might include a logo, design shape and/or overall graphic design standard. Signs should meet ADA standards for readability, be mounted on sturdy supports, resist graffiti, be relatively easily replaced if damaged, and be theft resistant. Smaller directional and rules signs can be mounted directly on a post. Larger signs might be incorporated into kiosks, especially at nodes and interpretive sites.

Interpretive and rules signs should be constructed of metal framed high pressure laminate or other durable material and be vandal and graffiti resistant. The ZED embedded imagery process could be used in kiosk signs that are mounted on larger metal framed panels that protect the edges, since ZED is not as durable as HPL but preserves higher quality images. Mile markers and small direction signs should be made of painted or coated metal for durability.

Directional signage should be consistent with Caltrans standards.

6.3.6 Other Amenities

Other potential amenities with the Greenway include fishing platforms, picnic areas and overlooks. Fishing access along the creeks in the Dry Creek watershed is mostly informal. It is not the intent of this plan to restrict this informal access; however, if extensive,

uncontrolled access can lead to increased erosion and sedimentation within the creek. This is a particularly sensitive issue in Dry Creek, Miners Ravine and Secret Ravine due to the presence of salmonids in these waters. Fishing access should be monitored locally by citizens groups, trail users and local jurisdictions, and if excessive bank degradation is noted, a plan should be developed to address the problem. This might include educating anglers, installing fishing platforms at popular locations, restricting bank access to designated areas, protecting banks by installing access trails or steps, planting native shrubs in problem areas, or installing bioengineering stabilization. Additionally, fishing platforms with paved access trails should be installed at larger nodes or other appropriate places along the creek to provide fishing opportunities to disabled anglers.

This plan does not specify locations for picnic areas within the Greenway. While they are an appropriate activity within the Greenway, they are likely to be collocated with nodes. Nodes C, D and E are appropriate for picnic areas, trash receptacles and benches. These amenities require regular maintenance and must be supported by the local jurisdiction's maintenance department. Picnic tables and benches should be should be vandal resistant, fire resistant, durable, easily cleaned and maintained, and anchored to the ground. Local maintenance districts are likely to have their own requirements; however, a standard adopted across the Greenway would provide consistency to the system. Readily available standard types such as the Wabash Valley Spyder series Y335 are rugged and mounted in-ground. This style, in a green perforated pattern, would be appropriate in a location surfaced in mulch, packed dirt or decomposed granite. Similar-style benches and trash receptacles are also available. In-ground mounts are preferable to surface mounts for unpaved areas because the concrete post anchors can be set several inches below-grade, which appears more appropriate in natural settings.

Overlooks should be placed along the Greenway at scenic locations. A scenic assessment was not conducted as a part of this Regional Vision, and should be performed prior to locating scenic overlooks. This assessment might include resident surveys to identify favored viewpoints as well as a photographic record of the Greenway. Areas identified for overlooks might be vista views or locations along the streams that have high scenic beauty. Overlooks could be combined with interpretive sites or picnic areas.

6.4 Habitat Improvements

One of the overall goals of habitat improvement in the Greenway is to create a healthy, connected riparian corridor along Dry Creek and its tributaries. This can be accomplished by both preserving existing valuable fish and wildlife habitats and enhancing degraded habitats. Current causes of habitat impairment in the area of fisheries management include[24]:

- Reduction in and modification of riparian habitat leading to reduced cover and shading, reduced food supply, reduced in-stream structures for escape from predators and protection from flooding, increased bank and surface erosion, and reduced barriers to overland water runoff and chemicals,
- Predation and competition from introduced fish and habitat modifications,
- Invasive aquatic plants leading to reduced food supply, changes in predation and competition, and reduced dissolved oxygen supply,
- Impacts to the flow regime, specifically changes in timing and duration of peak flows, changes in total flow volume and velocity, changes in flow depth, potential increased bed scour, and impacts on spawning habitat and behavior,
- Existence and placement of barriers to fish passage due to beaver dams, water diversion structures, culverts, dams and other manmade structures,
- Changes in stream geomorphology, including channelization, bank stabilization, placer mining, flow regime modifications, etc.,
- Increased sedimentation due to stream channel modifications, flow regime changes, surface erosion increases, bank erosion increases, livestock, off road vehicles, horses, etc.,
- Pollution of runoff water from roads, developed communities, commercial and industrial facilities, settled air pollutants, landscape care products, agricultural chemicals and improper use of household chemicals,
- Varying water supply and waste water impacts.

Factors leading to riparian and floodplain habitat degradation in the watershed include:[25]

- Reduction in riparian and floodplain habitat area due to development,
- Modification of vegetation communities,
- Changes in flow regime,
- Increased bank erosion.

These primary factors of degradation, identified in the draft Dry Creek Watershed Coordinated Resource Management Plan (CRMP), can be directly translated into objectives for habitat improvement in the Greenway, as follows:

[24] ECORP, 2003.

[25] Ibid.

- Increase riparian canopy cover, both over the stream channel and within the riparian zone,
- Restore floodplain area and habitat,
- Reduce populations and impacts of non-native fish species,
- Reduce populations and impacts of non-native invasive plants,
- Mitigate impacts of changes to the flow regime, through on-site, on-channel and off-channel detention,
- Mitigate impacts of barriers to fish passage, through redesign or removal of barriers,
- Restore or improve stream modifications through removal of bank armoring and restoration of channelized reaches,
- Decrease sedimentation in the stream channel through on-site detention including sediment basins, bioengineering approaches to bank stabilization, and reduction in access to the stream and streambank by livestock and off-road vehicles,
- Improve water quality through reduction in sedimentation and pollutants in runoff,
- Stabilize water supply and water supply demands through public education and reduction in water demand,
- Improve riparian canopy diversity, both in species and in vertical structure (healthy trees, shrubs and groundcover).

Some of these objectives, such as those involving improving riparian canopy, can be achieved through implementation of specific restoration projects on public land. These restoration projects might entail planting of vegetation to achieve the desired riparian community structure, improvement of in-stream habitat structure through placement of large boulders, recontouring of stream banks and/or replacement of bank armoring with bioengineering techniques such as vegetated geotextiles, restoration of channelized stream segments through realignment of the thalweg and recontouring of the floodplain, etc. Regardless of the techniques used, habitat enhancement in the Greenway must be done in a manner that balances the multiple beneficial uses in the Greenway, including recreation, flood water conveyance, wildlife and aquatic habitat, and others.

The overriding goal in restoration projects of this nature should be to understand the existing and most probable future hydrologic regime and geomorphic condition of the stream and develop a restoration plan in which the stream is hydrologically and geomorphically stable, ecologically healthy, and provides high quality habitat to fish, other native aquatic species, and wildlife.

Some of the above objectives, such as stabilizing the water supply and water supply demands, or decreasing pollutants in runoff, involve increasing public education and awareness. A directed public outreach campaign can work to educate watershed residents on the effects of homeowner actions on local creeks. Some of the major impacts of residential users on creek ecosystems include:

- Pollution from herbicides, pesticides and fertilizers carried in runoff from residential landscaping,

- Importation of water into the watershed and increased runoff from irrigation to support high water-use landscaping, which disrupts the natural flow regime of the creeks (this includes discharge of wastewater and water treatment plants),
- Introduction of invasive non-native plants into the local ecosystem,
- Increase in runoff through increasing impervious surfacing as development of an area occurs,
- Litter, illegal dumping, and discharge of chemicals used in car washing.

The goal of public outreach and education is to increase awareness of the likely negative behaviors, reduce the occurrence of these behaviors and increase public stewardship for the waterways and watershed.

Strategies to preserve and enhance riparian and aquatic habitat must be different for private land than those undertaken on public land. Public education and outreach can be effective at improving habitat on private land. In addition to the above education objectives, private landowners that own property along the creeks can be encouraged to preserve and restore native vegetation within the riparian zone. Increasing public awareness on existing regulations and the value of maintaining healthy riparian vegetation in reduced erosion, improved aesthetics, potentially reduced insect pests, and other benefits may lead to improved stewardship.

Incentive programs may be considered for restoring riparian vegetation and degraded streambanks. Incentives could take the form of tax credits, financial assistance, development credits, professional advice, or other county and/or city sponsored programs. As development continues to occur in the watershed, preservation and restoration of riparian areas can be tied to conditions of approval.

All of the local jurisdictions within the Dry Creek Greenway have adopted regulations protecting native oaks trees, although Roseville and Placer County include exemptions for single-family residential properties. Table 6-5 summarizes the existing regulations within Placer County and city jurisdictions for preservation of oak trees and riparian vegetation. These preservation ordinances help to protect healthy oak trees. Loomis and Placer County regulations extend protection to other large native trees, and Placer County regulations protect riparian zones as well. These regulations do not mean that native trees will necessarily be preserved, but that a tree permit is required to take or damage a protected tree. Extending these regulations to protect healthy native trees within the riparian zone would help preserve stream corridor habitats for those jurisdictions that currently only protect native oaks, as would requiring individual homeowners to obtain permits for work within the riparian zone that may impact valuable vegetation.

Table 6-5 Tree Preservation Ordinances in the Dry Creek Watershed

	Trees protected	Exemptions	Additional Notes	General Mitigation Requirements
Roseville	Native oaks 6" DBH (single trunk or total of multiple trunks)	Health and safety issues, Public utilities operations, single family and two-family residences	Permit is required to remove or harm protected tree or to work within the dripline.	Inch for inch replacement using #15 size trees. A minimum of 50% shall be native trees, while up to 50% may be non-native. On-site replacement is preferred alternative but developer can relocate trees, implement a revegetation plan, or pay in lieu fees.
Rocklin	Oaks trees with 6" DBH single and aggregate multistemmed.	Dead or dying trees on undeveloped single family lots.	Permit is advisory for single family, duplex and triplex, but removal must be mitigated. Removal on mutlifamily, commercial and industrial LU and undeveloped land is subject to approval and mitgation.	Two #5 size native oak trees for each tree removed, five #5 size native oak trees for removed heritage trees (oaks w/ DBH > 24"), or payment of in lieu fees.
Loomis	Heritage trees defined as: 1) Native oaks 6" diameter measured at narrowest diameter below 1st major branch, not to exceed 4' above the ground, 2) Any tree, excluding eucalyptus, alder, cottonwood, foothill pine & willow with 18" diameter measured as above, 3) Trees designated by council resolution.	Health and safety issues, Public utilities safe operation, (no single family exemption)	Permits required to remove, endanger, move or destroy trees.	
Placer County	1) Protected trees defined as native california species 6" DBH for single trunk or 10" aggregate DBH for multiple trunk, excluding foothill pine 2) Any tree in a riparian zone defined as within 50 feet of intermittent stream or 100 feet of perennial stream, regardless of size, 3) Removal of more than 50% of trees on-site of any size.	- Health and safety issues, - Commercial tree removal lots, - Agricultural land, - Single family residential lots, - Commercial firewood cutting of less than 2 cords, - Routine repairn and maintenance of County roads and public works dept.	Tree Permit or Minor Tree Permit required.	Inch for inch replacement using #15 size trees (50% similar native tree), implementation of a revegetation plan, payment of in lieu fees.

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7.0 MANAGEMENT STRATEGY

The Dry Creek Greenway will encompass over 35 miles of trails and 4300 acres of open space if fully implemented. The successful management of such a significant resource will involve coordination and collaboration between local governments, special districts, regulatory agencies, community groups, and private property owners. A comprehensive management strategy is described here that reflects the multifunctional nature of the Greenway and addresses:

- Maintenance of Trails, Facilities, and Habitat,
- Capital Improvements,
- Public Safety,
- Habitat Restoration,
- Education, and
- Acquisition.

7.1 Greenway Jurisdiction and Management Roles

There are many regional partners that share in the management of the resources encompassed in the Dry Creek Greenway. Slightly more than half of the Greenway is located within the boundaries of the incorporated cities of Roseville and Rocklin and the Town of Loomis. The balance is located within Placer County in the Community Plan areas for Horseshoe Bar/Penryn, Granite Bay, and Dry Creek/West Placer (figure 2-6). Roseville, Rocklin, Loomis, and the County of Placer each provide planning and maintenance services within their respective boundaries for public facilities, parks, open space, certain emergency services, and transportation infrastructure. It is the expectation of the Greenway Regional Vision that these responsibilities will remain unchanged unless the local governments agree to implement a process for sharing the responsibilities.

The Placer County Flood Control and Water Conservation District (PCFCWCD) coordinates flood prevention planning and management in the Greenway area with Placer County, Roseville, Rocklin, and Loomis. The Placer County Transportation Agency (PCTA) is responsible for issues related to the regional transportation system, including bikeways, in Placer County. The Placer County Water Agency (PCWA) supplies retail and wholesale irrigation water and drinking water to customers in the Greenway.

Fire protection services within the Greenway area are provided by Placer County, the cities of Rocklin and Roseville, and the Loomis, Penryn and South Placer Fire Protection Districts.

In several Greenway areas, local homeowner associations (HOAs) or community facilities districts (CFDs) assume some of the management responsibilities normally handled by the local governments. These responsibilities are assumed by the HOAs or CFDs typically as conditions required to obtain development approvals.

Non-governmental organizations (NGOs), such as the Placer Land Trust, Dry Creek Conservancy, Habitat Management Foundation, Friends and Lovers of Miners Ravine,

and the Loomis Basins Horsemen's Association, are also active in the Greenway area and contribute to resource management through various stewardship, monitoring, assessment, and planning activities.

7.2 Potential for a Joint Powers Authority

The fact that there are so many established, funded, and staffed entities already working to manage the resources within the Greenway suggests that there are opportunities to leverage the resources of these entities in a thoughtful and synergistic manner without the need to create and fund significant new management capabilities in order to implement the Greenway. However, the network of entities that play a role in managing the Greenway is complex. This complexity creates certain challenges related to management consistency and coordination. Placer County is currently exploring development of a Joint Powers Authority (JPA) for the purpose of coordinating open space management throughout western Placer County. The role of such a JPA could include a variety of management responsibilities such as acquisition, monitoring, restoration, and access control on behalf of the public agencies that are members.

While it is envisioned that local jurisdictions will always play a major role in Greenway management, particularly within their own boundaries, the establishment of a West Placer Open Space JPA in the future could facilitate and substantially enhance coordination among the various Greenway partners to make management more efficient and cost-effective.

7.3 Maintenance of Trails and Facilities

One aspect of Greenway maintenance includes all of the activities associated with keeping trails and built facilities such as rest rooms, picnic areas, and parking lots, safe and functional. The scenarios by which responsibility for such maintenance can be assigned are diverse, and will generally be the result of legally binding agreements negotiated between local governments, private property owners, developers, HOAs, CFDs, and NGOs. Property may be owned by one entity and maintained by another depending on the terms of the agreement. Maintenance may also be performed directly by the responsible entity or by contracting with a third party.

This Regional Vision cannot enumerate all of the possible types of agreements that could be designed to address the assignment of maintenance responsibility. However, at a minimum, it is essential that any agreement result in a qualified entity being legally assigned with the maintenance responsibility for all publicly accessible trails and facilities in the Greenway. Some sample scenarios are as follows:

- Maintenance of publicly accessible trails and built facilities within the Greenway that have been constructed by a local government or agency will typically be the responsibility of the local government or agency, unless that responsibility has been legally assigned to and accepted by a CFD or HOA.
- Construction of public trails and facilities may be funded by private development interests and then turned over to the local jurisdiction, HOA, CFD, or NGO for maintenance. Some provision may be required for cost sharing of public trail and facility maintenance in small developments where the HOA cannot afford the cost.

Such agreements will be the responsibility of the developer and the local jurisdiction approving the development plan.

- NGOs or other volunteer groups may provide significant assistance and resources for publicly owned trail and facility maintenance but should generally not have primary responsibility since fluctuations in membership and funding may limit their ability to meet their obligations. If, however, Greenway property is either owned by an NGO or is held under an easement by an NGO, and includes publicly accessible trails or facilities, the NGO could either have primary responsibility for maintenance, or could legally assign the responsibility to some other qualified entity through the terms of the easement.

7.4 Habitat Maintenance

Maintenance of habitat areas including the creek channel will be a shared responsibility, outlined under agreements similar to those described for trails and facilities. Currently, the County of Placer, the City of Roseville, the City of Rocklin, and the Town of Loomis all maintain the creek channels located within their boundaries, or oversee maintenance agreements with private Homeowner Associations, in coordination with the Placer County Flood Control District to allow flood conveyance with minimum disturbance of habitat. Habitat and park resources outside of the channel may be maintained by these same entities or by NGOs, CFDs, or HOAs depending on ownership and development conditions of approval. As with public trails and facilities, habitat areas may be owned by one entity and maintained by another. The degree of maintenance required will vary depending on the type and condition of the habitat, the purpose of the habitat, and the degree to which public access is allowed. Maintenance standards for specific habitat areas should typically be developed by the managing entity in consultation with the resources agencies, biologists, and/or landscape ecologists. The Implementation Strategies within the Greenway Regional Vision (Chapter 5) provide general maintenance guidelines for the most common habitat types.

Maintenance of habitat areas on privately owned land will be the responsibility of the private property owner. However, with the exception of fire management, water quality, and certain special status species protections, there are no regulations that describe how resources will be managed. Chapter 8 of this Regional Vision outlines an approach to public education and technical assistance to guide these property owners toward appropriate methods of habitat maintenance.

7.5 Capital Improvements

Capital improvements are those projects that result in new trails or facilities or significant enhancements to existing trails or facilities. Capital improvements are distinguished from ongoing maintenance because they are usually funded with a one-time allocation of resources, while maintenance activities require ongoing funding. Capital improvements within the Greenway will occur through several mechanisms involving various funding and implementation methods. They may be built and/or paid for by developers per negotiated agreements required for development approvals. Local jurisdictions may fund and build the improvements using grants or public revenues. NGOs may also secure grants and, working in cooperation with the local jurisdiction, implement improvements on public property. Private property owners may also secure funding or other forms of assistance to implement improvements for public use on their property if they so desire.

Chapter seven in this Regional Vision document includes design guidelines for common capital improvements such as staging areas, trails, and signage.

7.6 Public Safety

Public safety considerations include many aspects of Greenway management, such as fire suppression, code enforcement, police response, fuel load management, properly maintained trails and facilities, access control, public sanitation, and community patrols.

In general, it is expected that Roseville, Rocklin, and Loomis will provide primary police response and code enforcement in the Greenway areas that are located within their boundaries. The unincorporated areas of Placer County will be policed by the Placer County Sheriffs Department. Police patrols could utilize bicycles when feasible or necessary due to accessibility issues. Fire suppression will be provided by the various fire departments and fire protection districts already established in the Greenway area. Certain situations may arise requiring simultaneous response from several of these entities, and the municipal and County emergency response agencies already have communication and coordination procedures in place for such events. As Greenway trails and facilities are developed, it will be critical for the local governments to keep all emergency services department informed about the location of trails and emergency access routes.

7.6.1 Trails and Facilities

Public safety considerations related to trails and facilities include such tasks as managing vegetation to provide visual access for patrolling and clear lines of sight for trail users, maintaining safety lighting, and repairing surface damage to paved trails. It is expected that such activities will be handled by the entities with responsibility for trail and facility maintenance.

7.6.2 Fire Prevention

Fuel load management and fire prevention are also another important safety issues in the Greenway. In less urbanized landscapes, fire is sometimes regarded as a viable vegetation management strategy. However, this is not an appropriate technique for the Greenway for a number of reasons. A fire in the Greenway would have the potential to cause significant damage to the many adjacent homes, businesses, and other structures. A fire could also result in major disruption to the terrestrial and aquatic ecosystems by wiping out riparian vegetation. This would contribute to a number of adverse impacts including destabilization of stream banks, sedimentation, increased water temperatures, and destruction of habitat for foraging, nesting, and cover for wildlife and birds. The management strategy for the Greenway therefore includes the need to manage fuel loads both in the Greenway and on adjacent properties, to establish fuel breaks where appropriate, and to limit behavior or activities that could ignite a fire.

Identifying specific standards for fuel load reduction and fuel breaks will require coordination between the local fire jurisdictions, public and private property owners, and resource specialists to find the proper balance between preserving habitat values and fire protection. Because standards will vary throughout the Greenway according to factors such as site topography, proximity to structures, access, and vegetation conditions, it is not useful to recommend a single fire management prescription. Instead,

local jurisdictions are encouraged to identify appropriate prescriptions for their conditions in consultation with the fire departments/districts and habitat preservation specialists, and disseminate this information to the owners of property within and adjacent to the Greenway. The potential Greenway implementation strategies listed in Chapter 4 for Vision Statements 4 and 5 also provide further direction on managing activities that could create a fire hazard, and general recommendations for fuel management and firebreaks. One example of a recommendation presented in the Vision Statements that would have strong benefits for fire safety in the recreational corridors is designing bicycle and pedestrian trails to meet access standards for utility/maintenance and fire control vehicles. Refer to Chapter 4 for additional information.

7.6.3 Code Enforcement

Since the Greenway traverses through the four independent jurisdictions of Placer County, Rocklin, Roseville, and Loomis, ordinances related to Greenway activities may vary throughout the Greenway. This can cause confusion when trail users cross jurisdictional boundaries. For example, one jurisdiction may prohibit dogs on public trails while another does not. Because such ordinances are established by the local governments and reflect the values of the community, it may neither be feasible or appropriate to implement a single set of uniform ordinances throughout the entire Greenway area. Where such differences do exist, signage should be posted along trails at jurisdictional boundaries informing users of the local codes. Code enforcement will be the responsibility of the local jurisdictions.

7.6.4 Patrols

Oversight of Greenway activities and conditions will be accomplished through the collective efforts of police, parks and facilities maintenance staff, volunteer patrol groups, and the users of the Greenway trails and facilities. As trails and facilities are implemented, information needs to be distributed instructing the public about procedures to report emergencies or code violations. Community groups, neighborhoods, and NGOs are strongly encouraged to establish volunteer patrols for their local portions of the Greenway to raise awareness of Greenway resources and to help educate the community about their role in Greenway stewardship. Emergency telephones at Greenway nodes could provide vital communications links to emergency services.

7.7 Restoration

Habitat restoration within the Greenway will be accomplished in coordination with other natural resource enhancement plans currently under development for the watershed and specific projects that are being developed by the various Greenway partners. These include the Dry Creek Watershed Plan, Placer County's Open Space and Agricultural Conservation Program, and the City of Roseville's Creek and Riparian Management and Restoration Plan, as well as the restoration activities of the Dry Creek Conservancy, and the Placer County Flood Control and Water Conservation District. Each of these plans is expected to identify restoration priorities that will ultimately be implemented as funding and resources become available. Chapter 5 of this Regional Vision suggests high priority restoration areas based on the potential for enhancing habitat connectivity within the Greenway.

Implementation of restoration projects may be the responsibility of any of the local jurisdictions, interested school or community groups, public agencies, or NGOs. The Dry Creek Watershed Council will provide a forum through which individual projects and groups may coordinate to work more efficiently and to leverage technical expertise for design, construction, and permitting.

7.8 Education

Public outreach and education are critical elements of the Greenway management strategy because they provide the mechanisms by which to foster stewardship and to create a strong identify for the Greenway as a community and regional resource. Education about the Greenway and its resources will happen through the efforts of local jurisdictions, schools, and NGOs such as the Dry Creek Conservancy and the Placer Land Trust. Education needs to include a variety of local programs and events as well as comprehensive Greenway programs, targeting all age groups.

7.9 Acquisition

The public acquisition of private property within the Greenway for public access and/or habitat preservation is primarily the responsibility of the local jurisdictions, possibly working with NGOs. Acquisition is understood to include both fee title purchases of property and the purchase of easements in perpetuity for habitat and/or recreation uses. The timing and priority of any acquisitions will be determined by the local jurisdictions based on funding, the jurisdictions' desire and/or ability to manage additional public land, and any other relevant considerations. Other mechanisms by which acquisitions may occur include dedication as part of the development approval process, donations from private property owners, and purchases of property for flood management or other public uses that may be compatible with the recreation and habitat objectives of the Greenway.

Since all of the Greenway is located within the 100-year floodplain, opportunities for residential or commercial development are already constrained by the local governments. This will help to significantly suppress the per acre cost of Greenway property. Funding for acquisitions may come from grants, donations, public revenues, or mitigation fees. A special district could also be formed to collect a development tax for Greenway property acquisition and additional park fees may be designated by local jurisdictions within the Dry Creek watershed for acquisition and maintenance of the Greenway.

Chapter 9 of this Regional Vision identifies priority areas for acquisition that are needed to complete significant trail or habitat connections. Priorities are based on a consideration of several factors including the size of the Greenway property, the number of owners and/or separate parcels involve in the transaction, and the habitat and/or recreational value that would be gained through the easement. The actual sequence of acquisition, however, will not necessarily occur according to the identified priorities. The most important factors that will determine when acquisitions will occur are having a willing seller, the capacity for a local government or NGO to manage the property, the availability of funding, and the cost of the acquisition.

8.0 EDUCATION AND STEWARDSHIP

There are many environmental education and stewardship opportunities already available to residents living in the Greenway region. Local jurisdictions, community groups, and the schools all provide varying levels of outreach. However, the need for additional public education and increased levels of stewardship is still very great. There are many segments of the population not being effectively reached, and these people have the potential to have a significant impact on the Greenway conditions. Therefore, this vision document addresses the need for education and outreach to complement and supplement the many important efforts already underway.

8.1 Objectives

Public acceptance and support of the Dry Creek Greenway Regional Vision is critical to its success, especially with respect to habitat management and recreation components. This acceptance will depend on an ongoing, comprehensive approach to public education and implementing measures to encourage resource stewardship among all Greenway residents and visitors. Public education and outreach efforts for the Greenway include the following objectives:

- Increased awareness of and caring for creeks and their functions, leading to increased advocacy for the health of creek systems,
- Increased awareness of the potential impact of individual actions on the creek system and its associated habitats,
- Education on the proper landscape management techniques to decrease environmental impacts and enhance habitat values,
- Increased participation in monitoring the health of the creek systems,
- Increased volunteerism in creek restoration, and
- Improved land management of properties abutting the creeks.

8.2 Education Focus Areas

There are four key areas in which additional public education and outreach efforts need to be focused. Programs and events should be designed to address these areas in an integrated manner because they represent meaningful opportunities to make significant improvements in the extent and quality of Greenway stewardship.

8.2.1 Individual Behaviors

The manner in which individuals manage their own properties and use the creek corridors for recreation has a significant impact on water and habitat quality. Table 8-1 briefly summarizes homeowner actions that affect the ecological health and stability of the creek system and actions that individual homeowners can take to mediate these effects. Individually, impacts from these types of actions by average homeowners may have a small impact on the stream system. Cumulative impacts, however, can create major problems for wildlife, fish, benthic macroinvertibrates, channel stability and water quality.

Runoff from managed landscapes may contain high levels of fertilizers, herbicides, and pesticides that can significantly impair the aquatic habitat. However, many people participating in the public workshops during development of the Greenway Vision indicated that they were not aware that surface runoff drains directly to the creeks. The use of off-road vehicles operated along the creek banks and crossing through the channel may result in major erosion and bank failure, and destruction of riparian habitat. Flood conveyance can be adversely impacted by the placement of fences or the accumulation of litter in culverts, leading to bank failure, loss of mature riparian vegetation, erosion, and sedimentation within the creek. Certain non-native ornamental plant species can escape the cultivated landscape and supplant native species growing in the creek corridor that are important to wildlife. The success of the Greenway vision will require that property owners and visitors are educated about the impacts of their actions and provided with alternative management strategies that are harmonious with the Greenway vision.

Table 8-1 Homeowner Impacts and Actions

Action	Impact	Homeowner Alternatives
Use of herbicides and pesticides	Diazinon, malathion, and other chemical treatments enter streams through runoff.	Practice IPM, use environmentally friendly pesticides such as insecticidal soap and lower impact herbicides such as Roundup.
Use of excessive fertilizers	Excessive nitrates and phosphates enter streams through runoff, promoting algae growth and resulting in lower oxygen levels for fish.	Use hardier varieties of grass that require less fertilizer and water. Control application rates to contain runoff. Replace lawns with groundcovers.
Car washing in driveways	Excessive phosphates enter streams through runoff.	Use car washes that reclaim water. Wash without soap or with low phosphate soaps and in areas where runoff is contained.

Action	Impact	Homeowner Alternatives
Excessive irrigation	Extra water entering stream system disrupts natural flow. Aquatic organisms sometimes cannot adapt to new flow regime. Fish fry are washed downstream or out of cover.	Irrigate less frequently and at slower rate. Contain runoff.
Excessive stormwater runoff	Excessive water entering stream disrupts natural flow. Cumulatively, this causes stream incision, erosion, siltation and many other negative effects.	Contain runoff from downspouts through diverting to landscape areas, collection in cisterns, and other methods.
Use of invasive plants in landscaping	Invasive plants escape into the natural system, displacing natives, clogging waterways and degrading habitat.	Avoid use of invasive plants. Use only recommended native species in natural areas.
Failure to collect or properly dispose of pet wastes	Wastes can enter waterways through stormwater runoff, increasing nitrates in the water, which increases vegetation growth that may clog waterways and reduce dissolved oxygen.	Collect pet wastes and dispose of in municipal waste system.
Disturbance of soil in home improvement or landscaping projects	Excessive siltation of creeks which leads to aggradation and burying of salmonid spawning gravels.	Use care to contain or protect disturbed soil until the area is revegetated. Mulches can be used to reduce soil exposure to direct impact from rain.

8.2.2 Greenway Geography

A surprising number of people living in the Greenway communities have little knowledge about where the creeks within the Dry Creek Watershed are located and how the flows are connected. Input from the public during development of the Regional Vision indicated that many people aren't even aware of the presence of a creek as they pass over it on a road crossing. Some residents have a high degree of familiarity about the reaches that are located in their neighborhoods, but very little understanding about other parts of the system. A fundamental part of building Greenway stewardship is making people more aware of where the creeks are located and how they interface with neighborhoods and communities.

8.2.3 Community-wide Education and Outreach

Outreach efforts should be developed for all age groups and a diversity of interests in order to establish a broad and continuing base of Greenway stewardship. It is also important to design outreach program that provide stewardship opportunities across a wide range of participatory levels.

Public education begins with school-age children, but is also needed for adults. Fostering a sense of environmental stewardship in children using the public education system will help to create watershed residents that care about the watershed in which they live, and their impact on the creek systems. This will contribute to long-term improvements in water quality, creek channel stability, and wildlife and aquatic habitat. Short-term improvements, however, rely especially on educating the adult residents. As noted, many human impacts on the environmental health of the stream system require changing individual decisions about how to care for the land, dispose of trash, and use the creek corridors for recreation.

A significant element of the adult population that needs to be engaged in the education process is comprised of residents who are unknowingly engaging in practices or behaviors that are detrimental to Greenway ecosystem function but have no awareness of the adverse impacts associated with their actions. Many of these people are not inclined to actively participate in an environmentally focused organization, but are nevertheless concerned about the quality of the environment and do not wish to be contributing to its degradation. Making these people aware of how their choices are impacting the ecosystem, and providing them with practical alternative choices could allow a significant number of people to play a meaningful stewardship role who might otherwise not be engaged.

8.2.4 Understanding Ecosystem Function

The Dry Creek Greenway includes a biologically diverse and complex ecosystem. The quality and effectiveness of public stewardship will be directly proportional to public's understanding of the interdependencies of species and ecosystem functions. During the public input process, residents repeatedly indicated a strong desire to learn more about the creek ecosystem and felt that such awareness would significantly enhance their enjoyment and appreciation of the resource. Absent this knowledge, individual actions that may be well-intended are often misguided. Some residents spoke of "pruning" trees in the riparian zone to make them more attractive without realizing that they may be damaging the health and function of the tree. Others spoke of capturing migrating salmon without realizing they were preparing to spawn and are a protected species. Lack of ecosystem understanding also leads to individuals implementing measures on their own property that seem to effectively address a problem, such as bank stabilization, without realizing how their actions may result in significant problems downstream or upstream of their property.

8.3 Recommended Outreach Topics

Topics for public education should range from general topics on watersheds and stream health to specific issues such as the impact of landscape care chemicals on waterways and aquatic life. Some sample topics that could be presented through any variety of outreach methods are presented below.

- What is a Watershed?
- Understanding the Geography of the Watershed,
- Plants and Animals of the Dry Creek Greenway,
- Sharing the Greenway with Wildlife: A Guide for Trail Users,
- Environmentally Sound Alternatives to Home Landscaping and Maintenance Products,
- The History of the Streams in the Greenway,
- The Impact of Household Chemicals on Streams,
- How Integrated Pest Management (IPM) Can Benefit Ecosystem Health,
- Where Wastewater and Storm Runoff Go,
- How Wastewater is Treated,
- Sediment Sources and Erosion Management,
- Alternatives to Invasive Non-native Plants.

8.4 Outreach and Education Methods

In order to reach the broadest base of potential Greenway stewards, many different types of outreach methods are needed. Strategies for public involvement typically involve hosting events or activities that expose the public to the desired material in a manner that is fun and engaging. However, it is important to recognize that many people chose not to or are unable to participate in these events. Therefore, outreach strategies need include those that will reach people in their homes and in the course of their day-to-day activities. Following are outreach methods that have been used in the past, and/or may have good potential for the future.

- Locating graphic displays in Library and Civic Centers,
- Continuing watershed group meetings and events and encouraging private stakeholder participation,
- Continuing Dry Creek Conservancy outreach efforts such as creek walks and monitoring workshops,
- Continuing sponsorship for Creek Week,
- Developing a watershed website,
- Establishing a mechanism to aid private landowners in obtaining grant funds for restoration and enhancement projects,
- Conducting in-home neighborhood meetings/demonstrations,
- Mailing fliers or brochures covering information such as who to contact to report damage or degradation to creeks, or locating such fliers or brochures at places such as Greenway nodes,
- Including Greenway information in tax or utility bills, or mailings from the school, fire, and water districts,

- Providing a reference guide for creek side homeowners introducing appropriate native plants for planting in riparian zones, runoff controls to prevent pollution of streams from household chemicals and wastes, etc.,
- Working with local nurseries to create "amnesty" programs allowing homeowners to replace invasive non-natives with native species,
- Setting up displays at local nurseries showing invasive non-natives and suitable native alternatives,
- Helping private homeowners to establish "demonstration" landscapes in their own yards to showcase environmentally friendly management practices and materials as examples for their neighbors,
- Working with manufacturers of environmentally beneficial products to provide demonstrations and special purchasing opportunities,
- Establishing a "Friends of the Greenway" group.

A comprehensive program of stakeholder involvement and public education will be key to implementation and success of the Greenway. A large portion of the watershed is in private ownership, and support of the watershed residents is necessary for long-term improvement of wildlife and aquatic habitat, water quality, and recreational opportunities.

9.0 COST ESTIMATE

Full implementation of the Dry Creek Greenway Regional Vision potentially includes a variety of components including development of the trail system and associated infrastructure, habitat conservation and restoration, public education, and expanded stewardship opportunities. This chapter only addresses the estimated implementation costs for the trail system and related improvements because 1) the trail system component is clearly defined, 2) reliable costing information for comparable improvements is available, and 3) local jurisdictions may wish to use the information for future planning and grant writing efforts. The costs associated with implementing the other components of the Greenway vision cannot be estimated at this time since the vision document does not address the myriad possibilities and specific details for how the habitat conservation and restoration, public education, and stewardship projects could be implemented. While suggested measures are provided, the methods for implementation of these measures will be driven by the preferences and availability of resources of the local jurisdictions.

The trail system costs include estimates from Placer County (Table 9-1), the City of Roseville (Table 9-2), and the Town of Loomis (Table 9-3) taken from existing regional and master bicycle plans, and the costs for trails recommended in the Greenway vision that aren't included in existing plans (Table 9-4). The planned trail segment along Secret Ravine within the City of Rocklin is included in the Placer County estimate. The intent of Table 9-4 is to capture costs for Greenway improvements that are not included in existing plans. This includes construction of bikeways for trails recommended by the Greenway Vision as well as costs for all nodes and trail signage along planned and recommended segments. In some cases, costs for bridges and road crossings have been included in Table 9-1 through Table 9-4, if these have been estimated in existing plans; otherwise, they have been specified as TBD.

This estimate does not include the cost of maintaining trails or staging areas, which is a significant funding requirement that must be secured prior to constructing these amenities. This estimate is an approximation in c. 2003 dollars for the cost of implementation and does not include increases in land valuation or construction of site amenities beyond those listed in the spreadsheets presented in Table 9-1through Table 9-7.

Two scenarios are presented in the Greenway Cost Summary (Table 9-5) and included in the overall Summary of Estimates (Table 9-6). These scenarios differ in the approach to obtaining access to private property for recommended trails (trails not currently proposed in existing City, Town or County plans). The first assumes fee-title purchase from willing property owners of those parcels through which the trail passes. The second scenario assumes that easements can be acquired for the recommended trails. The per-acre price of land is assumed to be approximately the same in both scenarios since the land under consideration is in the floodplain and construction is restricted in this area. This means that the cost of the easement is equal to the cost of the land on which it lies. The actual costs will probably fall somewhere in between these two estimates, since some parcels are likely to be acquired by fee-title and others by easement. This is reflected in Table 9-6 which averages the fee-title and easement estimates.

Table 9-7 shows a cost breakdown of the various node types, including specific site amenities. The unit costs used have been compiled from either actual costs of similar elements in projects that have been built or are under construction or from manufacturer estimates. Five types of nodes have been identified as part of the Greenway vision.

Type A nodes are small neighborhood access points, generally located within neighborhood greenways or open space or where the Greenway passes through residential neighborhoods. Type A nodes will typically have signs designating the Greenway, trail rules, and/or a map of the trail system. Parking is not included.

Type B nodes are community access nodes and are similar to Type A, with the addition of 5-10 parking spaces.

Type C nodes are medium-sized community access nodes. They offer signs, 10-20 parking spaces, access to equestrian trails, and some amenities such as benches or trash receptacles.

The largest nodes are Type D. These nodes are intended for staging areas, rest areas and regional access. Type D nodes have plumbing and a pre-fabricated restroom. Amenities at a Type D node include a drinking fountain, benches, tree plantings, and additional signage, perhaps within a kiosk structure and containing educational information on the Greenway system.

Type E nodes occur where Greenway access points coincide with developed parks. The parks are expected to provide the amenities described for a Type D node, but additional interpretive elements will be added to reflect the junction with the Greenway.

The summary of Greenway costs is presented in three phases. Phase one includes all trails and associated amenities required for construction of the main bikeway connection from the Dry Creek Parkway to the Folsom Lake State Recreation Area. This corridor follows Dry Creek, Cirby Creek, Linda Creek and a tributary to Linda Creek named Swan Stream from the Sacramento County line to the powerline corridor between Sierra College Boulevard and Roseville Parkway. East of this powerline corridor, the Greenway connects to a County off-street bikeway that follows a public easement through the Baldwin Reservoir area to FLSRA. Phase two consists of trail segments running north from the Dry Creek-Cirby Creek confluence to the Secret Ravine/Miners Ravine confluence. From that point, one branch follows Secret Ravine to Rocklin Road and the other follows Miners Ravine to Sierra College Boulevard, eventually connecting the Greenway to the FLSRA along Douglas Boulevard. Phase three includes many smaller segments of bike and equestrian trails that connect trails constructed in phases one and two to neighborhood bike routes, northern Placer County, and on-street bike trails. Figure 9-1 shows the Greenway corridor phasing plan.

There are a total of 8 nodes in Phase 1 as follows: 2 Type A neighborhood access nodes, 4 Type B small community access nodes, 1 Type C medium community access node and 1 Type D regional access node. A Type D node is the most expensive at approximately $100,000, and a Type A node is the least expensive at $1,100. Some segments of phase one trails are currently planned or under construction as part of residential developments along Dry Creek. Segments known to be in some phase of construction, such as that associated with the Morgan Creek development, were not included in the estimates.

Eight nodes are included in Phase 2: 5 Type A, 1 Type C, 1 Type D and 1 Type E. Trails along Antelope Creek, the upper portion of Secret Ravine Creek, Cirby Creek, and

Clover Valley Creek are all included in phase three. A total of 19 nodes are included in this phase: 11 Type A, 2 Type B, 2 Type C and 4 Type E.

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Watershed Boundary

Nodes

- A - Neighborhood Node, no parking
- B - Local Node, parking
- C - Equestrian Node
- D - Regional Node, parking, facilities
- E

Greenway Phasing

- Phase I Trails
- Phase II Trails
- Phase III Trails

Trails

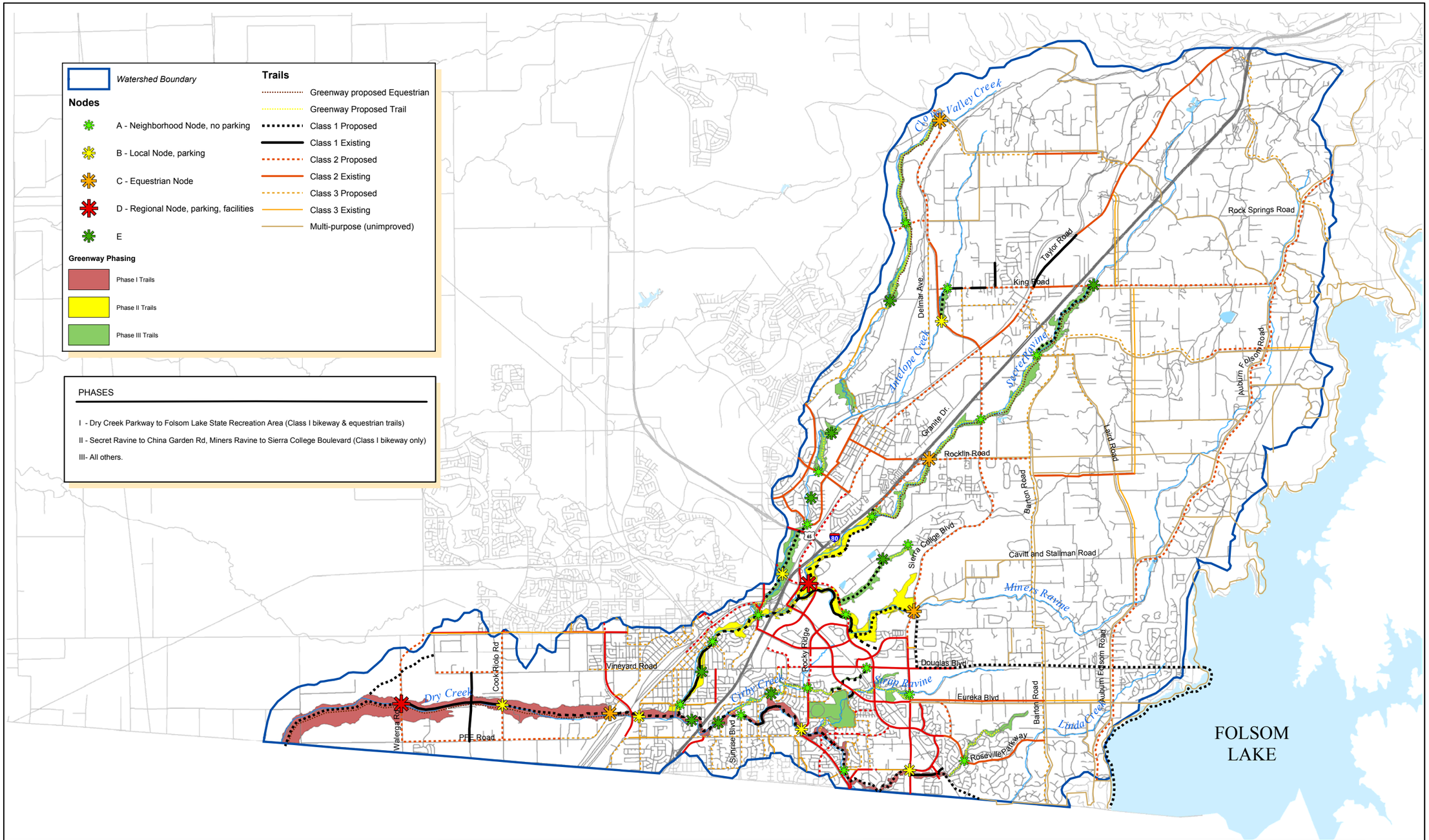
- Greenway proposed Equestrian
- Greenway Proposed Trail
- Class 1 Proposed
- Class 1 Existing
- Class 2 Proposed
- Class 2 Existing
- Class 3 Proposed
- Class 3 Existing
- Multi-purpose (unimproved)

PHASES

I - Dry Creek Parkway to Folsom Lake State Recreation Area (Class I bikeway & equestrian trails)

II - Secret Ravine to China Garden Rd, Miners Ravine to Sierra College Boulevard (Class I bikeway only)

III- All others.



GREENWAY PHASES

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE

N

SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 9-1

9-1 phasing.mxd

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Table 9-1 Placer County Class I Bike Path Cost Estimate[26]

Placer County Regional Bikeway Plan Class I Bike Path Cost Estimates							
Segment	**Description**	**Length (miles)**	**Bike Path**	**Creek Crossing**	**Roadway Crossing**	**Other Costs**	**Estimated total**
Dry Creek	County line to Walerga Road	1.9	$760,000	TBD	TBD	TBD	$760,000
Dry Creek	Cook Riolo Road to Roseville City limits	1.9	$760,000	TBD	TBD	TBD	$760,000
Secret Ravine	Roseville City limits to China Garden Road	0.6	$240,000	TBD	TBD	TBD	$240,000
Swan Stream	Roseville City limits to Sierra College Boulevard	1	$400,000	TBD	TBD	TBD	$400,000
Total		**5.4**	**$2,160,000**	**TBD**	**TBD**	**TBD**	**$2,160,000**

Placer County assumes $400,000 per mile of Class I bikeway

[26] Placer County Regional Bikeway Plan

Table 9-2 City of Roseville Class I Bike Path Estimate[27]

City of Roseville Bicycle Master Plan Class I Bike Path Cost Estimate							
Segments included in 10 Year Plan							
Segment	**Description**	**Length (miles)**	**Bike Path**	**Creek Crossing**	**Roadway Crossing**	**Other Costs**	**Estimated total**
Antelope Creek	Atlantic Street to Rocklin City limit	1.5	$600,000	$100,000	$700,000	None	$1,400,000
Dry Creek	I-80 to Royer Park	TBD	$1,000,000	None	$700,000	None	$1,700,000
Cirby/Linda Creek	Oakridge Dr. to ped bridge at Eastwood Park	0.8	$320,000	$100,000	Existing	$128,000	$548,000
Cirby/Dry Creek	Ped bridge at Eastwood Park to Darling Way	0.9	$360,000	$200,000	$600,000	$312,000	$1,472,000
Linda Creek	Connecting two existing paths near Sierra Gardens and Eich Schools	0.2	$80,000	None	None	$14,000	$94,000
Cirby Creek North	Johnson Ranch Dr. to E. Roseville Parkway	0.8	$320,000	$40,000	$400,000	$162,000	$922,000
Darling Way	Undercrossing	0.01	None	None	$200,000	$100,000	$300,000
Subtotal	**10 year plan**	**4.21**					**$6,436,000**
Segments not included in 10 Year Plan							
Segment	**Description**	**Length (miles)**	**Bike Path**	**Creek Crossing**	**Roadway Crossing**	**Other Costs**	**Estimated total**
Dry Creek	City limits to Cirby Creek	1.4	$560,000	TBD	TBD	TBD	$560,000
Linda Creek	Sierra Gardens Drive to City limits	1.7	$680,000	TBD	TBD	TBD	$680,000
Miners Ravine	I-80 to Secret Ravine confluence	0.5	$200,000	TBD	TBD	TBD	$200,000
Secret Ravine	Confluence with Miners Ravine to City limits	1.2	$480,000	TBD	TBD	TBD	$480,000
False Ravine	Confluence with Miners Ravine to Secret Ravine Pkwy	1	$400,000	TBD	TBD	TBD	$400,000
Miners Ravine	End of existing trail to Sierra College Blvd	1.2	$480,000	TBD	TBD	TBD	$480,000
Subtotal	**Beyond 10 year plan**	**7**	**$2,800,000**	**TBD**	**TBD**	**TBD**	**$2,800,000**
Total							**$9,236,000**

City of Roseville assumes $400,000 per mile of Class I bikeway

[27] City of Roseville Bicycle Master Plan

Table 9-3 Town of Loomis Class I Bike Trail Estimate[28]

Town of Loomis Bikeway Master Plan Class I Bike Path Cost Estimates							
Segment	**Description**	**Length (miles)**	**Bike Path**	**Creek Crossing**	**Roadway Crossing**	**Other Costs**	**Estimated total**
Secret Ravine	King Road to Brace Road/Town limits	1.5	$600,000	TBD	TBD	TBD	$600,000
Antelope Creek	King Road to Sierra College Boulevard	1.9	$760,000	TBD	TBD	TBD	$760,000
Total		**3.4**	**$1,360,000**	**TBD**	**TBD**	**TBD**	**$1,360,000**

Town of Loomis assumes $400,000 per mile of Class I bikeway

[28] Town of Loomis Bikeway Master Plan

Table 9-4 Dry Creek Greenway Recommended Improvement Estimate

COST ESTIMATE FOR GREENWAY RECOMMENDED IMPROVEMENTS												
Trail Segment	Description	**Length (miles)**	Bike Path	Nodes	Trail Intersection	Minor Roadway Crossing	Major Roadway Crossing	Other Roadway Crossing	Equestrian Trail	Creek Crossings	Phase	**Subtotal, segment**
Dry Creek	County Line to Cirby Creek	0	$0	$146,000	$1,800	$0	$0	$0	$115,500	$0	1	**$263,300**
Cirby Creek	Dry Creek to Linda Creek	0	$0	$0	$600	$0	$0	$0	$0	$0	1	**$600**
Linda Creek	Cirby Creek to Swan Stream	0	$0	$14,300	$3,600	$0	$0	$0	$0	$0	1	**$17,900**
Swan Stream	Linda Creek to Powerline corridor	0	$0	$12,100	$1,200	$0	$0	$0	$0	$0	1	**$13,300**
Dry Creek	Cirby Creek to Miners Ravine	0	$0	$12,050	$600	$0	$0	$0	$0	$0	2	**$12,650**
Miners Ravine	Dry Creek to Sierra College Blvd.	0	$0	$23,050	$3,000	$0	$150,000	$0	$0	$0	2	**$176,050**
Secret Ravine	Miners Ravine to China Garden Rd.	0	$0	$100,950	$600	$0	$0	$0	$0	$0	2	**$101,550**
Cirby Creek	Linda Creek to Douglas Boulevard	1.8	$720,000	$2,200	$2,400	$6,000	$300,000	$0	$0	$100,000	3	**$1,130,600**
Strap Ravine	Linda Creek to Sierra College Blvd.	1.16	$1,384,000	$1,100	$2,400	$4,000	$0	$20,000	$0	$100,000	3	**$1,511,500**
Swan Stream	Powerline corridor to Pastor Dr.	0.88	$352,000	$1,100	$0	$1,000	$0	$0	$0	$0	3	**$354,100**
Antelope Creek	Miners Ravine to Springview Dr.	0.36	$144,000	$13,200	$1,800	$1,000	$0	$10,000	$0	$0	3	**$170,000**
Antelope Creek	Sunset Boulevard to Farron Str.	0.84	$336,000	$9,850	$0	$0	$0	$0	$0	$0	3	**$345,850**
Antelope Creek	Sierra College Blvd. to King Rd.	0.48	$192,000	$13,200	$0	$0	$0	$0	$0	$0	3	**$205,200**
Secret Ravine	China Garden Road to King Rd.	3.86	$1,544,000	$43,900	$0	$3,000	$150,000	$5,000	$81,060	$200,000	3	**$2,026,960**
Clover Valley Ck.	Rawhide Rd. to Sierra College Blvd.	3.22	$1,288,000	$31,800	$0	$2,000	$0	$0	$67,620	$200,000	3	**$1,589,420**
False Ravine	Secret Ravine to Scarborough	0.42	$168,000	$9,850	$0	$1,000	$0	$0	$0	$0	3	**$178,850**
Totals		**13.02**	**$6,128,000**	**$434,650**	**$18,000**	**$18,000**	**$600,000**	**$35,000**	**$264,180**	**$600,000**		**$8,097,830**
Dry Creek Greenway assumes $400,000 per mile of Class I bike path												

*This table does not include the cost of property acquisition.

Table 9-5 Greenway Improvements Cost Summary

GREENWAY COSTS - SUMMARY				
Trail Segment	**Phase I**	**Phase II**	**Phase III**	**Total segment costs**
Dry Creek	$263,300	$12,650		**$275,950**
Cirby Creek	$600		$1,130,600	**$1,131,200**
Linda Creek	$17,900			**$17,900**
Strap Ravine			$1,511,500	**$1,511,500**
Swan Stream	$13,300		$354,100	**$367,400**
Clover Valley Creek			$1,589,420	**$1,589,420**
Antelope Creek			$721,050	**$721,050**
Secret Ravine		$101,550	$2,026,960	**$2,128,510**
Miners Ravine		$176,050		**$176,050**
False Ravine			$178,850	**$178,850**
Total Capital Costs	**$295,100**	**$290,250**	**$7,512,480**	**$8,097,830**
Easement acquisitions*	$0	$0	$1,960,000	**$1,960,000**
Total costs-easement	**$295,100**	**$290,250**	**$9,472,480**	**$10,057,830**
Fee Title acquisitions*	$0	$0	$6,575,000	**$6,575,000**
Total costs-fee title	**$295,100**	**$290,250**	**$14,087,480**	**$14,672,830**
Average: fee title+easement acq.	**$295,100**	**$290,250**	**$11,779,980**	**$12,365,330**

Table 9-6 Overall Greenway Summary of Costs

Dry Creek Greenway Summary of Estimates

Jurisdiction	Cost
City of Roseville planned improvements[1]	$7,884,000
Placer County planned improvements[2]	$2,160,000
Town of Loomis planned improvements[1]	$1,360,000
Dry Creek Greenway recommended improvements[3]	$9,737,230
Grand Total	**$21,141,230**

[1]Does not include items marked TBD

[2]Includes City of Rocklin planned improvements

[3]Assumes mix of easement and fee title acquisitions

Table 9-7 Node Cost Estimate

NODE COST BREAKDOWN				
TYPE A - NEIGHBORHOOD ACCESS				$1,100
DIRECTIONAL SIGNAGE	1	LS	$500.00	$500
BOLLARD/TRAFFIC CONTROL	1	EA	$600.00	$600
TYPE B - SMALL PUBLIC ACCESS				$12,100
DIRECTIONAL SIGNAGE	1	LS	$500.00	$500
5-10 PARKING SPACES	1	LS	$11,000.00	$11,000
BOLLARD/TRAFFIC CONTROL	1	EA	$600.00	$600
TYPE C - MEDIUM PUBLIC ACCESS/ EQUESTRIAN				$21,950
INTERPRETIVE/DIRECTIONAL SIGNAGE	1	LS	$1,000.00	$1,000
BENCH	1	EA	$500.00	$500
10-20 PARKING SPACES	1	LS	$19,250.00	$19,250
BOLLARD/TRAFFIC CONTROL	2	EA	$600.00	$1,200
TYPE D - PUBLIC ACCESS/ STAGING AREA				$99,850
INTERPRETIVE/DIRECTIONAL SIGNAGE	1	LS	$1,750.00	$1,750
KIOSK	1	LS	$1,000.00	$1,000
20-40 PARKING SPACES	1	LS	$37,400.00	$37,400
TREE PLANTING	15	EA	$300.00	$4,500
DRINKING FOUNTAIN	1	EA	$3,000.00	$3,000
BENCH	2	EA	$500.00	$1,000
PRE-FAB RESTROOM	1	LS	$50,000.00	$50,000
BOLLARD/TRAFFIC CONTROL	2	EA	$600.00	$1,200
TYPE E - PARK				$8,750
INTERPRETIVE/DIRECTIONAL SIGNAGE	1	LS	$4,750.00	$4,750
KIOSK	1	LS	$4,000.00	$4,000

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10.0 FUNDING STRATEGIES

All of the elements described under the Greenway Management Strategy will require funding or other resources to be successfully implemented. These will be obtained through a combination of means including grants, donations, tax revenues, volunteer labor, and fees. Resources will be needed for both one-time expenses such as implementation of a restoration project, acquisition of property, a special educational event, or capital improvements, and for ongoing operations and maintenance.

Funding for one-time expenses is more readily available than for recurring costs. The majority of grants, due to their finite nature, cannot be utilized to fund recurring expenses. While some of the recurring management costs associated with the Greenway, such as public safety and existing trail maintenance may already be covered by local fees and assessments, full implementation of the Greenway will certainly require additional resources for expanded levels of operations and maintenance. The rate at which new Greenway trails and facilities are implemented may potentially be constrained more by the ability of the local governments to meet these recurring costs than the availability of funds for capital projects. It is critical that new Greenway trails and facilities not be developed unless adequate resources are available to manage them in a manner that assures the safety of Greenway visitors and the adjacent community, and the protection of the Greenway's natural resources.

10.1 Resources for Recurring Costs

Local assessments already in place provide revenues for the General Funds of Placer County, Roseville, Rocklin, and Loomis. Special districts and HOAs also collect assessments that fund their obligations. These are the primary sources of funding for police, fire, parks, trails, public utility, and flood management services within the Greenway. Some of the local governments also assess a dedicated open space tax to help fund the costs specifically associated with open space management, and other may wish to implement a similar assessment. Ongoing funds for habitat management of preserves or mitigation sites are also potentially available from endowments that are created in perpetuity as a condition of development or under the terms of a conservation easement. Fees are also a possible source of operation and maintenance funds for the Greenway. These might include user fees, facility rental fees, group activity fees, and private utility leases provided such activities and uses are consistent with the goals and policies of the Greenway.

Operations and maintenance of existing trails, facilities, and dedicated preserves areas within the Greenway are currently being funded through these various mechanisms and it is expected that the same sources would be relied upon as additional Greenway areas are implemented. Local governments will need to assess the incremental cost associated with operations and maintenance of new Greenway areas before committing the capital resources to implement improvements in these areas. To the extent that Greenway operations and maintenance are not already addressed by other budget items, a level of subsidy should be committed to the Greenway from General Fund monies to guarantee at least a minimum annual budget for Greenway operations and maintenance.

Greenway partners should also consider the establishment of a special district specifically to generate funds for Greenway maintenance and operations that would supplement the revenues available through the general fund or other assessments.

10.2 Grants

Due to the many diverse uses of the Greenway, and its regional significance, there are many federal, state, and private programs that offer grants intended to implement one or several of the Greenway objectives. A selection of these programs is described in Appendix A. Most of these grants will provide one-time funding for a specified project or activity, but may allow for the awarding of additional funds in subsequent years to support phased planning and implementation of projects.

Grants will provide a significant portion of the funding required to implement the Greenway. While many of the NGOs working to implement the Greenway objectives have the capacity to pursue grant funding and to develop proposals, they may not have the structure capable of meeting requirements for accountability that many granting agencies require. Collaboration on grant applications between the NGOs and qualified local jurisdictions will greatly enhance the ability to successfully secure grant funding for Greenway projects. The Dry Creek Watershed Council provides the forum for Greenway partners to coordinate grant projects and applications to be sure that efforts are integrated and effective.

10.3 Volunteerism

Volunteerism of both individuals and businesses will be an essential resource for meeting the operations and maintenance needs of the Greenway. Community participation in coordinated trail patrols, educational programs, monitoring, and creek clean-up events can help reduce the amount of paid staff needed for such activities, and will allow those resources to be focused on tasks that cannot effectively be undertaken by volunteers. Local businesses or community organizations can also donate goods and services to help offset costs of regular maintenance.

Volunteers will also play a major role in helping to reduce the funds needed to implement certain types of capital projects such as restoration plantings and trail construction. The in-kind contributions of volunteers may often be used as a match to increase the strength of a grant proposal or meet grant eligibility requirements without having to dedicate funds that are needed for other purposes. Volunteer coordination will be essential to the successful mobilization of these resources. The local governments should consider establishing a designated staff person to facilitate volunteerism within the Greenway, and to work with the Dry Creek Watershed Council to leverage existing volunteer resources.

10.4 Donations and Sponsorships

A "Friends of the Greenway" foundation should be organized to provide a centralized means to solicit and accept donations for specific Greenway objectives and for the Greenway in general. Local business or individuals may also want to sponsor improvements or maintenance of a particular resources area, trail section, or facility by endowing the foundation with adequate funds for such a purpose. Bequests of money or land could also be received by the foundation, working in cooperation with local

governments and NGOs to establish mechanisms for ongoing maintenance and stewardship. Fundraising activities of the foundation would also result in significant education and public outreach to increase awareness of the Greenway and stewardship opportunities.

10.5 Leveraging Funding Opportunities

The ability of the Greenway partners to attract financial support is greatly enhanced by the multifunctional nature of the Greenway. Grants, sponsorships, endowments, and donations can be pursued that are aimed at promoting education, alternative transportation, conservation, historic/cultural resources, agriculture, recreation, health, and/or community development. The Greenway is also an important regional amenity that has the potential to become a destination spot for visitors. The resources of regional groups such as Sacramento Area Commerce and Trade Organization (SACTO), Sacramento Area Council of Governments (SACOG), and Placer County Transportation Planning Agency (PCTPA) should be utilized to help promote and implement the Greenway.

It is also critical for the Greenway partners to participate in the Regional Parkways Forum (RPF). The RPF was established in 2001 and is comprised of Sacramento Areas Flood Control Agency (SAFCA), Sacramento County, the City of Sacramento, and the Water Forum. The purpose of the RPF is to create an effective and efficient collaborative means to secure funding for acquisition, access, habitat enhancement, interpretation, and planning within six major open space/flood conveyance corridors located in Sacramento County and the City of Sacramento. The Dry Creek Parkway is one of these corridors and provides the western connection for the Dry Creek Greenway to the 70-mile regional open space system. Participation in the RPF will strengthen the funding position of the Greenway as well as the other six corridors by demonstrating a commitment to expanding coordination and cooperation into Placer County.

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Appendix A - Potential Greenway Grant Sources

FEDERAL

1. **Department of Transportation Intermodal Surface Transportation Efficiency Act (ISTEA)**
   The Act allows a portion of the transportation funds to be used to build bicycle paths along federal-aid highways, roads, trails or parkways.

2. **Watershed Assistance Grants Program (WAG)**
   The Clean Water Action Plan calls for the creation of a dedicated source of funding to build the capacity of existing or new watershed partnerships to protect and restore their watershed. These partnerships would serve as national demonstrations or models of how to bring together diverse interests to achieve watershed protection and restoration and of how to ensure diversity in watershed partnerships. The WAG program will make grants to local watershed partnerships to support their organizational development and long-term effectiveness. Grants area awarded for amounts between $1,500 to $30,000.

3. **Cooperative Endangered Species Conservation Fund**
   Granted by the U.S. Fish and Wildlife Service to a State agency with a cooperative agreement with the Secretary of the Interior to assist in the development of programs for the conservation of endangered and threatened species – including habitat protection, restoration, management and acquisition; and public education. Up to 75% of program costs may be received.

4. **Wildlife Conservation and Appreciate (Partnership For Wildlife)**
   Granted by the U.S. Fish and Wildlife Service. Available for actions to conserve fish and wildlife species and their habitats; and to provide opportunities for the public to use and enjoy fish and wildlife through nonconsumptive activities. Eligible for any fish and wildlife agency in partnership with State agencies and private organizations and individuals. Up to 33% of program costs may be received and private funding match required.

5. **Water Banks Program**
   Granted by the Department of Agriculture's Natural Resources Conservation Service, landowners are eligible for funds to conserve surface waters; preserve and improve wetlands and preserve important nesting, breeding and feeding areas of migratory waterfowl. Annual payments for 10 years will be made for $7 to $75 per acre.

6. **Wetlands Grants**
   Granted by the EPA's Office of Water, funds are available to States, local government and not-for-profit organizations to develop the capacity to protect, manage and restore wetlands and riparian resources. Minimum match of 25% of total project cost is required.

7. **North American Wetlands Conservation Fund**
   Granted by the U.S. Fish and Wildlife Service, funds are available for wetlands conservation projects to be matched one on one by U.S. non-federal dollars. Special consideration is given for migratory bird habitat and other key wildlife habitat. Beneficiary eligibility is available to any organization or individual.

8. **Urban Park and Recreation Recovery Program**
   Funded by the National Park Service, funds are available for the rehabilitation of recreation areas and facilities, demonstration of innovative approaches to improving recreation opportunities, and development of improved recreation planning. These grants are matching grants (50% Federal – 50% local).

9. **Recreational Trails Program**
   Granted by the Department of Transportation's Federal Highway Administration, this grant is available to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. A State agency must be dsignated by the Governor to receive the funds.

10. **Outdoor Recreation Acquisition, Development and Planning (Land and Water Conservation Fund Grants)**
    Grants provided by the National Park Service to acquire and develop outdoor recreation areas and facilities for the general public, to meet current and future needs. Not more than 50% of the project cost may be federally financed.

11. **Environmental Education Grants (EEG)**
    For grants provided by the EPA's Office of Environmental Education, funds are available to support projects to design, demonstrate, or dissenminate practices, methods, or techniques related to environmental education and training. Federal funds will not exceed 75% of the project cost.

STATE

1. **California's Department of Conservation Resource Conservation District (RCD) Assistance Program/Grants**
   This grant annually provides $120,000 to support conservation education and on-the-ground projects promoting conservation with landowners and communities within watersheds. Land restoration, fish and wildlife habitat enhancement, water quality conservation, and public outreach and education are all eligible actions supported with this grant. A 25% local match is required.

2. **State Lands Commission**
   Can acquire land through Land Bank funds and/or exchange.

3. **Department of Transportation**
   Proposition 116 - Bicycle trails funding.

4. **Resources Agency**
   State Environmental License Plate Funds - Grants are offered to state agencies, city or county agencies, or private non-profit organizations to support a variety of projects that help to preserve or protect environment. Eligible projects include acquisition, restoration or enhancement of resource lands and endangered species, and development of interpretive facilities. Projects are funded in one-year increments and each must be a separate, distinct project with a clearly defined benefit.

   Environmental Enhancement and Mitigation Program (EEMP) - Grants offered to local, state or federal agencies or non-profit entities to provide enhancement or additional mitigation related to eligible transportation facilities. Eligible projects include highway landscaping and urban forestry, acquisition restoration or enhancement of resource lands, and acquisition and/or development of roadside recreation opportunities. The program, established in 1989 (Section 164.56 of the Streets and Highways Code) provides funding from fuel taxes and weight fees.

5. **Department of Fish and Game**
   Inland Fisheries Division Grant Project provides funds for for fishery restoration work. Funds for this program come from a variety of sources.

   The Cigarette and Tobacco Tax Benefit Fund (Proposition 99) provides funds to restore fish habitat. The Commercial Salmon Stamp account provides funds for projects directed at restoring salmon populations through habitat enhancement or fish rearing, and for projects designed to educate the public on the importance and the ecology of salmon. Anyone may apply. Action projects are preferred to studies, evaluations or monitoring. Funding levels are recommended by the Commercial Salmon Trollers Advisory Committee or the California Advisory Committee on Salmon and Steelhead Trout.

6. **Wildlife Conservation Board (Generally administers the Federal Land and Water Conservation Fund)**
   Proposition 19 (1984 Fish and Wildlife Enhancement Bond Act) provides funds to correct the more severe deficiencies in fish and wildlife habitat. Funds may be used only by public agencies to enhance, develop or restore flowing waterways for the management of fish outside the coastal zone.Proposition 70 funds are available for endangered species and for native trout habitat restoration.

7. **Department of Water Resources**
   Urban Streams Restoration Program offers grants for local street restoration projects for prevention of property damage by floods and bank erosion and to restore the natural value of streams. Under the Proposition 13 - Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act, the grants can fund simple projects such as organizing volunteer help to monitor and clean up streams or can fund complex stream restoration work. Cities, counties, districts and nonprofit organizations may apply for grants. Small unincorporated community organizations or consulting firms may apply but must find a non-profit organization or a local government to sponsor this proposal. This grant program stresses community participation. Therefore, any proposal submitted by a government agency must be cosponsored by a logical local group with an interest in the problems or streams to be addressed by the proposal. Likewise, projects submitted by nonprofit organizations must be co-sponsored by an appropriate local agency.

8. **Department of Forestry and Fire Protection**
   The Urban Forestry Grant Program (Proposition 12 Tree Planting Grant) was created by the Watershed, Wildlife, and Parks Improvement Bond Act. Cities, counties, districts and nonprofit organizations may apply for grants. Eligible projects include planting trees along streets, in dedicated open space areas, and in public parking lots and school yards.

   Forest Stewardship Program - Funded by Federal dollars and administered by the State for private land owners only. Grants provided to protect, restore and improve wetlands and riparian areas to maintain water quality and enhance habitat. Eligibility is for private landowners as well as public jurisdictions. Small acreage from 20 to 299 acres of land.

9. **State Water Resources Control Board**
   The Nonpoint Source Pollution Control Program - Non-point sources (NPS) are the major cause of water pollution in California. As the state agency charged with protecting water quality in the State of California, the State Water Resources Control Board (State Board) is committed to promoting implementation projects that

reduce NPS pollution in waterbodies of the State. The February 1987 amendments to the federal Clean Water Act (CWA) include Section 319, which establishes the framework for non-point sources (NPS) activities on the State level. The CWA provides funding for the states' NPS programs, including grants for NPS implementation projects. Implementation projects to reduce NPS loading from various sources are eligible for grant funding. NPS implementation activities include demonstration projects, technology transfer, training, public education technical assistance, ordinance development, and other similar activities associated with control of NPS pollution. The amount of funds available is dependent upon Congressional appropriations.

Water Quality Planning - The State Water Resources Control Board provides water quality management planning grants to state, local, and regional agencies to address a wide variety of surface and ground water quality problems. These funds are provided by the federal government under Sections 205 and 604(b) of the Clean Water Act. These grants require a 25% non-federal match. The funding emphasis is on projects that focus directly on corrective or preventive actions for water bodies identified as "impacted" in the State's Water Quality Assessment. However, projects that focus on other water quality problems will also be considered. Projects which are primarily research-oriented will not normally be funded.

EPA's State Wetland Program Development - Under the Clean Water Act (CWA) Section 104 (b)(3), grants are given to various wetland projects include "multi-objective river corridor management" projects that address multiple use of rivers and adjacent areas, such as recreation habitat protection, water quality and open space. Funds available to assist states, and local government in implementing new programs relating to wetlands preservation and enhancement. Range of financial assistance for these project grants is generally $25,000 to $500,000.

10. Department of Parks and Recreation

Land and Water Conservation Fund - This program has funds available for the acquisition or development of neighborhood, community or regional parks or facilities supporting outdoor recreation activities. Eligible applicants include counties, cities, recreation and park districts, special districts with public park and recreation areas. This is a 50/50 matching program. The applicant is expected to finance the entire project and will be reimbursed 50% of the costs, up to the amount of the grant. The amount of funds available varies from year to year.

Riparian and Riverine Habitat Grant Program - To provide funds on a competitive basis to increase public recreational access, awareness, understanding, enjoyment, protection, and restoration of California's irreplaceable rivers and streams. Includes the acquisition, development, or improvement of recreation areas, open space, parks, and trails in close proximity to rivers and streams. All projects must include a Riparian or Riverine habitat enhancement element and also provide for public access. The minimum is $20,000, and the maximum is $400,000.

Habitat Conservation Fund - This program provides funds for a variety of habitat conservation projects. Eligible applicants include counties, cities, cities and counties, or districts as defined in Subdivision(b) of the Public Resources Code. Eligible projects include: deer and lion habitat, including oak woodlands; habitat for rare and endangered, threatened and fully protected species; wildlife corridors and urban trails; wetlands; aquatic habitat for spawning and rearing of anadromous salmonids and trout species; and riparian habitat. This is a 50/50 matching program. The match must come from a non-State source.

Non-Motorized Trails Grant Program - Eligible applicants include cities, counties, eligible districts, and eligible local agencies formed for park purposes, and federally recognized California Indian tribes. This competitive grant program funds the development, improvement, rehabilitation, restoration, and enhancement of non-motorized trails and associated interpretive facilities for the purpose of increasing public access to, and enjoyment of, public areas for increased recreational opportunities.

PRIVATE

1. **The Conservation Fund - American Greenways Grant Program**
   Provides grants in recognition of accomplishments in successful and creative approaches to developing California Greenways, particularly through overcoming obstacles and creative problem-solving. ($500 - $2,500)

2. **National Fish and Wildlife Foundation's Grants**
   A private non-profit established by Congress in 1984, the foundation fosters cooperative partnerships to conserve fish, wildlife, plants, and the habitats on which they depend. The Foundation works with its grantees and conservation partners to stimulate private, state, and local funding for conservation through challenge grants. Through a challenge grant, each dollar awarded by the Foundation must be matched with one non-federal dollar. Projects that benefit multiple species, achieve a variety of resource management objectives, and/or lead to revised management practices that reduce the causes of habitat degradation. A special emphasis is placed on larger projects that demonstrate a landscape-level approach and produce lasting, broad-based results on the ground. Numerous grants would apply to the Dry Creek Parkway including "Bring Back the Natives", "Native Plant Conservation Initiative", and habitat conservation plans focusing on migratory bird populations.

LOW COST SERVICES/MATERIALS

1. **U. S. Department of Agriculture, Soil Conservation Service, Resource Conservation District**
   Interest is in preserving site-specific plants. Will collect and propagate seeds if project approved by local Resource Conservation District.

2. **California Conservation Corps**
   Provides low cost services for brush clearance and trail building. Sponsor must provide materials, but Corps provides supervision and some tools, and crews often work alongside volunteers. Provides plant materials to any public agency at cost. Prefer 1 to 1-1/2 year lead time for preparation of plant materials. Planting projects do not have to have Corps workers.

3. **National Parks Service**
   Rivers and Trails Conservation Assistance Program - Under the National Center for Recreation and Conservation. The program provides technical assistance for corridor conservation plans, statewide assessments, conservation workshops, consultation and information exchange. Rivers & Trails staff work on the grassroots level with local citizens groups and state and local governments to revitalize nearby rivers, preserve valuable open space, and develop trail and greenway networks. All Rivers & Trails projects are locally led and managed, and begin with an invitation from local agencies and/or organizations to help.

4. **California Department of Forestry**
   Sells low-cost native trees. Must be purchased in quantities of 10, habitat and erosion control, but not for landscaping. Can also provide discounts if jurisdiction provides own seed. Ordering requires advance planning for availability during proper season.