Biological Resources Study Report for the Dry Creek Greenway Multi-use Trail Planning and Feasibility Study

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Acronyms and Abbreviations

BMP	2008 Bicycle Master Plan
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
City	City of Roseville's
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
dbh	diameter at breast height
DFG	California Department of Fish and Game
DPS	distinct population segment
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
ESU	evolutionarily significant unit
FMP	Pacific Coast Salmon Fishery Management Plan
FR	Federal Register
IS/MND	Initial Study/Mitigated Negative Declaration
MBTA	Migratory Bird Treaty Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act

NMFS	National Oceanic and Atmospheric Administration National Marine Fisheries Service
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
VELB	valley elderberry longhorn beetle

Section 1
Introduction

ICF Jones & Stokes was retained to identify potential biological resource issues to support the City of Roseville's (City) planning and feasibility study for the Dry Creek Greenway Multi-use Trail (Figure 1). The multi-use trail is planned for the south side of the city, beginning at the western city limits near the City's Corporation Yard and extending to the eastern city limits, south of Old Auburn Road. The current planning effort and the focus of this biological resources report is the portion of the proposed multi-use trail between Riverside Avenue and the city limits (just south of Old Auburn Road, as shown in Figure 1). This biological resources report focuses on the area between the southern end of Saugstad Park (near Darling Way) and just south of Old Auburn Road. This portion of the proposed multi-use trail study area extends through the Dry Creek, Cirby Creek, Linda Creek, and Strap Ravine corridors.

The biological resources report describes the methods used to identify potential biological resource issues and presents the results of the field effort and data review. A list of recommendations is also provided in this report to provide general guidance for developing trail alternatives. These recommendations are intended to minimize short-term and long-term impacts on biological resources that occur in the creek corridors. They also serve to minimize the cost of potential future mitigation associated with acquisition of state and federal permits.

The purpose of this report is to assist the City with future efforts to develop design alternatives for the multi-use trail that avoid and minimize effects on biological resources. The information presented in this report should be considered preliminary and used for planning purposes only. Additional comprehensive biological surveys will be required in the future to support compliance with the *2008 Bicycle Master Plan Initial Study/Mitigated Negative Declaration* (Foothill Associates 2008) and state and federal permits.

Summary of Findings and Recommendations

Based on a review of existing information and conditions observed during reconnaissance-level field surveys, a variety of biological resources were identified as having the potential to result in constraints on the multi-use trail placement. These resource constraints are related to the riparian, woodland, and

wetland habitats found within the undeveloped creek corridor. The biological resource issues are summarized below and discussed in more detail in Section 4 of this report.

Special-Status Species

The study area contains known occurrences or potential habitat for the following special-status species.

- Potential habitat for the valley elderberry longhorn beetle (VELB), a species listed as threatened under the federal Endangered Species Act (ESA). Several individual and clumps of elderberry shrubs (habitat for the VELB) were documented in the study area.
- Dry Creek contains known migratory and seasonal rearing habitat for Central Valley steelhead, a federally listed species. Cirby and Linda Creeks, and Strap Ravine potentially provide seasonal rearing habitat for juvenile steelhead, particularly in their lower reaches. Dry Creek is the only stream that has been designated as critical habitat for this species.
- The four creeks also potentially provide suitable habitat for fall-run Chinook salmon belonging to the Central Valley fall/late fall–run Chinook salmon evolutionarily significant unit (ESU). This anadromous fish is a federal species of concern and a commercially valuable species.
- Suitable nesting habitat for Swainson's hawk (a California Department of Fish and Game [DFG] state listed species) and nesting and foraging habitat for white-tailed kite (a California Endangered Species Act [CESA] "fully protected species") and special-status migratory birds and raptors.
- Mature trees provide potential roosting habitat for three species of bats, including western red bat, Yuma myotis, and pallid bat (all three species are federal species of concern).
- Suitable aquatic and upland habitat along the creek corridors for northwestern pond turtle, a DFG species of special concern.

As part of the future CEQA compliance phase and to comply with the 2008 Bicycle Master Plan (BMP) Initial Study/Mitigated Negative Declaration (IS/MND) (Foothill Associates 2008), the City will retain biologists to conduct additional, detailed biological surveys for these species. Potential impacts and mitigation measures would be described in the subsequent CEQA document to avoid and minimize impacts on special-status species.

Waters of the United States and Waters of the State

Dry, Cirby, and Linda Creeks and Strap Ravine and two unnamed tributary streams are considered waters of the United States and waters of the State and are therefore subject to state and federal regulation. In addition to these waters of the United States, adjacent seasonal and perennial wetlands are also subject to state

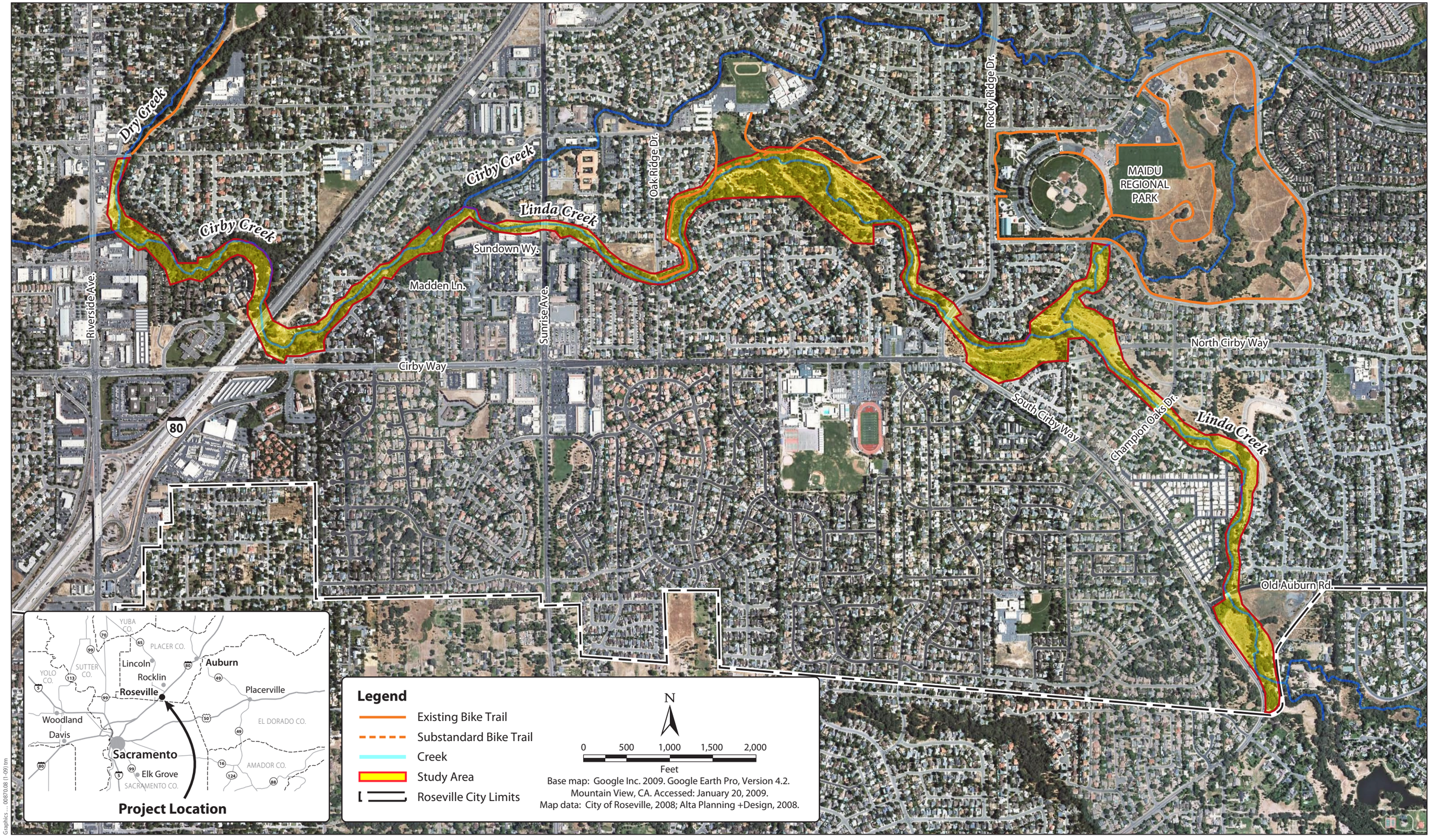

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Figure 1
Project Location

and federal regulation. A wetland delineation would be conducted in the future on the preferred trail alignment to document waters of the United States and support acquisition of state and federal permits.

Any work within the ordinary high water mark of these streams (e.g., placement of piers, bridges, or bank stabilization), unnamed tributary streams, or adjacent wetlands would require permits from a variety of agencies, including the U.S. Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS), Central Valley Regional Water Quality Control Board (RWQCB), and DFG. These agencies will identify conditions in their permits to avoid and minimize effects on the streams, wetlands, and associated biological resources.

Sensitive Natural Communities

In addition to the wetland communities, the study area supports sensitive natural communities, including mixed riparian forest, willow riparian scrub, and valley oak woodland. These communities are considered sensitive because they are limited in extent in the region and California; and they provide bank stabilization, shading over the creek channel, and habitat for creek corridor wildlife, including nesting habitat for migratory bird and raptor species. These sensitive natural communities occur throughout the creek corridors and complete avoidance may be difficult.

Native Oak Trees

The study area contains many native oak trees that are greater than 6 inches in diameter at breast height (dbh). Native oak trees are protected under the City's Tree Preservation Ordinance and are considered an important natural resource in the city. Large valley oak trees are a particularly unique biological and aesthetic resource and occur throughout the study area. To the extent possible, these large valley oak trees should be avoided during the trail design phase because they provide important habitat and aesthetic values.

Mitigation/Restoration Sites

Several mitigation/restoration sites occur within or adjacent to the study area. These sites include compensatory mitigation sites, floodplain restoration sites, and native oak tree mitigation fund planting sites (Exhibit 1 maps in Appendix A). Because these sites were established to offset biological effects from other projects, the sites may be subject to performance standards and other requirements.

Section 2
Terminology

Various terms relating to biological resources are used throughout this report. This section defines each of the major terms.

Special-Status Species

Special-status species are plants and animals that are legally protected under the federal ESA, the CESA, or other such regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. For the purposes of this report, special-status species include:

- Species listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.12 [listed plants]; 50 CFR 17.11 [listed animals]; various notices in the FR [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (FR 75176, December 10, 2008).
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) (CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Plants considered by California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B and 2, California Native Plant Society 2008).
- Plants listed by CNPS as plants about which more information is needed to determine their status, and plants of limited distribution (Lists 3 and 4, California Native Plant Society 2008), which may be included as special-status species on the basis of local significance or recent biological information.
- Animal species of special concern to DFG, as identified and defined in the California Natural Diversity Database (CNDDB) (California Department of Fish and Game 2009).

- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).

Waters of the United States

Waters of the United States is the term used by the USACE to define features under their jurisdiction under Section 404 of the Clean Water Act (CWA). Under the CWA, *Waters of the United States* are:

> (1) all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters…; (4) all impoundments of waters otherwise defined as waters of the United States under the definition; (5) tributaries of waters identified in paragraphs (a)(1)–(4) of this section; (6) the territorial seas; and (7) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)–(6) of this section" (33 CFR § 328.3).

In the study area, Dry, Cirby, and Linda Creeks, Strap Ravine, two unnamed tributary drainages, and the wetland and riparian habitat that occur below the ordinary high water mark of the creeks are considered waters of the United States. Seasonal and perennial wetland communities that are outside the creeks' ordinary high water marks, but are adjacent to the creeks, are considered jurisdictional features and regulated by the USACE under Section 404 of the CWA.

Waters of the State

Waters of the State are wetlands that may not be regulated by the USACE but may be regulated by state agencies, such as DFG and RWQCB. An example of a water of the State would be an isolated seasonal wetland that is not hydrologically or physically connected to a creek.

Wetlands

Wetlands (a subset of waters of the United States as described above) are defined for regulatory purposes in the Code of Federal Regulations (CFR) as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3, 40 CFR 230.3). To be considered subject to federal jurisdiction, a wetland

must normally exhibit positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology (Environmental Laboratory 1987). As stated previously, seasonal and perennial wetland communities occur in the study area.

Sensitive Natural Communities

Sensitive natural communities are communities that are especially diverse; regionally uncommon; or of special concern to local, state, and federal agencies. Elimination or substantial degradation of these communities would constitute a significant impact under CEQA. Sensitive natural communities in the study area include perennial and seasonal wetlands, mixed riparian forest, willow riparian scrub, and valley oak woodland.

Critical Habitat

In the study area, critical habitat for Central Valley steelhead has been designated in Dry Creek. NMFS determined that Dry Creek contains critical habitat for steelhead based on the presence of physical and biological factors that are essential to the conservation of that species (70 FR 52521).

Critical habitat is defined in Section 3 of ESA as:

> (I) the specific area within the geographic area occupied by a species, at the time it is listed in accordance with ESA, on which are found those biological features (i) essential to the conservation of the species, and (ii) that may require special management considerations or protection; and (II) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Critical habitat was designated for Central Valley steelhead by NMFS (65 Federal Register [FR] 7764, February 16, 2000). However, following a lawsuit (*National Association of Home Builders et al.* v. *Donald L. Evans, Secretary of Commerce, et al.*), NMFS rescinded the listing and reevaluated how to classify critical habitat for several evolutionary significant units (ESUs) of steelhead. Subsequently, critical habitat was designated for Central Valley steelhead by NMFS on September 2, 2005 (70 FR 52488-52627); the final rule became effective on January 2, 2006.

Essential Fish Habitat

Central Valley fall-run Chinook salmon are subject to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and regulated by the Pacific Coast Salmon Fishery Management Plan (FMP). The FMP includes designation of EFH and requires consultation with NMFS if a project or action potentially

would affect EFH. EFH applies to Pacific salmon and other commercial fish species and is defined as the aquatic habitat necessary for spawning, breeding, feeding, or growth to maturity (National Marine Fisheries Service 1998) and allow a level of production needed to support a long-term, sustainable commercial fishery and contribute to a healthy ecosystem. Important components of EFH are substrate; water quality; water quantity, depth, and velocity; channel gradient and stability; food; cover and habitat complexity; space; access and passage; and habitat connectivity.

The Dry Creek watershed is within EFH for Central Valley fall-run Chinook salmon. Consultation with NMFS is required for potential effects on Chinook salmon because of their commercial value. (EFH does not apply to Central Valley steelhead; EFH applies only to commercial species [e.g., Chinook salmon]).

Section 3
Methods

The methods used to identify biological resources in the study area entailed a prefield investigation and reconnaissance-level field surveys. The Exhibit 1 maps in Appendix A show the limits of the biological resources study area, as defined by the City.

Prefield Investigation

A prefield investigation was conducted to review existing information and to prepare lists of special-status plant and wildlife species known to occur or with potential to occur in the project region. The following sources of existing information were reviewed to develop lists of special-status species that could occur in the region.

- DFG's California Natural Diversity Database (CNDDB) records search of the Roseville, Rocklin, Citrus Heights, and Lincoln 7.5-minute U.S. Geological Survey (USGS) quadrangles (2009).
- The California Native Plant Society's (CNPS's) 2008 online *Inventory of Rare and Endangered Plants of California*.
- USFWS and NMFS lists of sensitive species for Placer County.
- Placer Legacy biological data: Placer County Phase I Habitat Conservation Plan/Natural Community Conservation Plan Draft Species Accounts (Placer Legacy 2003) [available online at www.placer.ca.gov/planning/legacy/phase-1-hcp-nccp-species-list.htm].
- Dry Creek Conservancy website fish count data.
- *Dry Creek Watershed Coordinated Resource Management Plan, Placer and Sacramento Counties, California* (Dry Creek Conservancy et al. 2003).
- *2008 Bicycle Master Plan Initial Study/Mitigated Negative Declaration* (Foothill Associates 2008). The MND was adopted by the City on June 4, 2008.
- *Roseville Creek and Riparian Management and Restoration Plan* (2005).

Reconnaissance-Level Field Surveys

After reviewing existing information, the ICF Jones & Stokes biological team walked areas that were accessible in the study area on November 20 and 25, 2008. Areas that were not accessible at the time of the late fall surveys include steep slopes, densely vegetated areas, and areas that were not accessible because of private property fences and the creek. During the reconnaissance-level field surveys, the biological team gathered baseline information on existing conditions and mapped sensitive resource areas on 1"=200' aerial photographs (provided in Exhibit 1, Appendix A). The study area was defined by the City and subsequently divided into four segments based on major road crossings, as shown in the Exhibit 1 maps (Appendix A).

During the reconnaissance field surveys, the biological team conducted the following activities:

- Characterized biological communities and their associated wildlife habitat uses.
- Conducted a general evaluation of fish habitat in the portions of Dry, Cirby, and Linda Creeks and Strap Ravine that occur within the study area.
- Determined if special-status plant and wildlife species or their habitats could occur in the study area.
- Determined if there are any unique biological features that should be avoided or incorporated into the trail design (e.g., mitigation/restoration sites).
- Identified general areas that may qualify as waters of the United States or waters of the State.

Section 4
Results and Recommendations

Overview of Existing Conditions

The study area is located in western Placer County, a semi-urbanized region that has retained large, contiguous areas of designated open space. These open space areas support terrestrial and aquatic species and sensitive natural communities. Within more urbanized areas of the city, designated open space is generally limited to creek corridors. Within the study area, habitat quality ranges from disturbed, low quality to high quality habitat. Although the habitat value of this urban creek corridor that occurs in the study area may be diminished because of adjacent and surrounding development, the creek corridor does provide year-round and seasonal migratory habitat for a variety of fish and wildlife species. The creek corridor provides important local habitat value (foraging, nesting, and cover) for a variety of species that can tolerate human and domestic animal presence.

Biological Communities

The study area supports both important and common biological communities. Important biological communities are habitats considered sensitive because of high species diversity, high productivity, unusual characteristics, limited distribution, declining status, or a combination of these attributes. Local, state, and federal agencies consider such habitats important. The USFWS considers certain habitats, such as wetlands and riparian communities, important to wildlife. The USACE and the Environmental Protection Agency (EPA) consider wetland habitats important for water quality and wildlife. The biological communities in the study area that meet the criteria for important natural communities are valley oak woodland, mixed riparian forest, willow riparian scrub, and seasonal and perennial wetlands.

Common biological communities are habitats that have low species diversity, are widespread, reestablish naturally following disturbance, or support primarily nonnative species. These communities are generally not protected by environmental regulation unless the specific site is habitat for or supports sensitive species (e.g., raptor foraging or nesting habitat, upland habitat in a

wetland watershed). The only common biological community in the study area is annual grassland.

Dominant species that were observed or typically occur in each of the biological communities are described below. The general location and extent of these biological communities is shown in the Exhibit 1 maps (Appendix A).

Annual Grassland

Annual grassland occurs in open, cleared or disturbed areas in the study area and forms the understory of the mixed riparian forest and valley oak woodland communities. This community is dominated by naturalized grasses with intermixed perennial and annual forbs. Dominant grasses observed included soft chess, ripgut brome, and Bermuda grass. Several nonnative forbs were also common, including goose-grass, clover, black mustard, Italian thistle, periwinkle, and cut-leaved geranium.

Wildlife species commonly associated with annual grasslands in the study region include western kingbird, white-crowned sparrow, deer mouse, western harvest mouse, California ground squirrel, Botta's pocket gopher, black-tailed hare, western fence lizard, California kingsnake, and gopher snake. In addition, annual grassland provides foraging habitat for predatory birds that nest in the adjacent woodlands such as red-tailed hawk, red-shouldered hawk, white-tailed kite, and American kestrel.

Wildlife species observed in nonnative grasslands during field surveys include white-crowned sparrow, western kingbird, western meadowlark, yellow-billed magpie, killdeer, gopher snake, and California ground squirrel; these species may be more likely to use the larger and more open annual grasslands in the study area. Wider-ranging animals, such as turkey vulture, red-tailed hawk, and coyote, are common in the area.

The annual grassland is a common natural community and does not provide a constraint to developing trail alternatives.

Riparian Communities

The primary riparian communities that occur in the study area include mixed riparian forest and willow riparian. Each of these community types are described below.

Mixed Riparian Forest

Mixed riparian forest occurs along the upper creek banks and extends into the floodplain. In the study area, the riparian forest contains a mix of native trees

and shrubs (valley oak, alder, sycamore, Oregon ash, willows) and horticultural and invasive species (catalpa, privet, oleander, Himalayan blackberry, and periwinkle). The understory varies depending on the location of the mixed riparian forest (creek bank or floodplain). Along the creek banks, the understory is a mix of Himalayan blackberry, sedges, grasses, and wetland forbs, including cattail, umbrella sedge, willow herb, wild rye, and scattered willow seedlings. In floodplain areas, the forest understory is dominated by annual grassland and horticultural and native shrub and tree species.

The mixed riparian forest provides nesting habitat for several bird species and foraging and refuge habitat for amphibians, reptiles, and mammals occupying the open water and adjacent grassland habitats. Birds such as herons and belted kingfishers forage in the creek, primarily along the water's edge. Many species of insectivorous birds, such as white-throated swift, barn swallow, cliff swallow, and black phoebe, catch their prey over open water.

Despite the developed character of the area, the mixed riparian forest in the study area provides an important wildlife resource because it is part of a contiguous creek corridor. Riparian trees and shrubs in the study area provide nesting opportunities for numerous bird species that forage in the multilayered vegetation of the riparian forest and in adjacent nonnative annual grassland and open water habitat. Birds observed in riparian forest in the study area during the field survey included black phoebe, red-tailed hawk, red-shouldered hawk, American robin, and acorn woodpecker.

The riparian forest community is considered a sensitive natural community by DFG. Riparian vegetation filters pollutants in runoff; supports bank stability; and provides shade, cover, and food sources for aquatic organisms; and habitat and food for non-aquatic species.

Willow Riparian

In the study area, the willow riparian community is dominated by tree and shrub willow species, including arroyo, sandbar, red, and black willows. This community occurs immediately along the creek channel and is found along Linda Creek.

This community is also considered a sensitive natural community and provides similar habitat values for wildlife as described above for mixed riparian forest.

Valley Oak Woodland

Valley oak woodland is the dominant habitat type in the study area and occurs within the creek floodplains. The woodland is dominated by valley oaks with interspersed live oaks, blue oaks, and horticultural tree species. The understory is dominated by annual grassland (described above). The shrub layer contains coyote bush and oak saplings. The herbaceous understory is made up of a

combination of the nonnative annual grassland species (described above), hedge parsley, chickweed, and miner's lettuce.

Oak woodlands provide high value to wildlife in the form of nesting sites, cover, and food. Valley oak woodlands in the study area provide suitable nesting sites for raptors, such as red-tailed hawk, red-shouldered hawk, and great horned owl that can tolerate disturbances from adjacent roadways and development. Common wildlife species that occur in the oak woodland include acorn woodpecker, western scrub-jay, yellow-billed magpie, American robin, California quail, western gray squirrel, and black-tailed hare.

In the study area, valley oak woodlands are composed of many large, mature trees as well as seedlings and saplings. The woodland is considered a sensitive natural community because it provides important habitat functions for resident and migratory wildlife; shade and cover for a variety of species; and aesthetic values for the public.

Streams

The study area supports four perennial streams (Dry, Linda, and Cirby Creeks and Strap Ravine) and two unnamed seasonal, tributary streams. The vegetation along the stream banks, bottoms, and adjacent floodplains varies throughout the study area and depends on local hydrologic and soil conditions.

Vegetation along the edges of the creek channel provides nesting habitat for several bird species and foraging and refuge habitat for amphibians, reptiles, and mammals occupying the open water and adjacent grassland and oak woodland habitats. Birds such as herons and belted kingfishers are known to forage along the water's edge. Many species of insectivorous birds, including white-throated swift, barn swallow, cliff swallow, black phoebe, and ash-throated flycatcher, catch their prey over open water.

Native and introduced fish species reported from the general area include Sacramento sucker, Sacramento pikeminnow (formerly Sacramento squawfish), rainbow trout, hitch, California roach, green sunfish, bluegill, brown bullhead, western mosquitofish, golden shiner, and carp.

Central Valley fall-run Chinook salmon, belonging to the Central Valley fall/late fall–run Chinook salmon ESU, have been previously documented in all three creeks and may also occur in the lower portions of Strap Ravine. The creeks provide migration, spawning, and rearing habitat for adult and juvenile Chinook salmon. Chinook salmon adults, carcasses, and redds have been observed in Cirby and Linda Creeks in the recent past (Dry Creek Conservancy carcass survey data—website data). Central Valley steelhead is also known to occur in Dry Creek and its tributaries; however, spawning and summer rearing habitat are likely only present in Miners and Secret Ravines. Juvenile rearing habitat in Dry, Cirby and Linda Creeks, and Strap Ravine is constrained by excessive water temperature during summer. Unlike Chinook salmon, juvenile steelhead rear for

one or more years in freshwater before migrating to the ocean; consequently, suitable water temperatures and rearing habitat conditions are necessary year-round. In contrast, juvenile Chinook salmon emigrate during the late winter and spring shortly after emerging from the gravel and are therefore unaffected by summer conditions.

Wetland Communities

Two general types of wetland communities occur in the study area and include perennial emergent wetlands and seasonal wetlands. Each of these general types of wetlands is described below. As part of the future wetland delineation that will be conducted to support permitting efforts for the selected trail alignment, these wetland communities will be mapped and characterized.

Perennial Emergent Wetlands

Perennial emergent wetlands occur along the stream banks and adjacent low-lying areas in the study area. This type of wetland is generally dominated by perennial emergent wetland species (species that grow in wetland conditions more than 99% of the time), which often form a closed canopy and grow in areas that are permanently or seasonally flooded by slow-moving or stagnant fresh water. Emergent wetlands derive water from association with perennial or near-perennial surface water sources, such as overland flow from creeks or other surface water sources; ponded seasonal precipitation; and shallow groundwater tables. These wetlands may be entirely vegetated or partially vegetated with an open water component, or may be dry in summer.

Emergent wetlands are typically dominated by hydrophytic grasses and grass-like species. Dominant herbaceous hydrophytic vegetation includes bulrush, broad-leaved cattail, curly dock, Baltic rush, smartweed, Bermuda grass, and irrigated pasture grasses. Some emergent wetlands in the study area also contain willows.

Freshwater emergent wetlands are among the most productive wildlife habitats in California and provide food, cover, and water for a variety of species of birds, and numerous mammals, reptiles, and amphibians occupying the open water and adjacent grassland habitats. Vegetation growing along the edges of water bodies also provides nesting habitat for several bird species.

Seasonal Wetlands

In the study area, seasonal wetlands typically occur in swale or concave topography. This type of wetland is generally dominated by annual facultative wetland species (species that grow in wetland conditions 67 to 99 percent of the time) that often form a closed to open canopy and grow in depressional areas that are seasonally flooded by rainwater. In the study area, seasonal wetlands occur

adjacent to perennial wetlands and are dominated by various mixes of curly dock, Italian ryegrass, Baltic rush, smartweed, western vervain, Bermuda grass, Johnson grass, and irrigated pasture grasses.

Seasonal wetlands in grassland areas provide foraging and breeding habitat for a variety of wildlife species. Deep seasonal pools provide habitat for amphibians, including western toad and Pacific tree frog. They also provide a valuable food source for amphibians as well the many birds that overwinter in or migrate through the region. Birds such as killdeer and mallards use seasonal wetlands for nesting and foraging in both winter and spring.

As described previously, wetlands are considered sensitive natural communities and are regulated by various state and federal laws and regulations.

Special-Status Species

Plants

Ten special-status plants were identified during the prefield investigation as potentially occurring in the project region (Table 1), but suitable habitat for these species was not located in the study area during field surveys, and no special-status plants have been previously documented in the immediate project vicinity (Figure 2). Most of these species have specific microhabitat requirements that are not present in the project area (e.g., vernal pools and serpentine soils). Overall, there is a relatively low potential for special-status plants to occur in the study area and therefore these species are not a constraint to developing trail alternatives.

Wildlife

Based on a review of existing information and site conditions observed during the November 2008 field surveys, seventeen wildlife species were identified as having the potential to occur in the study area (Table 2). According to the CNDDB (2009) records search, no special-status wildlife has been previously recorded in the study area (Figure 3). Although no special-status wildlife have been recorded by the CNDDB in the study area, suitable habitat does occur for a variety of species (Table 2).

The special-status wildlife species that has the highest constraint on trail alternatives is the federally listed VELB. Potential habitat (elderberry shrubs) for this species was identified in several areas in the study area (see Exhibit 1 maps in Appendix A). The trail alternatives should, to the extent possible, avoid direct and indirect impacts on the potential habitat for this species in order to minimize the potentially high cost of compensatory mitigation.

Table 1. Special-Status Plants Identified during the Prefield Investigation as Potentially Occurring in the Project Region

Species	Listing Status*			Distribution	Habitat Associations	Period of Identification	Potential to Occur in the Study Area
	Federal	State	CNPS				
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	–	E	1B.2	Fresno, Merced, Sacramento, Placer, Lake, and Shasta Counties and Oregon	Vernal pools and margins of seasonally receding ponds and lakes	April–June	None
California balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*)	–	–	1B.2	Alameda, Butte, Mariposa, Napa, Placer, Santa Clara, Sonoma, and Tehama Counties	Cismontane woodland, valley and foothill grasslands	March–June	Low
Brandegee's clarkia (*Clarkia biloba* ssp. *randegeeae*)	–	–	1B.2	Northern Sierra Nevada foothills	Foothill woodland	May–July	None
Dwarf downingia (*Downingia pusilla*)	–	–	2.2	Central Valley from Stanislaus County to Butte County	Vernal pools and swales	April–May	None
Hispid bird's-beak (*Cordylanthus mollis* ssp. *hispidus*)	–	–	1B.1	Widespread but spotty in Sacramento and San Joaquin Valleys and Coastal Ranges	Alkaline or saline flats in alkali meadow, iodine bush scrub, and alkali grassland	June–July	None
Ahart's rush (*Juncus leiospermus* var. *ahartii*)	C	–	1B.2	Southern Butte County and Sacramento County	Vernal pools	April–May	None
Red Bluff rush (*Juncus leiospermus* var. *leiospermus*)	–	–	1B.1	Central Valley from Red Bluff (Tehama County) south to Merced County	Vernal pools, ephemeral drainages, and seasonal seeps in grassland, oak woodland, and chaparral	April–May	None
Legenere (*Legenere limosa*)	–	–	1B.1	Primarily located in the lower Sacramento Valley in Lake and Solano Counties, in the San Joaquin Valley in Stanislaus County, and in San Mateo County in the Santa Cruz Mountains	Seasonally saturated habitat, such as vernal pools, swales, drainages, marsh edges, and riverbanks	May–September	None
Pincushion navarretia (*Navarretia myersii*)	–	–	1B.1	Central Valley	Edges of vernal pools	March–May	None
Sanford's arrowhead (*Sagittaria sanfordii*)	–	–	1B.2	Widespread but infrequent; reported from Del Norte, Fresno, Sacramento, Santa Barbara, and Ventura Counties	Sloughs and sluggish streams with silty or muddy substrate, associated with emergent marsh vegetation	May–June	Low

Species	Listing Status*			Distribution	Habitat Associations	Period of Identification	Potential to Occur in the Study Area
	Federal	State	CNPS				

* Status explanations:

Federal:

E = Listed as endangered under the federal Endangered Species Act.

T = Listed as threatened under the federal Endangered Species Act.

C = Species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

— = No listing status.

State:

E = Listed as endangered under the California Endangered Species Act.

R = Listed as rare under the California Endangered Species Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.

— = No listing status.

California Native Plant Society:

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.

2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.

Threat Code Extentions:

.1 = seriously endangered in California (over 80% of occurrences threatened-high degree and immediacy of threat).

.2 = fairly endangered in California (20-80% occurrences threatened).

Common Name and Scientific Name	Status [a]		California Distribution	Habitats	Potential for Occurrence in the Study Area
	Federal	State			
Vernal pool fairy shrimp (*Branchinecta lynchi*)	T	–	Found in Central Valley, central and south Coastal Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County	Vernal pools; also sandstone rock outcrop pools	Low – no suitable vernal pool habitat is present.
Venal pool tadpole shrimp (*Lepidurus packardi*)	E	–	Found in Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	Low – no suitable vernal pool habitat is present.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	T	–	Found in streamside habitats below 900 meters (3,000 feet) above sea level through the Central Valley of California	Riparian and oak savanna habitats with elderberry shrubs; elderberries are host plant	High - several elderberry shrubs were identified in the study area.
Western spadefoot (*Scaphiopus hammondii*)	–	SSC	Found in Sierra Nevada foothills, Central Valley, Coastal Ranges, coastal counties in southern California	Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands	Low – some of the streams in the study area support suitable, off-channel habitat; however, this species has not been documented near the study area (CNDDB 2009).
California red-legged frog (*Rana aurora draytoni*)	T	SSC	Found along the coast and coastal mountain ranges of California from Humboldt County to San Diego County; Sierra Nevada (mid elevations [generally above 300 meters (1,000 feet) above sea level] from Butte County to Fresno County)	Permanent and semipermanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation and riparian species along the edges; may estivate in rodent burrows or cracks during dry periods	Low – potential habitat is present in the study area but no occurrences have been documented in the region (CNDDB 2009).
Northwestern pond turtle (*Clemmys marmorata marmorata*)	–	SSC	In California, range extends from Oregon border of Del Norte and Siskiyou Counties south along coast to San Francisco Bay, inland through Sacramento Valley, and on the western slope of the Sierra Nevada; range overlaps with that of southwestern pond turtle through the Delta and Central Valley to Tulare County	Woodlands, grasslands, and open forests; occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation	High – suitable aquatic habitat occurs within the four creeks that occur in the study area; adjacent annual grasslands provide potential nesting sites.

Common Name and Scientific Name	Status [a]		California Distribution	Habitats	Potential for Occurrence in the Study Area
	Federal	State			
White-tailed kite (*Elanus leucurus*)	–	FP	Found in lowland areas west of Sierra Nevada from the head of Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Moderate to High – suitable nesting (riparian woodlands) and foraging habitat (annual grassland) occurs in the study area. One occurrence has been documented southeast of the study area (see Figure 3).
Northern harrier (*Circus cyaneus*)	–	SSC	Found throughout lowland California; has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands providing tall cover	Low to Moderate – larger areas of grasslands provide suitable nesting or foraging habitat in the study area. However, this species has not been recorded in the project region (CNDDB 2009).
Sharp-shinned hawk (*Accipiter striatus*)	–	SSC	Permanent resident on the Sierra Nevada and Cascade, Klamath, and north Coastal Ranges at mid elevations, and along the coast in Marin, San Francisco, San Mateo, Santa Cruz, and Monterey Counties; winters over the rest of the state except very high elevations	Dense canopy ponderosa pine or mixed-conifer forest and riparian habitats	Low to Moderate – possible winter or migratory visitor in the study area.
Swainson's hawk (*Buteo swainsoni*)	–	T	Found in the lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; the state's highest nesting densities occur near Davis and Woodland, in Yolo County	Nests in oaks, cottonwoods, and other native and nonnative trees in riparian habitats, roadside trees, and lone trees; forages in grasslands, irrigated pastures, and grain fields	Moderate – eight active nest sites were detected by DFG in western Placer County in 2001; suitable nesting (woodlands) and foraging habitat (grasslands) occur in the study area, but there are no known nest sites within or near the study area (CNDDB 2009).
Western burrowing owl (*Athene cunicularia hypugea*)	–	SSC	Found in lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Rodent burrows in sparse grassland, desert, and agricultural habitats	Low – few nesting records are known from Placer County and occur in West Roseville and Lincoln (CNDDB 2009, Placer Legacy 2003).

Common Name and Scientific Name	Status [a]		California Distribution	Habitats	Potential for Occurrence in the Study Area
	Federal	State			
California yellow warbler (*Dendroica petechia brewsteri*)	–	SSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes in the Sierra Nevada; winters along the Colorado River and in parts of Imperial and Riverside Counties; two small permanent populations in San Diego and Santa Barbara Counties	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; may also use oaks, conifers, and urban areas near stream courses	Low to Moderate – this species could migrate through the study area. The riparian community in the study area provide marginal potential nesting habitat for the species.
Yellow-breasted chat (*Icteria virens*)	–	SSC	Uncommon migrant in California; nests in a few locations with appropriate habitat, such as Sweetwater and Weber Creeks, El Dorado County; Pit River, Shasta County; Russian River, Sonoma County; Little Lake Valley, Mendocino County; and upper Putah Creek, Yolo County	Nests in dense riparian habitats dominated by willows, alders, Oregon ash, tall weeds, blackberry vines, and grapevines	Low to Moderate – this species could migrate through the study area. The riparian community in the study area provide marginal potential nesting habitat for this species.
Tricolored blackbird (*Agelaius tricolor*)	–	SSC	Largely endemic to California; permanent residents in the Central Valley from Butte County to Kern County and at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; nesting habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony; requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant	Low to Moderate - potential nesting or foraging habitat is present in the study area.
Pallid bat *Antrozous pallidus*	–	SSC	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts	Moderate – suitable tree roosting and foraging habitat occurs in the study area.

Common Name and Scientific Name	Status [a] Federal	State	California Distribution	Habitats	Potential for Occurrence in the Study Area
Yuma myotis *Myotis yumanensis*	–	CSC	Found throughout California from low elevation up to 5000 feet in southern and central California, lower elevations in northern California	Roosts colonially in a variety of natural and human-made sites, including caves, mines, buildings, bridges, and trees; in northern California, maternity colonies are usually in fire-scarred redwoods, pines, or oaks; forages for insects over water bodies	Moderate – suitable tree roosting and foraging habitat occurs in the study area.
Western red bat *Lasirus blossevillii*	–	CSC	Found throughout California from low elevation up to 4000 feet	Occurs in forested and riparian habitats. This species roosts almost exclusively in trees and is not colonial.	Moderate – suitable tree roosting and foraging habitat occurs in the study area.

a Status definitions:

Federal:

E = listed as endangered under the federal Endangered Species Act.

T = listed as threatened under the federal Endangered Species Act.

C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

— = no listing status.

State:

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

FP = fully protected under the California Fish and Game Code.

SSC = species of special concern in California.

CSC = Present on Draft Revised List of Species of Special Concern Published by DFG.

— = no listing status.

10-mile Buffer

Project Area

Legend

- big-scale balsamroot
- Boggs Lake hedge-hyssop
- Brandegee's clarkia
- dwarf downingia
- hispid bird's-beak
- legenere
- pincushion navarretia
- Red Bluff dwarf rush
- Sacramento orcutt grass
- Sanford's arrowhead
- stinkbells

N

Miles

0 2.5 5

Data Source: CNDDB, November 2008
Base Map: USGS 30'x60' series quadrangles

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Figure 2
Special-Status Plant Species Recorded in the Study Region

10-mile Buffer

Project Area

Legend

- burrowing owl
- California linderiella
- California red-legged frog
- grasshopper sparrow
- great blue heron
- great egret
- northwestern pond turtle
- pallid bat
- purple martin
- silver-haired bat
- Swainson's hawk
- tricolored blackbird
- valley elderberry longhorn beetle
- vernal pool fairy shrimp
- vernal pool tadpole shrimp
- western spadefoot
- white-tailed kite

N

Miles

0 2.5 5

Data Source: CNDDB, November 2008
Base Map: USGS 30'x60' series quadrangles

S:\GIS\PROJECTS\ALTA\00870.08\MAPDOC\FIG3_CNDDB_WILDLIFE.MXD LD (02-02-09)

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Figure 3
Special-Status Wildlife Species Recorded in the Study Region

Fish

As described previously, two special-status fish species (Central Valley steelhead and fall-run Chinook salmon) have been document or have the potential to occur in streams in the Dry Creek watershed. Dry Creek was designated by NMFS as critical habitat for the California Central Valley distinct population segment (DPS) of steelhead, a federally listed threatened species. Critical habitat was designated on September 2, 2005 (70 FR 52488); the final rule became effective on January 2, 2006. Linda Creek, Cirby Creek, and Strap Ravine have not been designated as critical habitat for steelhead.

The Chinook salmon that occur in the creeks are part of the Central Valley fall/late fall–run Chinook salmon ESU. The Central Valley fall/late fall–run Chinook salmon ESU is a NMFS species of concern and is a commercially valuable species and therefore, is subject to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and regulated by the Pacific Coast Salmon Fishery Management Plan (FMP).

To the extent possible, direct and indirect impacts on the creeks and associated riparian habitat that shade the creeks should be minimized or avoided. As part of the future permitting process, NMFS would likely require measures be implemented to avoid and minimize effects on migratory, rearing, and spawning habitat.

Other Protected Species

A variety of non-special-status migratory birds and raptors have the potential to nest in the study area. Although these species are not considered special-status wildlife species, their occupied nests and eggs are protected by CFGC Sections 3503 and 3503.5 and the MBTA (50 CFR 10 and 21). These species are not considered high constraints to developing trail alternatives.

Noxious Weeds

Noxious weeds include species designated as federal noxious weeds by the U.S. Department of Agriculture, species listed by the California Department of Food and Agriculture, and other exotic pest plants designated by California Invasive Plant Council. Roads, highways, and related construction projects are some of the principal dispersal pathways for noxious weeds. The introduction and spread of exotic pest plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. Noxious weed occurrences observed during the field visits are shown in the Exhibit 1 maps (Appendix A).

The noxious weed occurrences are not constraints to trail develop but do provide future restoration opportunities. The *Roseville Creek and Riparian Management*

and Restoration Plan (2005) identifies three potential restoration sites in the study area. A potential future mitigation measure for impacts on the riparian communities may involve the removal of the noxious weed infestations and replacement planting with native riparian species in the study area.

Recommendations

As described in this report, the study area is dominated by a variety of sensitive biological resources because of its location within a creek corridor. Avoidance and minimization of impacts on sensitive biological resources will be difficult, but feasible, if certain general design guidelines are taken into consideration during the alternatives development phase. To avoid long-term impacts on sensitive biological resources and potential high compensatory mitigation costs, the following general guidelines should be factored into the alternatives development:

- Minimize the number of bridges and creek crossings to avoid removal of streamside riparian habitat and placement of fill material into the creek bank and channel.
- Locate the multi-use trail and creek crossings in areas that minimize long-term erosion and sedimentation in the creeks.
- Maintain appropriate setbacks from creek banks and associated streamside riparian habitat.
- Avoid large, heritage-size valley oak trees that provide high biological and aesthetic value.
- Avoid elderberry shrubs and associated habitat for the federally listed VELB.
- Minimize riparian vegetation removal, particularly native shrubs and trees immediately along the creek bank. These species provide high quality shade and cover for wildlife and fish species.
- Maximize opportunities for environmental interpretation.
- Limit trail construction to DFG's and NMFS' prescribed work windows to minimize impacts on sensitive wildlife and fish species.

Section 5
Literature Reviewed

California Department of Fish and Game. 1994. *Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (*Buteo swainsoni*) in the Central Valley of California*. November 1. Sacramento, CA

California Native Plant Society. 2008. Inventory of Rare and Endangered Plants of California. 7th edition (v7-07a). Last revised: January 17, 2007. Available: <http://www.cnps.org/inventory>. Accessed: October 2008.

California Natural Diversity Database. 2009. RareFind 3, Version 3.0.3. Records search of the Roseville, Rocklin, Citrus Heights, and Lincoln 7.5-Minute Quadrangles. Sacramento, CA: California Department of Fish and Game.

Dry Creek Conservancy, Harding Lawson Associates, Swanson Hydrology & Geomorphology, and ECORP Consulting, Inc. 2003. *Dry Creek Watershed Coordinated Resource Management Plan, Placer and Sacramento Counties, California.* Placer County, CA.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experiment Station.

Foothill Associates. *2008 Bicycle Master Plan Initial Study/Mitigated Negative Declaration*. Rocklin, CA.

Jennings, M. R., M. P. Hayes, and D. C. Holland. 1992. *A Petition to the U.S. Fish and Wildlife Service to Place the California red-legged frog (*Rana aurora draytonii*) and the Western Pond Turtle (*Clemmys marmorata*) on the List of Endangered and Threatened Wildlife and Plants.*

Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Rancho Cordova, CA: California Department of Fish and Game, Inland Fisheries Division.

National Marine Fisheries Service. 1998. A primer for federal agencies—essential fish habitat: new marine fish habitat conservation mandate for federal agencies.

Remsen, J. V. 1978. *Bird Species of Special Concern in California: An Annotated List of Declining or Vulnerable Bird Species.* (Wildlife Management Branch Administrative Report No. 78-1.) Sacramento, CA: California Department of Fish and Game, Nongame Wildlife Investigations.

Rogers, J. H. 1980. *Soil Survey of Placer County, California, Western Part.* Washington, DC: U.S. Soil Conservation Service and Regents of the University of California (Agricultural Experiment Station).

Stebbins, R. C. 1985. *A Field Guide to Western Reptiles and Amphibians.* Boston, MA: Houghton-Mifflin Company.

Williams, D. F. 1986. *Mammalian Species of Special Concern in California.* (Wildlife Management Division Administrative Report 86-1.) Sacramento, CA: California Department of Fish and Game, Wildlife Management Division.

Section 6
List of Preparers

The following individuals assisted with the preparation of this report:

- Karen Leone—Project Director
- Jennifer Stock—Project Manager
- Susan Bushnell—Plant Ecologist
- Steve Avery—Wildlife Biologist
- Jeff Kozlowski—Fisheries Biologist
- Lily Douglas—GIS Specialist
- Ryan Patterson—Publications Specialist

Appendix A

Exhibit 1—Biological Resources Maps

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Exhibit 1 - Sheet 1

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources

Legend

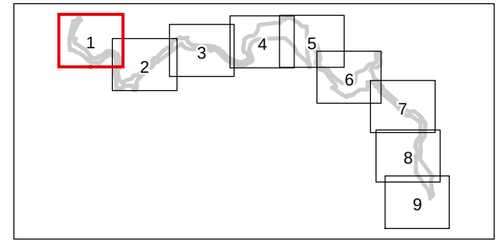
- Study Area
- Creek
- Existing Trail
- Mitigation/ Restoration Sites
- Elderberry Shrub*
- Invasive Species

Biological Communities

- Annual Grassland
- Willow Riparian
- Mixed Riparian Forest
- Wetland
- Valley Oak Woodland

Abbreviation	Scientific Name	Common Name
AIAL	*Ailanthus altissima*	Tree-of-Heaven
ARDO	*Arundo donax*	Giant Reed
CABI	*Catalpa bignonioides*	Southern Catalpa
COSE	*Cortaderia selloana*	Pampas Grass
FICA	*Ficus carica*	Edible Fig

* habitat for valley elderberry longhorn beetle (VELB), a federally listed species



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Aerial Photo Source: Aerials Express, 2007

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Exhibit 1 - Sheet 2

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources

Legend

- Study Area
- Creek
- Existing Trail
- Mitigation/ Restoration Sites
- Elderberry Shrub*
- Invasive Species

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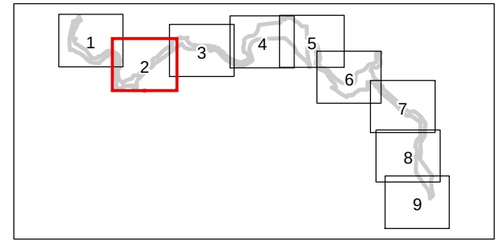

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Aerial Photo Source: Aerials Express, 2007

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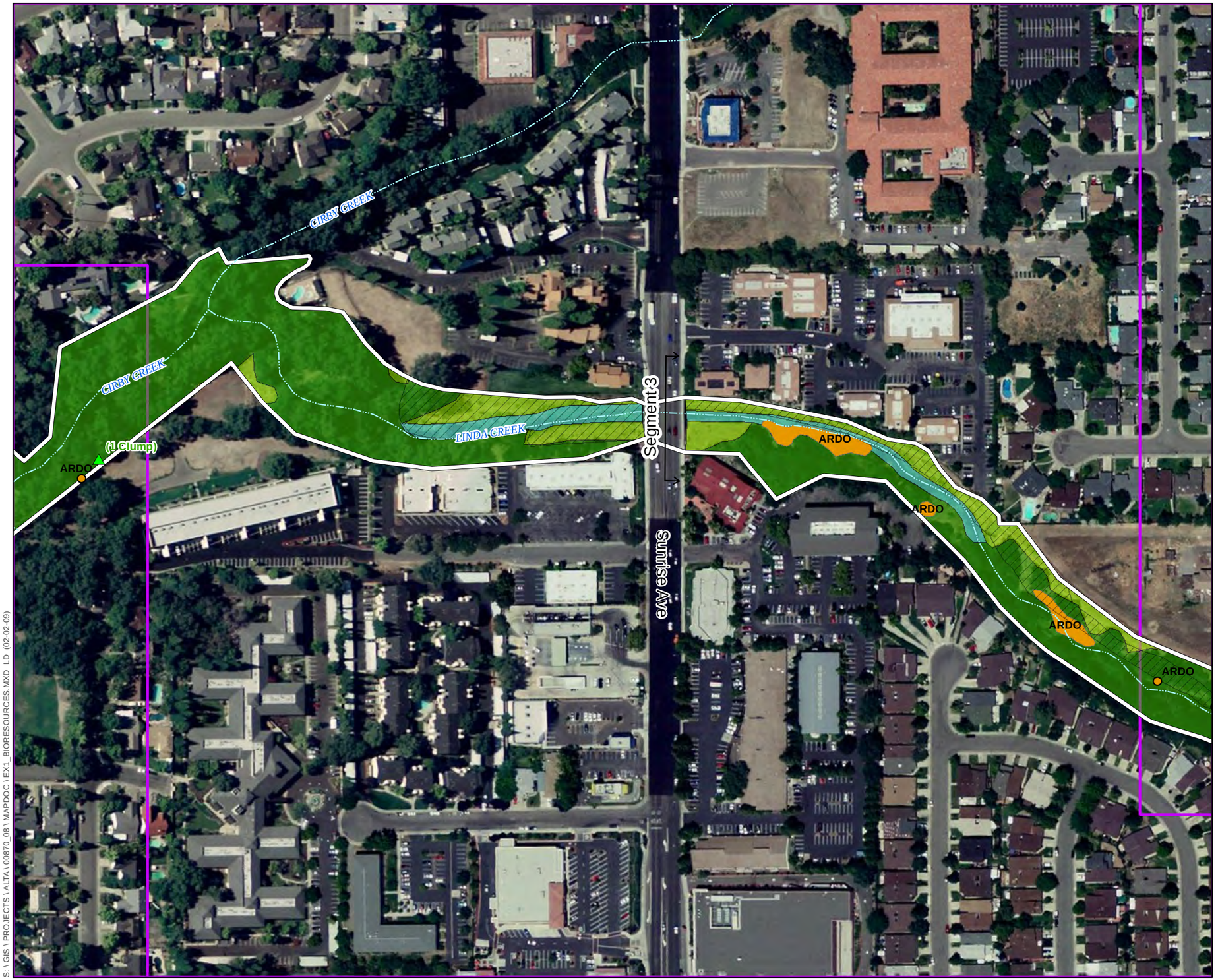
Exhibit 1 - Sheet 3

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources



Legend

- Study Area
- Creek
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- Mitigation/ Restoration Sites
- Elderberry Shrub*
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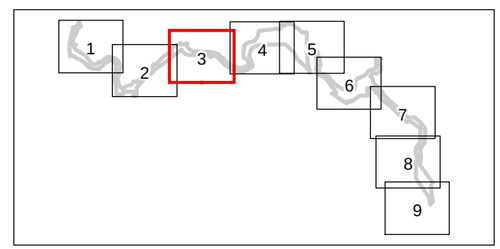

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Aerial Photo Source: Aerials Express, 2007

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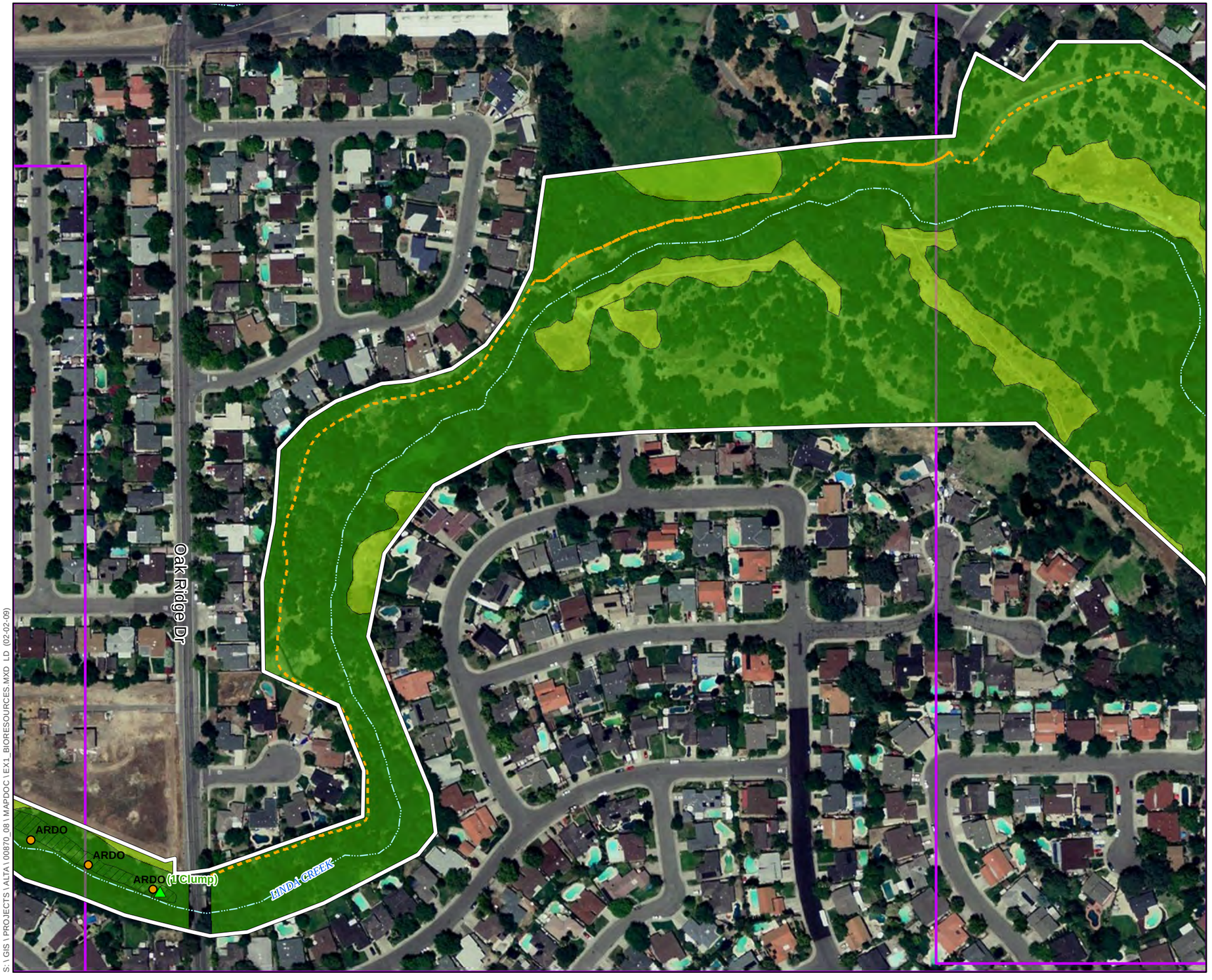
Exhibit 1 - Sheet 4

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources



Legend

- Study Area
- Creek
- Existing Trail
- Mitigation/ Restoration Sites
- Elderberry Shrub*
- Invasive Species

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- Mixed Riparian Forest
- Wetland
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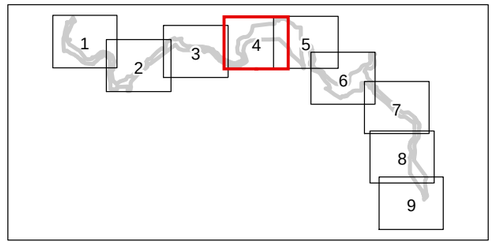

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Aerial Photo Source: Aerials Express, 2007

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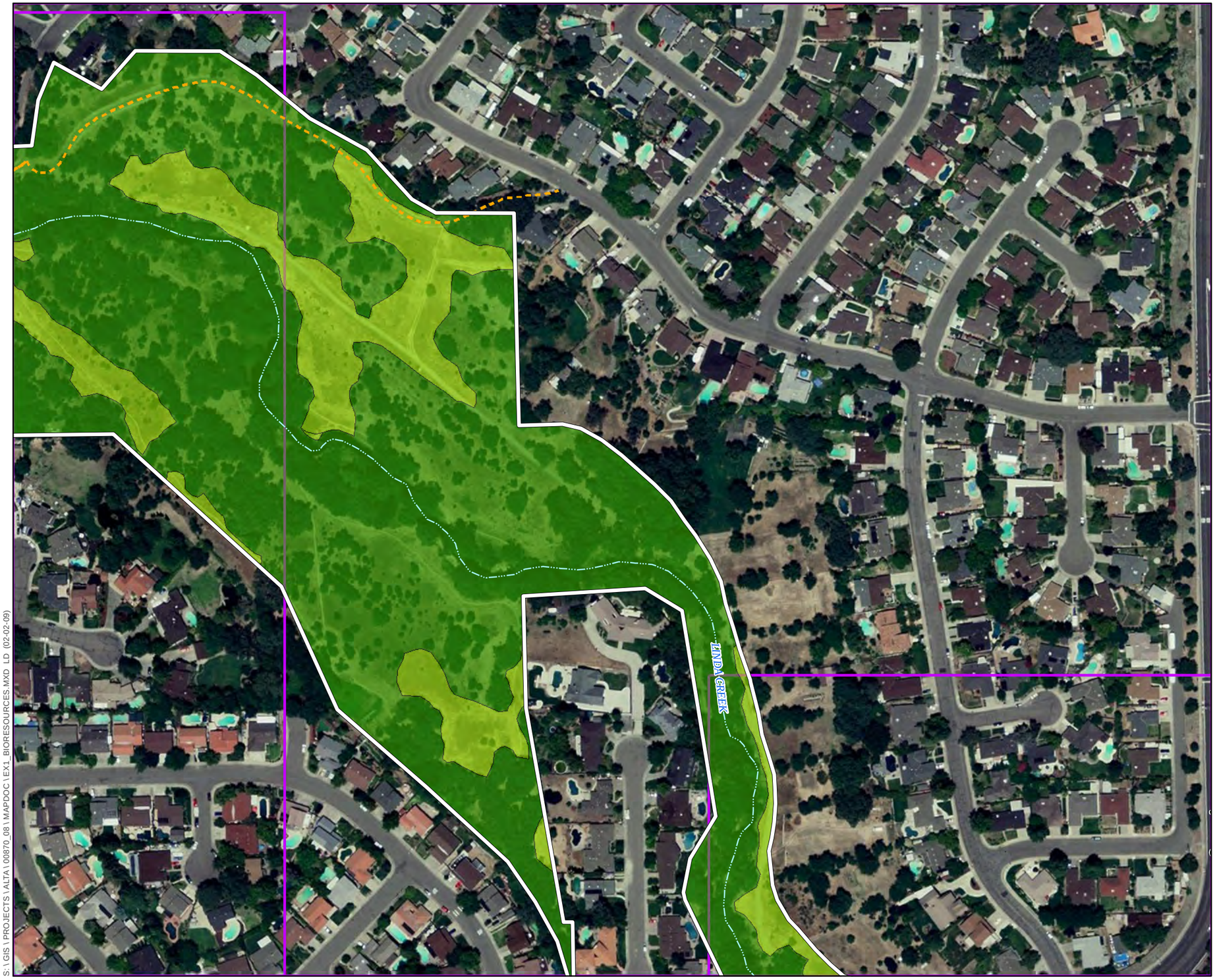

Exhibit 1 - Sheet 5

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources

Legend

- Study Area
- Creek
- Existing Trail
- Mitigation/ Restoration Sites
- Elderberry Shrub*
- Invasive Species

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- Annual Grassland
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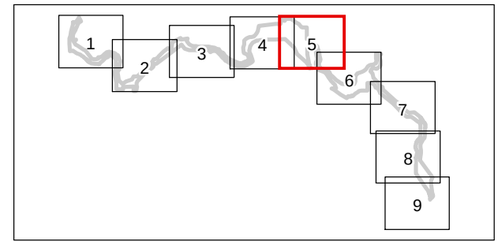

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Aerial Photo Source: Aerials Express, 2007

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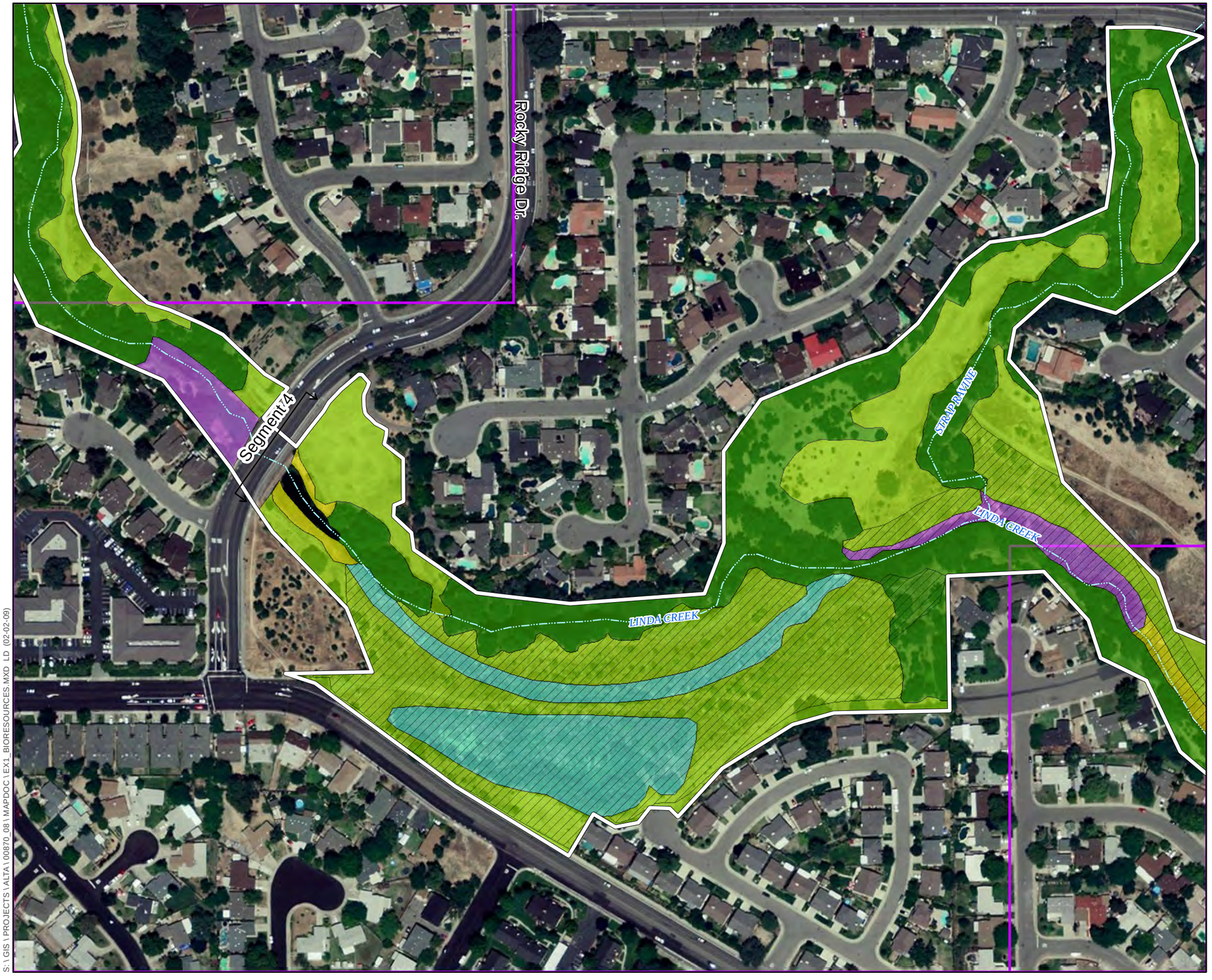

Exhibit 1 - Sheet 6

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources

Legend

- Study Area
- Creek
- Existing Trail
- Mitigation/ Restoration Sites
- Elderberry Shrub*
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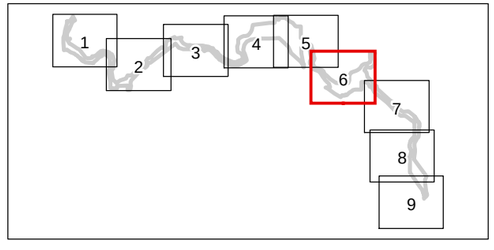
COSE	*Cortaderia selloana*	Pampas Grass
FICA	*Ficus carica*	Edible Fig

* habitat for valley elderberry longhorn beetle (VELB), a federally listed species



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Aerial Photo Source: Aerials Express, 2007

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Exhibit 1 - Sheet 7

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources

Legend

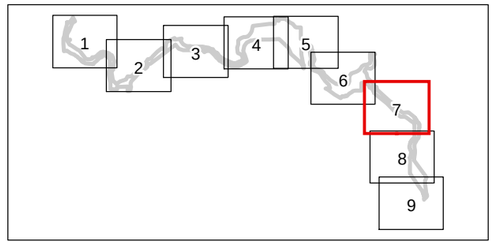
- Study Area
- Creek
- Existing Trail
- Mitigation/ Restoration Sites
- Elderberry Shrub*
- Invasive Species

Biological Communities

- Annual Grassland
- Willow Riparian
- Mixed Riparian Forest
- Wetland
- Valley Oak Woodland

Abbreviation	Scientific Name	Common Name
AIAL	*Ailanthus altissima*	Tree-of-Heaven
ARDO	*Arundo donax*	Giant Reed
CABI	*Catalpa bignonioides*	Southern Catalpa
COSE	*Cortaderia selloana*	Pampas Grass
FICA	*Ficus carica*	Edible Fig

* habitat for valley elderberry longhorn beetle (VELB), a federally listed species



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Aerial Photo Source: Aerials Express, 2007

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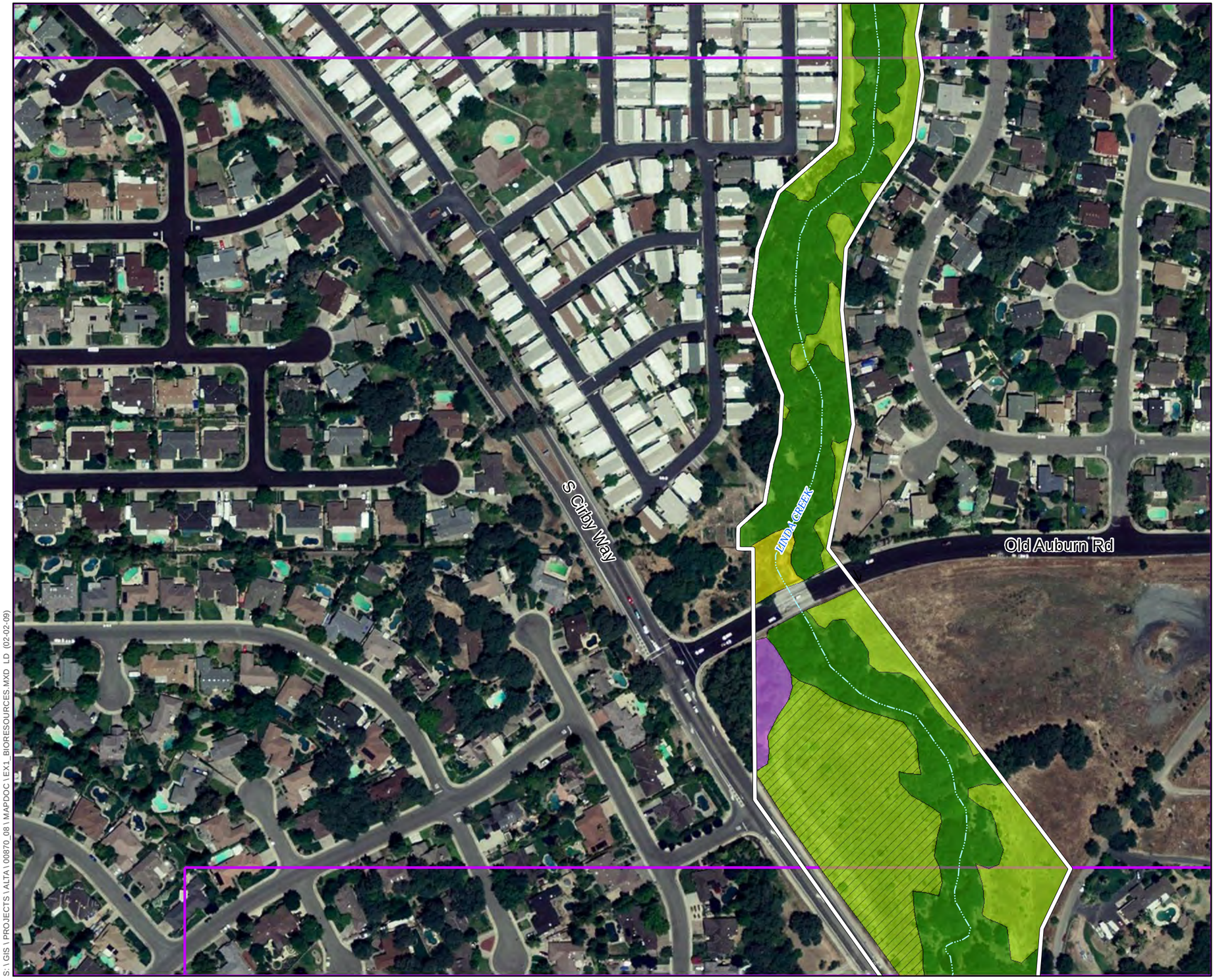


Exhibit 1 - Sheet 8

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources

Legend

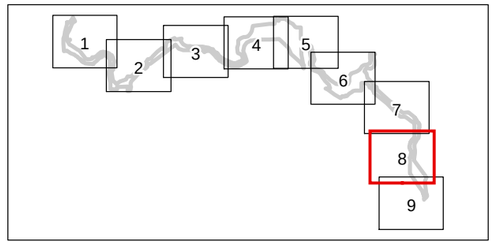
- Study Area
- Creek
- Existing Trail
- Mitigation/ Restoration Sites
- Elderberry Shrub*
- Invasive Species

Biological Communities

- Annual Grassland
- Willow Riparian
- Mixed Riparian Forest
- Wetland
- Valley Oak Woodland

Abbreviation	Scientific Name	Common Name
AIAL	*Ailanthus altissima*	Tree-of-Heaven
ARDO	*Arundo donax*	Giant Reed
CABI	*Catalpa bignonioides*	Southern Catalpa
COSE	*Cortaderia selloana*	Pampas Grass
FICA	*Ficus carica*	Edible Fig

* habitat for valley elderberry longhorn beetle (VELB), a federally listed species



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Aerial Photo Source: Aerials Express, 2007

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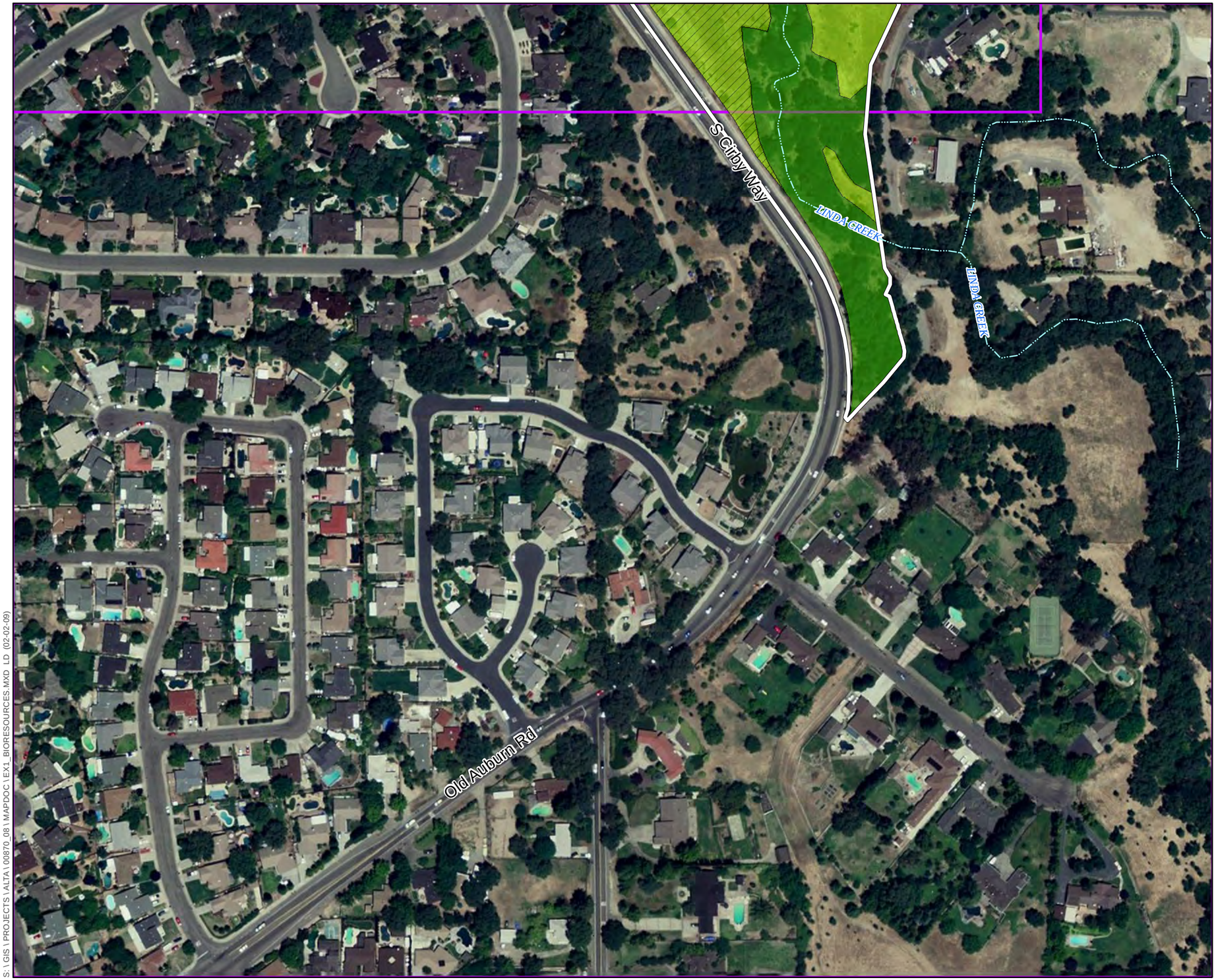

Exhibit 1 - Sheet 9

Dry Creek Greenway Multi-use Trail Planning & Feasibility Study

Biological Resources

Legend

- Study Area
- Creek
- Existing Trail
- Mitigation/ Restoration Sites
- Elderberry Shrub*
- Invasive Species

Biological Communities

- Annual Grassland
- Willow Riparian
- Mixed Riparian Forest
- Wetland
- Valley Oak Woodland

Abbreviation	Scientific Name	Common Name
AIAL	*Ailanthus altissima*	Tree-of-Heaven
ARDO	*Arundo donax*	Giant Reed
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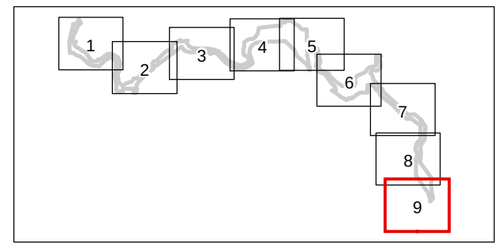
COSE	*Cortaderia selloana*	Pampas Grass
FICA	*Ficus carica*	Edible Fig

* habitat for valley elderberry longhorn beetle (VELB), a federally listed species



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Aerial Photo Source: Aerials Express, 2007

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