

**BIOLOGICAL RESOURCE ASSESSMENT
FOR THE
SIERRA VISTA SPECIFIC PLAN PROJECT
PLACER COUNTY, CALIFORNIA**

Prepared for:

URS Corporation
221 Main Street, Suite 600
San Francisco, California 94105
Contact: Denise Heick

Prepared by:



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BIOLOGICAL RESOURCE ASSESSMENT FOR THE SIERRA VISTA SPECIFIC PLAN PROJECT

INTRODUCTION

North Fork Associates (NFA) conducted a Biological Resource Assessment for the approximately 2,064-acre Sierra Vista Specific Plan (hereinafter, the study area) in Placer County, California; adjacent to the City of Roseville. Estep Environmental Consulting was retained to provide expertise on the wildlife portions of the assessment (Estep 2007b). The work was done in conjunction with the preparation of an Environmental Impact Report (EIR) being prepared for the City of Roseville and an Environmental Impact Statement (EIS) being prepared for the U.S. Army Corps of Engineers. This assessment includes the approximately 437-acre portion of the study area designated as Urban Reserve. Since no development (other than extension of West Side Drive and Road B) is proposed for the Urban Reserve, the Urban Reserve portion of the study area is evaluated at a programmatic level. The remaining portions of the study area (hereinafter, the project area) are evaluated at a project level. Refer to Figures 1, 2, and 3 for the location of the Urban Reserve.

Project Location and Setting

The study area is north of Baseline Road and west of Fiddymont Road in the western portion of the City of Roseville's Sphere of Influence. The study area is in portions of Sections 26, 27, 34, 35, and 36 of Township 11 North, Range 5 East on the Pleasant Grove and Roseville 7.5 minute U.S. Geological Survey (USGS) quadrangles (Figure 1). The approximate latitude and longitude for the center of the study area are 38°45'30" north and 121°23'00" west.

The study area is located in the eastern Central Valley at elevations of approximately 75 to 110 feet. The study area supports non-native annual grassland with flat to gently rolling topography and reflects a variety of landscape management practices. Although most of the study area is currently fallow, there is evidence of former wheat cultivation and pastureland. Evidence of recent disking also occurs throughout the study area. A few former farmstead residences are located in the western portion of the study area and are associated with ornamental trees (e.g., eucalyptus) and other features such as stock ponds. No other developed features exist on the landscape with the exception of a transmission line corridor that passes through the center of the study area, dirt ranch roads, and fences.

Wetlands and other waters are embedded within the annual grassland. Curry Creek flows east to west through the southern portion of the study area and supports scattered riparian and emergent vegetation. Two seasonal tributaries, vernal pools and swales, and other seasonal wetlands occur throughout the site.

Neighboring lands uses to the northwest and west are similar to the study area. These uses consist primarily of grazed annual grasslands and vernal pools. The landscape becomes more cultivated further west. South of Baseline Road, the landscape becomes increasingly fragmented with ranchette developments. To the east and northeast, the adjacent landscape is entirely urbanized and existing residential subdivision occurs across Fiddymont Road. Recent grading and infrastructure installation is occurring northeast of the site (Figure 2).

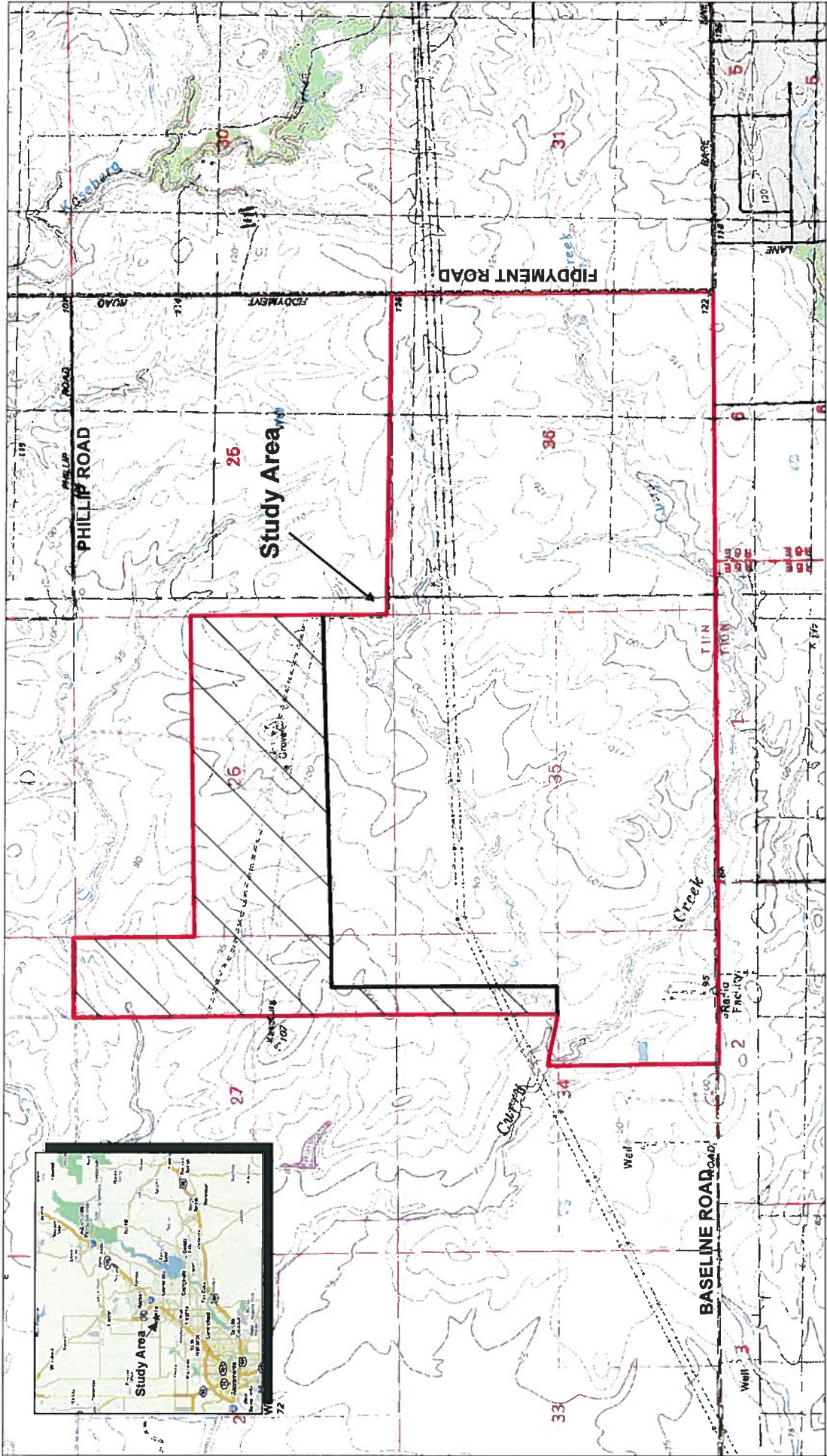
APPENDICES

Appendix A. Plant Species Observed within the Sierra Vista Study Area During Surveys

Appendix B. Wildlife Species Observed within the Sierra Vista Study Area During Surveys

Appendix C. Special Status Plant Species Known to Occur in the Sierra Vista Study Area Region

Appendix D. Special Status Wildlife Species Known to Occur in the Sierra Vista Study Area
Region

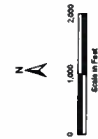
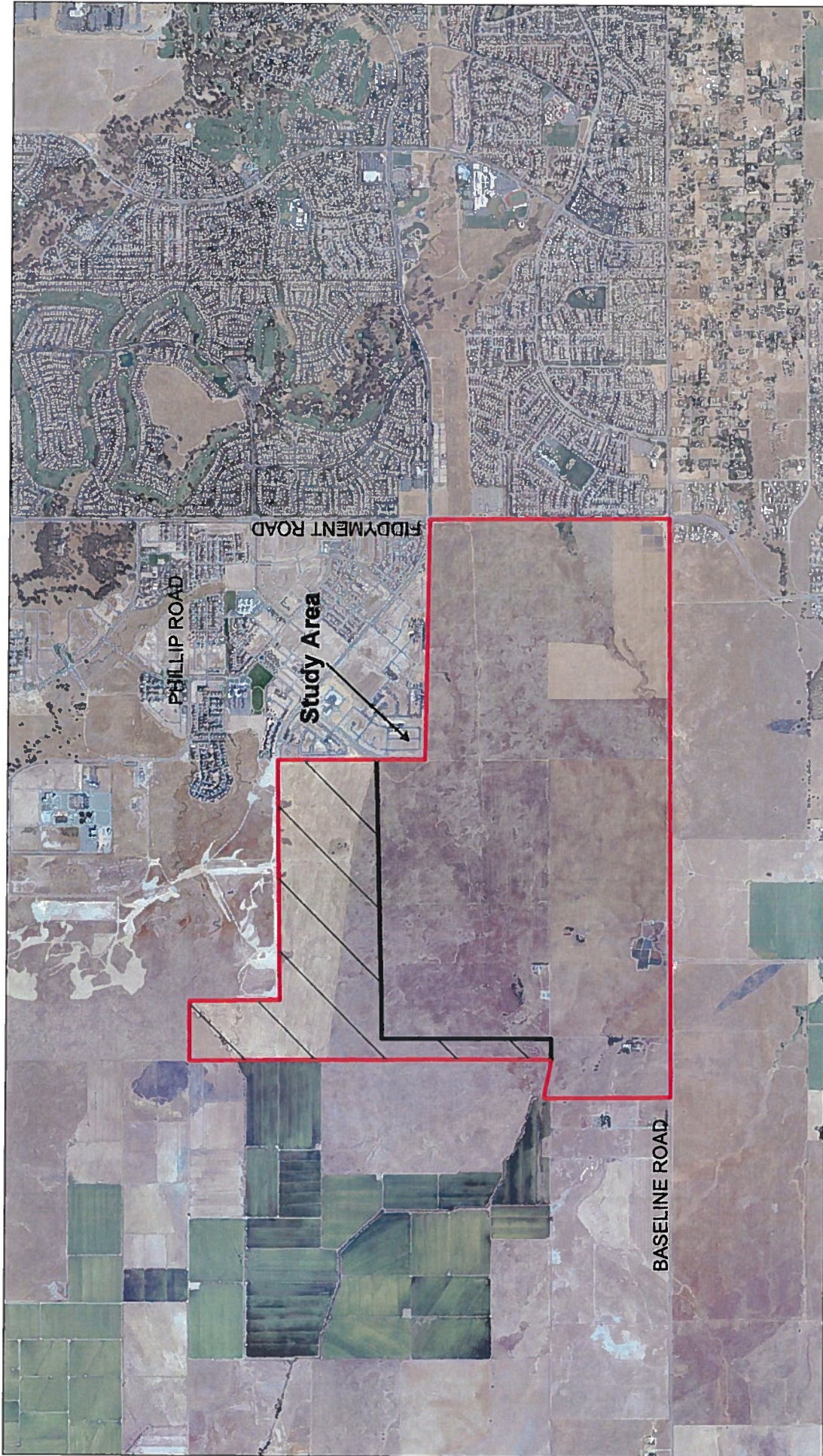


USGS Base Map: Pleasant Grove & Roseville, CA
 7.5 minute topographic quadrangle
 Section: 28-27 & 34-36
 Township: 11N
 Range: 05E

Portion of the Plan Area designated as Urban Reserve



Figure 1
SITE & VICINITY MAP
 Sierra Vista
 Placer County, California



Aerial Photo Date: November 2006


 Portion of the Plan Area designated as Urban Reserve

Figure 2
AERIAL PHOTO MAP
 Sierra Vista
 Placer County, California

Project Description

The proposed project is a specific plan development consisting of residential, commercial/mixed use, recreational, open space, and public/quasi-public land uses. The study area is divided up into several different ownership parcels that are all part of the specific plan development.

Objectives

- Identify and describe the biological communities present in the study area.
- Record plant and animal species observed in the study area.
- Evaluate and identify sensitive resources and special status plant and animal species that could be affected by project activities.
- Provide an assessment of impacts and mitigation alternatives.

METHODS

Available Literature and Other Information

A variety of resources were used in this assessment. Aerial photographs were obtained from Placer County, and topographical information was obtained from the USGS. Soil information was obtained from the Placer County soil survey (USDA 1980), and geological information was taken from the *Geologic Map of California, Sacramento Sheet* (California Department of Conservation 1966).

Prior to conducting the field survey, available information regarding biological resources on or near the study area was gathered and reviewed. Sources included: California Department of Fish and Game Swainson's Hawk surveys from 2002 and 2003, City of Roseville General Plan, Placer County General Plan, Pleasant Grove Creek and Curry Creek Ecosystem Restoration Plan, Placer Legacy Open Space and Agricultural Conservation Program, and West Roseville Specific Plan.

Plant names in this document are according to *The Jepson Manual* (Hickman 1993), except for changes obtained from the Jepson Online Interchange, an Internet database maintained by the University and Jepson Herbaria of the University of California. In general, common names are used in this report, with scientific names presented in the appendices.

In anticipation of the EIR and EIS, the project applicant, Sierra Vista Specific Plan Owner's Group, has undertaken several environmental studies that will be used as technical studies for the EIR and EIS. Several wetland delineations have been prepared for portions of the study area over the past five years. ECORP combined these wetland delineations into one map, as presented in their Section 404 permit application (ECORP 2006e). The following studies are used and referenced throughout this Biological Resource Assessment.

- 90-Day Report of Findings Regarding Federally listed Branchiopods for Sierra Vista Specific Plan, dated September 25, 2006 (ECORP 2006a)
- Raptor Species Assessment for Sierra Vista Specific Plan, dated September 25, 2006 (ECORP 2006b)

- Special Status Plant Survey for Sierra Vista Specific Plan, dated September 25, 2006 (ECORP 2006c)
- Western Spadefoot Toad (*Spea hammondi*) Survey Results for Sierra Vista Specific Plan, dated September 25, 2006 (ECORP 2006d)
- Comprehensive Clean Water Act, Section 404 Application for Sierra Vista, dated September 27, 2006 (ECORP 2006e)
- Arborist Survey Report for Sierra Vista Specific Plan, dated November 29, 2006 (ECORP 2006f)
- Special Status Plant Survey for KT-200 [200-acre addition], dated June 21, 2007 (ECORP 2007a)
- Western Spadefoot Toad (*Spea hammondi*) Survey Results for Sierra Vista Specific Plan (KT-200 Parcel) [200-acre addition], dated June 21, 2007 (ECORP 2007b)
- Arborist Survey Report for Chan Property, dated June 22, 2007 (ECORP 2007c)
- Sierra Vista Specific Plan, Chan Property – Nesting Raptor Survey, dated June 22, 2007 (ECORP 2007d)
- Special Status Plant Survey for Chan Property, dated June 22, 2007 (ECORP 2007e)
- Western Spadefoot Toad (*Spea hammondi*) Survey Results for Sierra Vista Specific Plan (Chan Parcel), dated June 22, 2007 (ECORP 2007f)
- 90-Day Report of Findings Regarding Federally listed Branchiopods for Sierra Vista Specific Plan, dated October 19, 2007 (ECORP 2007g)

Special Status Species Reports

NFA queried the California Natural Diversity Data Base (CDFG 2007) for location records for special status species known to occur in the region surrounding the study area. Quadrangles included in the query were Nicolaus, Sheridan, Lincoln, Verona, Pleasant Grove, Roseville, Taylor Monument, Rio Linda, and Citrus Heights. NFA biologists also reviewed the special status animal species lists for the Pleasant Grove and Roseville USGS quadrangles created by the U.S. Fish and Wildlife Service. The California Native Plant Society Inventory was checked for special status plants occurring in the area.

For the purposes of this report, special status species are those that fall into one or more of the following categories, including those:

- listed as endangered or threatened under the federal Endangered Species Act (including candidates and species proposed for listing);
- listed as endangered or threatened under the California Endangered Species Act (including candidates and species proposed for listing);
- designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- designated a Species of Concern by the California Department of Fish and Game;

- defined as rare or endangered under Section 15380 of the California Environmental Quality Act (CEQA); or
- occurring on List 1, 2, 3 or 4 maintained by the California Native Plant Society.

Field Surveys

Initial botanical and wildlife reconnaissance level surveys were conducted on December 14 and 27, 2006, and January 15, 2007. More extensive botanical and wildlife surveys were conducted on April 25 and 26, and October 9, 2007. These surveys were conducted to assess habitat conditions and determine the potential for occurrence of special status plant and wildlife species, and consisted of walking the study area and directly adjacent land, recording notes of species observed or their respective sign (nests, burrows, tracks, scat), and assessing habitat conditions. The surveys were conducted by Jeff Glazner, Barry Anderson, Erin Gottschalk (botany), and Jim Estep (wildlife). Appendix A is a list of plants observed, and Appendix B is list of wildlife observed in the study area.

RESULTS

Climate

The climate is mild with average annual maximum temperature of 73.6 degrees Fahrenheit and average annual minimum temperature of 49.0 degrees Fahrenheit, with winter rains and dry summers, and an average annual rainfall of approximately 20 inches.

Geology and Soils

The majority of the study area is situated on Plio-Pleistocene nonmarine sediments (California Department of Conservation, Division of Mines and Geology 1966). The western portion of the study area consists of fan deposits. Neither of these geological formations is known to support soil-specific special status plant species that occur primarily in the Sierra Nevada foothills.

Seven soil units are mapped on the study area (USDA 1980). Two of the following soil units are not located in the Urban Reserve (Alamo-Fiddymment complex and Fiddymment loam):

- Alamo-Fiddymment complex, 0-5 percent slopes
- Cometa-Fiddymment complex, 1-5 percent slopes
- Cometa-Ramona sandy loams, 1-5 percent slopes
- Fiddymment loam, 1-8 percent slopes
- Fiddymment-Kaseberg loams, 2-9 percent slopes
- San Joaquin-Cometa sandy loams, 1-5 percent slopes
- Xerofluvents, hardpan substratum

Alamo soils are Typic Duraquolls that are poorly drained and have very slow permeability. They generally form in basins and swales, and have an indurated hardpan at a depth of 20 to 40 inches. In addition, the water table in Alamo soils during the winter is usually very near the surface. Most Alamo soils are considered hydric.

Cometa soils are Alfisols formed from granitic rocks. The clay layer in Cometa soils is below 17 inches. A horizon chromas are between 2 and 4. The soils are well drained. These soils have very slow permeability, and depressions may be inundated or saturated for portions of the winter.

Fiddymment soils are Typic Durixeralfs that are moderately deep, well drained soils formed in material from consolidated sediments. Fiddymment soils are on undulating to rolling hills and terraces. Slopes are 1 to 15 percent.

Kaseberg series are Typic Durixerepts that consist of shallow, well-drained soils formed in material weathered from consolidated sediments of mixed rock sources. Kaseberg soils are on nearly level to rolling, sloping, low-lying terraces and hill slopes of dissected terraces and have slopes of 0 to 30 percent.

Ramona soils are fine-loamy, mixed Typic Haploxeralfs formed in alluvium from predominately granitic sources. They are undulating, very deep, well-drained soils on low terraces. Permeability is moderately slow.

San Joaquin soils are Alfisols derived mostly from granitic rocks. These soils have a clay layer that starts about 6 inches from the surface and a duripan between 20 and 40 inches. The A horizon is relatively shallow with chromas between 2 and 6. The upper part of the B horizon (6 to 10 inches) has chromas between 4 and 6. Both horizons can have dark Fe-Mn concretions. Because of the high clay content and duripan, San Joaquin soils have very slow permeability. Depressions in San Joaquin soils may be inundated or saturated for periods during the winter rainy season, and Alamo clays are often hydric inclusions.

Xerofluvents soils consist of young, poorly developed alluvial soils that typically occur on floodplains and terraces. These undeveloped soils are not sufficiently characterized to the extent necessary to be classified at a lower taxonomic level.

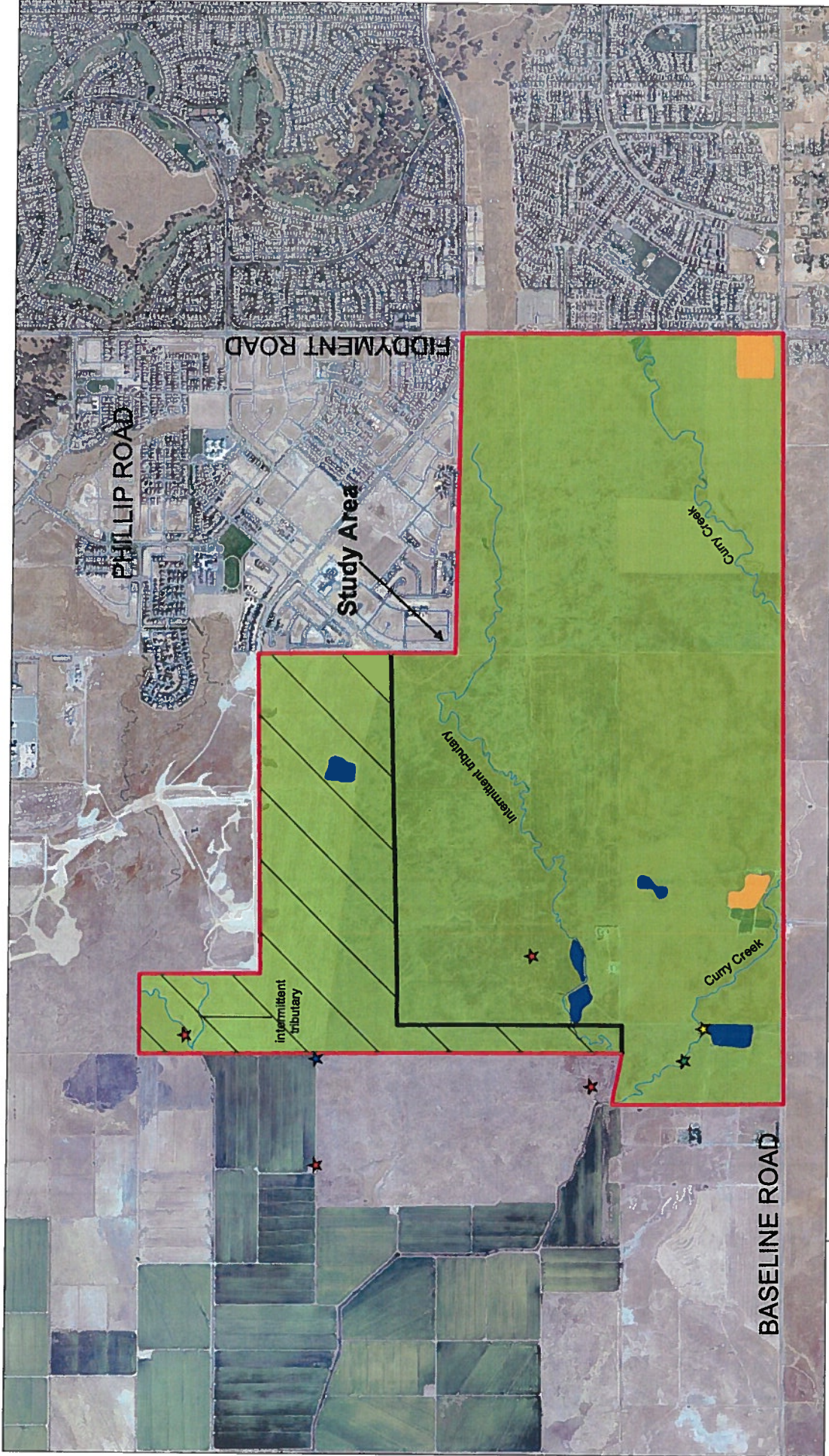
Most of the soils mapped in the study area are Alfisols, soils with a dense clay layer, or, like San Joaquin soils, have a duripan that restricts the percolation of water. As such, these soils tend to become inundated in swales and depressions during the rainy season. Several of these soils are known to support vernal pools and swales in this part of the Central Valley.

Hydrology

The study area is in the Lower Sacramento River Watershed (HUC 18020109). The main hydrologic feature within the study area is Curry Creek, a perennial drainage that meanders east to west across the southern portion of the study area. This feature is represented as a solid blue-line feature on the USGS map (Figure 1). Water in Curry Creek is eventually captured in the northern part of the East Main Drain Canal, which ultimately drains into the Sacramento River. Two unnamed tributaries to Curry Creek meander through the center and very northern portions of the study area. These features are represented as broken blue-line features on the USGS map (Figure 1). The study area also supports swales, vernal pools, and other seasonal wetlands that are either saturated or inundated during the rainy season.

Biological Communities

Four general biological communities were observed within the study area and include annual grassland, stream complex, rural mix landscape, and intensive agriculture (Figure 3). All of the general biological community designations occur within the Urban Reserve except for intensive



N

0 250 500 1000 1500
Feet

Aerial Photo Date: November, 2008

Legend

- Rural Mix Landscape
- Intensive Agriculture
- Stream System
- Annual Grassland
- ★ Swainson's hawk
- ★ Great-horned owl
- ★ Red-tailed hawk
- ★ White-tailed kite
- Portion of the Plan Area designated as Urban Reserve

Figure 3

HABITAT MAP
Sierra Vista
Placer County, California

agriculture. The vegetation and variations within these biological communities are described below. Appendix A lists the plant species that were observed during field surveys. Study area photographs are included in Figures 4 and 5.

Annual Grassland

Most of the study area supports disturbed, non-native annual grassland that reflects a variety of landscape management practices. Although most of the study area is currently fallow, there is evidence of former wheat cultivation, regular disking, and pastureland. The large majority of the study area has been disked to various degrees over the years. In particular, the Urban Reserve shows signs of regular disking and seeding. During the April 2007 surveys, this area was dominated by wheat. Large patches of hairy vetch, bare ground, and ruderal vegetation (such as of narrowleaf cottonrose, turkey mullein, common knotweed, and bindweed) occurred throughout (Figure 5a). The western portions of the study area are fallow and appear to have been historically heavily grazed; however, during the field surveys (in April 2007) no cattle were on any portion of the study area and the study area had not been recently grazed. The eastern - northeastern portion of the study area is also fallow and appears not to have been disked in several years. The areas along the southern study area boundary appear to be recently and regularly disked. All these currently fallow areas are dominated by non-native grass species such as medusa-head grass, soft chess, riggut grass, and slender wild oat. Other non-native herbaceous species include yellow star thistle, vetch, filaree, Fitch'spikeweed, long-beaked hawkbit, and virgate tarweed. Native species present within the grassland include common fiddleneck, rusty popcornflower, ookow, white brodiaea, and Ithuriel's spear.

Wetlands and other waters are embedded within the annual grassland. Seasonal drainages, vernal pools, other seasonal wetlands, and stock ponds occur throughout the study area. Curry Creek and the two intermittent tributaries are discussed as a separate biological community, representing unique habitats within the study area. These features are discussed below.

Stream Complex

Curry Creek crosses the property from east to west. This feature is associated with unique habitats, such as riparian and emergent marsh vegetation. Curry Creek is a perennial drainage that contained flowing and standing water at the time of the field surveys. The portion of Curry Creek that meanders through the southeastern corner of the study area between Fiddyment Road and Baseline Road supports continuous cattail marsh along nearly its entire course. Small patches of emergent marsh are also present along the remainder of Curry Creek between Baseline Road and the western boundary of the study area. Curry Creek supports scattered patches of willow-dominated riparian scrub in association with the cattail marsh between Fiddyment Road and Baseline Road (Figure 4c). The portion that meanders through the southwest corner supports some willows as well as a few large Fremont cottonwood trees. The emergent marsh vegetation is largely contained within the channel of Curry Creek and the willows are scattered and not continuous enough to be mapped out separately on the habitat map (Figure 3).



4a. Intermittent tributary with vernal pool flora in central portion of study area.

4b. Relatively undisturbed vernal pool.



4c. Seasonal wetland in foreground with Curry Creek and emergent marsh and willows in background.

4d. Curry Creek in western portion of study area.



Photo Date: April 26, 2007

Figure 4

SITE PHOTOS
Sierra Vista
Placer County, California



5a. Annual grassland (disked & seeded with wheat) in northern portion of study area (Urban Reserve).



5b. Dwarf downingia in wetland swale in western portion of study area.



5c. Intermittent tributary and Fremont cottonwoods in northern portion of study area (Urban Reserve).



5d. Eucalyptus grove at farmstead in rural mix landscape.



Photo Date: April 25, 2007 & May 24, 2007

Figure 5

SITE PHOTOS
 Sierra Vista
 Placer County, California

Two tributaries to Curry Creek run east to west across the center and very northern tip (Urban Reserve) portions of the study area. These intermittent streams drain into Curry Creek offsite to the west. They do not support emergent marsh vegetation and were mostly dry, except for some pools, during the time of our field surveys in April. Some of the less-disturbed vernal pool features are associated with the tributaries, likely due to the limited disking that has occurred adjacent to the streams. In particular, the upper reaches of the stream running through the center of the study area contains a high diversity of native vernal pool flora (Figure 4a). Adjacent to the stream is a low terrace supporting relatively deeper and less disturbed vernal pools than found throughout much of the rest of the study area. In addition, several mature cottonwood trees occur along the tributary in the northwest corner of the study area (Urban Reserve) (Figure 5c). These trees, along with several small willows, occur scattered along the stream. The locations of the two intermittent tributaries are represented on Figure 3 (Habitat Map).

Rural Mix Landscape

A couple farmsteads are located in the western portion of the study area and one is located in the Urban Reserve. These farmsteads are associated with ornamental tree groves (mostly eucalyptus) (Figure 5d), and other farming and ranching features such as buildings, barns, and stock ponds. Other than the Fremont cottonwoods and willows along the streams, the rural mix landscape supports the only trees within the study area. These include ornamental pines, eucalyptus, olive, white mulberry, elm, fig, English walnut, and catalpa. The rural mix landscape is disturbed; however, evidence of the surrounding natural habitats is present along the edges of the rural landscape in the form tree species such as valley and interior live oaks and natural wetland features.

Intensive Agriculture

During field surveys in April 2007, only two small portions of the study area supported intensive agriculture. These are the small strawberry fields along Baseline Road, which have been stripped of the annual grassland vegetation and planted with strawberries. Irrigation and strawberry stands are also present. One of the fields is at the corner of Baseline Road and Fiddymont Road, and the other is east of Watt Avenue, just north of Curry Creek. No intensive agriculture production or crop monocultures occur in the Urban Reserve.

Waters of the United States

Over the past five years, several wetland delineations were prepared for the various ownership parcels within the study area. ECORP combined these wetland delineations into one map, as presented in their Section 404 permit application (ECORP 2006e). A total of 36.434 acres of waters of the United States occur within the project area and a total of 13.865 acres occur in the Urban Reserve (Gibson & Skordal 2009). Following is a summary of the wetland and other water resources observed during field surveys.

Curry Creek

Perennial streams, unlike ephemeral or intermittent streams, flow year-round. They typically exhibit bed-and-bank morphology. One perennial stream, Curry Creek, is located within the study area. It is represented as a solid blue-line feature on the USGS map and flows from east

to west through the southern section of the study area. It enters the study area from a culvert under Fiddymment Road approximately 0.5 mile north of Baseline Road. It meanders through the southeast corner of the study area before crossing Baseline Road approximately one mile west of Fiddymment Road and re-enters the study area approximately 0.4 mile east of the western boundary. The creek leaves the study area at the western boundary. During the time of the survey, the creek supported flowing water. Much of the water is likely coming from urban irrigation and runoff. Water in Curry Creek is eventually captured in the northern part of the East Main Drain Canal, which ultimately drains into the Sacramento River. Curry Creek supports emergent marsh in the creek channel and scattered riparian vegetation, as described above. Other than the scattered riparian vegetation, the banks of Curry Creek consist of annual grassland (Figure 4d). Curry Creek is entirely located within the project area, totaling 2.150 acres. No perennial streams are located within the Urban Reserve.

Intermittent Tributaries

Intermittent streams flow during and some time after rain events. Intermittent streams usually have a groundwater component or another water source that provides water in the absence of precipitation. Two intermittent tributaries to Curry Creek occur in the central and northernmost (Urban Reserve) portions of the study area. A total of 5.070 acres of intermittent streams occur in the project area and 1.186 acres occur within the Urban Reserve. A small western portion of the central tributary was verified as an ephemeral stream (totaling 0.019 acres in the project area) (Gibson & Skordal 2009). These features exhibited bed-and-bank morphology typical of streams. They did not contain flowing water during field surveys in April; however, they did contain small pools of water at several locations throughout their course. These deeper areas supported native creeping spikerush and fringed water-plantain. The creek beds support a diversity of native vernal pool flora, particularly along the upper reaches of the tributary in the central portion of the study area, as described above. Several large Fremont cottonwood trees are associated with the tributary to the north, in the Urban Reserve.

Wetland Swales

Wetland swales are water conveyance features that do not exhibit the bed-and-bank morphology typical of streams. In studying the area, wetland swales occur throughout the property and typically drain water to either Curry Creek or the two tributaries. Most of these features are relatively disturbed due to the regular disking. The seasonal wetland swales along the northern study area boundary support cultivated wheat and other upland species, along with wetland species such as creeping spikerush, Vasey's coyote-thistle, and iris-leaved rush. Less disturbed wetland swales, such as the wetland swale that flows into the intermittent tributary in the central portion of the study area, support mostly native vernal pool flora (e.g., double-horned downingia, Fremont's goldfields, stipitate popcornflower, and dwarf woolly-heads). These less disturbed features are more aptly described as vernal swales. A total of 9.879 acres of wetland swales occur in the project area and 7.749 acres occur within the Urban Reserve (Gibson & Skordal 2009).

Wildlife Occurrence and Use

The following section describes the general wildlife use of the study area. Appendix B lists the wildlife species that were observed during field surveys.

The region surrounding the study area is becoming increasingly urbanized, with residential development continuing to extend westward from Roseville. The study area is adjacent to this urban expansion, with existing development occurring on the north and east of the study area. As a result, wildlife populations are becoming increasingly constrained in the region as open grazing and agricultural lands are removed and fragmented from the gradual transformation into urban communities, and as urban-related disturbances increase.

Land management practices in the study area and throughout western Placer County have also constrained wildlife populations. For example, cultivation of vernal pool grasslands has affected watershed function, and the spread of invasive non-native species such as yellow star thistle has altered vegetation patterns. Ground squirrel control has limited opportunities for subterranean species such as burrowing owl, reptiles, and amphibians that access underground squirrel and rodent burrows for nesting or hibernation.

Despite these transformations, the study area and surrounding open landscape continue to provide suitable habitat for many wildlife species. During the winter and spring months when vernal pools and swales and other seasonal wetlands are inundated, these habitats support a variety of aquatic invertebrates – including several special status species, and are key habitats for wintering waterfowl, wading birds, shorebirds, and several amphibian species such as Pacific chorus frog.

The open grassland habitats are also suitable to several breeding and wintering raptors, particularly as foraging habitat. Several important prey species were detected during surveys, including pocket gopher, meadow vole, and black-tailed jackrabbit. During the spring and summer seasons, locally breeding raptors such as Swainson's hawk, red-tailed hawk, white-tailed kite, northern harrier, and American kestrel are dependent on grassland and agricultural foraging habitats.

During the field surveys in April 2007, four red-tailed hawk nests, one Swainson's hawk nest, one possible white-tailed kite nest, and one great-horned owl nest were found within the study area or in adjacent land to the west. Refer to Figure 3 for the observed nest locations. Northern harrier and American kestrel were observed foraging in the study area. During winter, additional species, such as ferruginous hawk, rough-legged hawk, Cooper's hawk, and sharp-shinned hawk also occupy these landscapes.

The grassland habitats are also important nesting habitat for many ground-nesting birds, such as western meadowlark and horned lark and are home to several common reptiles such as gopher snake, valley garter snake, and western fence lizard.

While relatively uncommon in the study area, other habitat types such as emergent marsh, perennial and intermittent streams, small areas of riparian woodland, and isolated trees or groups of trees further enhance the value of this landscape by providing nesting, roosting, and

Vernal Pools

Vernal pools are basins that fill with winter/spring rainfall and remain inundated for longer periods than the surrounding upland due to an impermeable or semi-permeable hardpan or duripan subsurface layer. They support a variety of invertebrate populations (including federally listed branchiopods) and a unique flora that is dependent on the pool's inundation regime. There are a total of 10.654 acres of vernal pools in the project area and 2.994 acres within the Urban Reserve (Gibson & Skordal 2009). The more disturbed vernal pools, such as those within areas that were heavily grazed and/or disked (such as in the Urban Reserve), are dominated by Mediterranean barley, European mannagrass, and Italian ryegrass. Due to the land use practices within the study area, the majority of the vernal pools show signs of disturbance. The vernal pools that show less to no signs of disturbance, such as the deeper pools and those adjacent to the creeks, support a dominance of native vernal pool flora. Species include stipitate popcornflower, Fremont's goldfields, double-horned and Solano downingia, Vasey's coyote-thistle, vernal pool buttercup, Pacific foxtail, and annual hairgrass (Figure 4b).

Seasonal Wetlands

Seasonal wetlands are seasonally inundated or saturated depressions. They are similar to vernal pools; however, they support mostly a non-native flora not dominated by vernal pool species. Moreover, they may not be associated with a water restricting subsurface layer, as is associated with vernal pools. Within the study area, the depressions collect rain water or receive water from an adjacent stream during high flows. Inundation periods appear to be relatively short and the wetlands have been susceptible to the ongoing disturbance described above. Vegetation within the seasonal wetlands includes curly dock, Italian ryegrass, spiny-fruit buttercup, tall flatsedge, Vasey's coyote-thistle, and European mannagrass (Figure 4c). A total of 5.735 acres of seasonal wetlands occur in the project area and 1.936 acres occur within the Urban Reserve (Gibson & Skordal 2009).. One perennial marsh is located in the project area, totaling 0.859 acre. The perennial marsh was functioning more like a seasonal wetland at the time of our field surveys in 2007.

Stock Ponds

There are a few large ponds (totaling 2.067 acres) in the western portion of the project area. They are associated with farmsteads, with trees and patches of emergent vegetation (cattails, water plantain, and creeping spikerush) around the perimeter. The ponds were mostly dry at the time of the field visits in April 2007.

Oak Woodland and Tree Resources

Very few trees occur within the study area and no oak woodland habitat occurs within the study area. Several mature cottonwood trees occur along Curry Creek and in other scattered locations. The *Arborist Survey Report* (ECORP 2006f) inventoried trees within the study area. In the project area, there are a total of 42 Fremont cottonwood, 18 willows, eight black walnut, five interior live oak, three Oregon ash, and one valley oak. In the Urban Reserve, there are a total of 21 Fremont cottonwood. The other trees in the study area are non-native or were planted as ornamentals. Three small eucalyptus stands are present, each associated with former farmsteads.

cover habitat for species that also use the open grassland and vernal pools. The cattail marsh within Curry Creek provides important nesting opportunities for red-winged blackbirds and other species that also forage in grassland habitats. The stream channels and associated vegetation provide cover for many species and denning opportunities for coyote and other mammals. The flowing and pooled water provide an important source of drinking water for many birds and mammals.

The patches of willow-dominated riparian habitat along Curry Creek in the eastern portion of the study area, the patches of cottonwood and willow riparian along Curry Creek in the western portion of the study area, and the few isolated trees and small groups of trees provide important nesting habitat for breeding raptors and many other birds common to the area, including American crow, western scrub jay, yellow-billed magpie, mourning dove, and a variety of songbirds. Trees associated with farm and ranch residences provide similar nesting and roosting habitat value.

The presence of the transmission line that crosses through the southern portion of the study area enhances the wildlife value of the landscape by providing cover and burrowing habitat around the tower footings and perches and nesting opportunities on the towers. During the survey in April, two red-tailed hawk nests were found on transmission towers in the study area and adjacent land to the west (Figure 3).

Special Status Species

Appendix C is a list of potentially occurring special status plants, and Appendix D is a similar list of special status wildlife compiled from queries described in the Methods section above. Species requiring habitats not occurring in or around the study area and species occurring far outside the study area are not considered in Appendices C or D.

This refined list of special status species in the region of the study area includes 13 plants and 34 animals. Field surveys and the best professional judgment of NFA biologists were used to further refine the tables in Appendices C and D. Of the 13 plant species listed in Appendix C and 34 animal species listed in Appendix D, 12 plants and 23 animals either occur within the study area or have some potential to occur because the study area has some areas of suitable habitat or they are known from nearby locations. Table 1 is a summary of those species, and they are discussed in more detail in the paragraphs following the table. Colonial nesting egrets and herons are listed in Appendix B and Table 1 because their rookeries are tracked and of interest to California Department of Fish and Game (CDFG); however, they are technically not special status birds. Valley elderberry longhorn beetle and salmonids are discussed in the paragraphs following the table, although there is no potential for these species to occur within the study area.

Special status species surveys were conducted by ECORP in 2005, 2006, and 2007, and results were presented in several reports (ECORP 2006a, 2006b, 2006c, 2006d, 2007a, 2007b, 2007c, 2007d, 2007e, 2007f). The special status species reports included listed wet-season branchiopod surveys in 2005 and 2006, western spadefoot surveys in 2006 and 2007, raptor surveys in 2006 and 2007, and special status plant surveys in 2006 and 2007. These surveys are referenced in the following discussion. Unless otherwise noted, the potential for occurrence refers to the entire study area (including the Urban Reserve).

Table 1
Special Status Species That Could Occur in the Study Area

Species	Federal	State	CNPS	Habitat	Potential for Occurrence
Plants					
Henderson's bent grass <i>Agrostis hendersonii</i>	-	-	List 3.2	Valley and foothill grassland (mesic); vernal pools.	Possible. Marginal habitat is present.
Big-scale balsam-root <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	-	-	List 1B.2	Cismontane woodland; valley and foothill grassland	Unlikely. Disturbance may preclude this species.
Dwarf downingia <i>Downingia pusilla</i>	-	-	List 2.2	Valley and foothill grassland; vernal pools	Occurs. Found at several locations during surveys in both the project area and Urban Reserve.
Bogg's Lake hedge-hyssop <i>Gratiola heterosepala</i>	-	CE	List 1B.2	Vernal pools	Possible. Marginal habitat is present.
Rose mallow <i>Hibiscus lasiocarpus</i>	-	-	List 2.2	Marshes and swamps (freshwater).	Possible. Marginal habitat is present.
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	-	-	List 1B.2	Vernal pools	Possible. Suitable habitat is present.
Red Bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i>	-	-	List 1B.1	Vernal pools and seasonal wetlands	Unlikely. Nearest known occurrence is considered to be a misidentification (CDFG 2007).
Legenere <i>Legenere limosa</i>	-	-	List 1B.1	Vernal pools and seasonal wetlands	Possible. Marginal habitat is present.
Pincushion navarretia <i>Navarretia myersii</i> ssp. <i>myersii</i>	-	-	List 1B.1	Vernal pools	Possible. Suitable habitat is present.
Slender Orcutt grass <i>Orcuttia tenuis</i>	FT	CE	List 1B.1	Vernal pools	Unlikely. Marginal habitat occurs in the study area. Prefers larger, deeper pools. Not known from Placer County.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence
California red-legged frog <i>Rana aurora draytonii</i>	FT	CSC	-	Deeper pools and streams with emergent or overhanging vegetation.	None in Urban Reserve. Unlikely in project area. Marginally suitable habitat within project area. No recent records from western Placer County.
Western spadefoot <i>Spea hammondi</i>	-	CSC	-	Vernal pools	Possible. Not detected during surveys (ECORP 2006d); however, suitable habitat in study area and known from nearby locations.
Reptiles					
Western pond turtle <i>Clemmys marmorata</i>	-	CSC	-	Ponds, marshes, river, streams and ditches with basking sites and vegetation.	None in Urban Reserve. Unlikely in project area. Marginally suitable habitat in project area.
Giant garter snake <i>Thamnophis gigas</i>	FT	CT	-	Streams, irrigation channels, seasonal wetlands	None in Urban Reserve. Unlikely in project area. Marginally suitable habitat in project area.
Birds					
Tricolored blackbird <i>Agelaius tricolor</i>	-	CSC	-	Open water areas with tall emergent vegetation or in willow and blackberry thickets.	None in Urban Reserve. Possible in project area. Suitable habitat in project area.
Great egret (rookery) <i>Ardea alba</i>	-	*	-	Colonial nester in tall trees.	Unlikely. Marginal rookery habitat occurs in the study area.
Great blue heron(rookery) <i>Ardea herodias</i>	-	*	-	Colonial nester in tall trees.	Unlikely. Marginal rookery habitat occurs in the study area.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence
Sacramento Valley Orcutt grass <i>Orcuttia viscida</i>	FE	CE	List 1B.1	Vernal pools	Unlikely. Marginal habitat occurs in the study area. Prefers larger, deeper pools. Not known from Placer County.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	-	-	List 1B.2	Marshes, swamps, and other wetlands	Possible. Suitable habitat is present along streams.
Invertebrates					
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	-	-	Vernal pools, swales, seasonal wetlands	Occurs. Observed by ECORP during 2005-2007 wet season surveys in both the project area and Urban Reserve (ECORP 2006a, 2007g).
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE	-	-	Vernal pools, swales, seasonal wetlands	Unlikely. Not detected during ECORP 2005-2007 surveys and restricted known range in western Placer County.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	-	-	Vernal pools, swales, seasonal wetlands	Unlikely. Not detected during ECORP 2005-2007 surveys and restricted known range in western Placer County.
Amphibians					
California tiger salamander <i>(Ambystoma californiense)</i>	FT	CSC	-	Vernal pools, vernal pool grasslands, ponds	Unlikely. Not detected during branchiopod or spadefoot surveys (ECORP 2006a; 2006d) and no recent or historical records from western Placer County.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence
Black-crowned night-heron (rookery) <i>Nycticorax nycticorax</i>	-	*	-	Colonial nester in trees and sometimes tule patches.	Unlikely. Marginal rookery habitat occurs in the study area.
Mammals					
Pallid bat <i>Antrozous pallidus</i>	-	CSC	-	Shrublands, grasslands, woodlands, forests; rocky areas, caves, mines, hollow trees for roosting.	Possible for foraging, unlikely for roosting.
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	-	CSC	-	Most low to mid-elevation habitats; caves, mines, and buildings for roosting.	Possible for foraging, unlikely for roosting.
Yuma myotis <i>Myotis yumanensis</i>	-	CSC	-	Forests and woodlands; caves, mines, and buildings for roosting.	Possible for foraging, unlikely for roosting.

Status Codes:

Federal	FE	Federal Endangered
	FT	Federal Threatened
State	FP	Federal Proposed Species
	CE	California Endangered
	CT	California Threatened
	CR	California Rare (plants only)
	CSC	California Species of Concern
CNPS	CFP	California Fully Protected
	*	Rookeries are tracked and of special interest to CDFG
	List 1B	Rare or Endangered in California
	List 2	R and E in California, more common elsewhere
	.1	Seriously endangered in California
	.2	Fairly endangered in California

Definitions for the Potential to Occur:

- **None.** Habitat does not occur.
- **Unlikely.** Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.
- **Possible.** Marginal to suitable habitat occurs, and the study area occurs within the range of the species.
- **Likely.** Good habitat occurs, but the species was not observed during surveys.
- **Occurs:** Species was observed during surveys.

Plants

ECORP conducted determinant-level special status plant surveys for Sierra Vista throughout the spring and early summer of 2006 (ECORP 2006c). For this Biological Resource Assessment, NFA surveyed the study area in December 2006, January 2007, and April 2007.

Henderson's bent grass (*Agrostis hendersonii*) is an annual member of the grass family (Poaceae). It has no state or federal status. It is on the CNPS List 3, which is a watch list for species needing more information. Henderson's bent grass is very similar to the more common *Agrostis microphylla*, but its fruiting bodies are larger and it is restricted to vernal pools and mesic areas. It is found at scattered locations from Shasta County to Merced County. It blooms in April and May. ECORP notes that a single occurrence of Henderson's bent grass has been reported in the Lincoln USGS quadrangle; however, this occurrence is not reported in the CNDDDB (2007).

Species	Federal	State	CNPS	Habitat	Potential for Occurrence
Burrowing owl <i>Athene cunicularia</i>	-	CSC	-	Grasslands, agricultural lands	Occurs. One individual observed in 2005 in the project area. Suitable habitat exists.
Swainson's hawk <i>Buteo swainsoni</i>	-	CT	-	Grasslands, agricultural lands	Occurs. Observed nesting in the southwestern corner of the project area (2007).
Ferruginous hawk <i>Buteo regalis</i>	-	CSC	-	Grasslands, agricultural lands	Likely - winter only.
Northern harrier <i>Circus cyaneus</i>	-	CSC	-	Grasslands, seasonal wetlands, agricultural lands	Occurs. Observed foraging in the study area (2007).
Snowy egret (rookery) <i>Egretta thula</i>	-	*	-	Colonial nester in dense tules.	Unlikely. Marginal rookery habitat occurs in the study area.
White-tailed kite <i>Elanus leucurus</i>	-	CFP	-	Open grassland, meadows, and farmlands. Nests in tall trees near foraging areas.	Occurs. Possible nest observed in the southwestern corner of the project area (2007).
Greater sandhill crane <i>Grus canadensis tabida</i>	FT	-	-	Seasonal wetlands, irrigated pastures, alfalfa and corn fields	Unlikely. Marginally suitable habitat in the study area.
Loggerhead shrike <i>Lanius ludovicianus</i>	-	CSC	-	Grasslands, pastures, agricultural lands	Occurs. Observed foraging in the study area (2007).
California black rail <i>Laterallus jamaicensis</i>	-	T	-	Shallow, perennial freshwater marshes	Unlikely in the project area. Habitat exists along Curry Creek, but few recent regional occurrences. No potential for occurrence in Urban Reserve.
Long-billed curlew <i>Numenius americanus</i>	-	-	-	Winter foraging and roosting habitat consists of pasturelands, seasonal wetlands, and some cultivated lands	Likely for wintering foraging and roosting.

Habitat for Henderson's bent grass occurs within the vernal pools in study area; however, it was not observed during surveys by ECORP or NFA in 2006 or 2007.

Big-scale balsam-root (*Balsamorhiza macrolepsis* subsp. *macrolepsis*) is a non-wetland, oak woodland, and grassland species considered by the California Native Plant Society (CNPS) as a List 1B.2 species, which means "plants rare, threatened, or endangered in California and elsewhere." However, the species is not listed by either the state or federal governments. It has been recorded within two miles of the study area. It blooms from March to June. Due to the disturbance (e.g., regular disking, seeding with wheat, intensive grazing), this species has a low potential to occur within the study area.

Big-scale balsam-root was not observed during surveys by ECORP or NFA in 2006 and 2007.

Dwarf downingia (*Downingia pusilla*) is a small annual member of the bellflower family (Campanulaceae). It has no state or federal status. The CNPS places the dwarf downingia on their List 2.2, meaning that, although it is rare in California, it is more widespread elsewhere. Dwarf downingia also occurs in Chile where the type specimen was collected. Dwarf downingia is distinguished from other members of the genus by having very small, white flowers that are not upside down at blooming time. The species is an obligate wetland plant that occurs primarily in vernal pools. It blooms from March to May.

Dwarf downingia was observed and populations were mapped by ECORP in 2006 (ECORP 2006c). These populations of dwarf downingia were also observed by NFA during field surveys in April 2007. Dwarf downingia occurs at several locations throughout the study area, in both the project area and Urban Reserve. It was observed in vernal pools and swales within the northern portion of the study area (Urban Reserve) and within the intermittent tributary and nearby vernal pools in the central portion of the study area (project area). ECORP mapped 0.29 acres of dwarf downingia in the project area and xxx acres within the Urban Reserve. The locations of dwarf downingia represent some of the most disturbed and least disturbed areas of the study area. Within the pools and swales in the north, dwarf downingia is located within regularly disked pools and swales and, along with some other vernal pool flora (such as bractless hedge-hyssop and stipitate popcornflower), is growing with cultivated wheat (Figure 5b). In the intermittent drainage and vernal pools in the central portion of the study area (which appear not to have been disked in recent years), dwarf downingia is associated with a diversity of vernal pool vegetation such as stipitate popcornflower, Fremont's goldfields, double-horned and Solano downingia, Vasey's coyote-thistle, vernal pool buttercup, Pacific foxtail, and annual hairgrass.

Bogg's Lake hedge-hyssop (*Gratiola heterosepala*) is a small annual member of the figwort family (Scrophulariaceae). It is given endangered status by the state Endangered Species Act, although it has no federal status. The CNPS places it on its List 1B.2. It differs from the common *G. ebracteata* by having blunt tips on the leaves and sepals, which are smaller and of different lengths. It is restricted to deep vernal pools in northern California. It blooms from April to June, usually as the pools begin to dry. It is possible for this species to occur within the few deeper vernal pools within the study area.

Bogg's Lake hedge-hyssop was not observed by ECORP or NFA. Only the common *Gratiola ebracteata* was observed during the 2006 and 2007 surveys.

Rose mallow (*Hibiscus lasiocarpus*) is a clonal perennial member of the mallow family (Malvaceae) that can grow to three to six feet tall. It has no state or federal status. The CNPS

puts rose mallow on its List 2.2, meaning that it is rare in California but more common elsewhere. This species is an obligate wetland plant that is found along rivers and sloughs in the Delta and Central Valley. However, it has also been found in a drainage ditch near Interstate 80 (ECORP 2006c). Rose mallow has large white flowers and blooms in August and September.

Marginal habitat for rose mallow occurs in the study area; however, it was not observed by ECORP or NFA during the 2006 or 2007 surveys.

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) and **Red Bluff dwarf rush** (*Juncus leiospermus* var. *leiospermus*) are very small annual members of the rush family (Juncaceae). They have no state status, but are both on the CNPS List 1B. They differ from the more common toad rush by having terminal flowers and from the introduced capped rush by having inconspicuous bracts. Ahart's dwarf rush grows in vernal pools along the east side of the Central Valley from Butte County to Calaveras County. Red Bluff dwarf rush grows in a variety of habitats that are seasonally wet. They both bloom from March to May. Suitable habitat is present within the study area for both species; however, it is unlikely that Red Bluff dwarf rush would occur within the study area because the typical reported range of the species is within Butte, Shasta, and Tehama counties and the nearest reported occurrence is thought to be a misidentification (CDFG 2007).

Ahart's dwarf rush and Red Bluff dwarf rush were not found during surveys during 2006 and 2007, although two widespread and common annual members of the genus *Juncus* were observed.

Legenere (*Legenere limosa*) is small annual member of the bellflower family (Campanulaceae). It is a CNPS List 1B.1 species. The genus name is an anagram of E.L. Greene, one of California's early botanists. It is the only species in the genus and has small, inconspicuous flowers that have pedicels rather than being sessile. Legenere prefers the drying mud of late season vernal pools and it blooms from April to June. It has also been found in vernal pools in the Pleasant Grove Creek watershed to the north and southeast of the study area and could occur in the vernal pools within the study area.

ECORP and NFA did not observe legenere during the 2006 and 2007 surveys.

Pincushion navarretia (*Navarretia myersii* subsp. *myersii*) is an annual member of the phlox family (Polemoniaceae). It is on the CNPS List 1B.1, but has no state or federal status. Pincushion navarretia differs, in part, from the more common *N. leucocephala* by its larger flowers. It is confined to vernal pools at a relatively few locations in the eastern Central Valley. It generally blooms in May. It is possible for this species to occur within the vernal pools in the study area.

Pincushion navarretia was not found during the 2006 and 2007 field surveys. *Navarretia intertexta* and *N. leucocephala*, both wetland species, were observed in the study area.

Slender Orcutt grass (*Orcuttia tenuis*) is an annual member of the grass family (Poaceae). It is a threatened federal species and an endangered state species. It is also on the CNPS List 1B.1. Slender Orcutt grass differs from other members of the genus by a number of technical characteristics. This species' distribution is predominately in more northern California (Tehama, Shasta, Lassen, and Modoc Counties), but it also occurs in neighboring Sacramento County, where it prefers large, deep pools. This species is not currently known to occur in

Placer County. The nearest record of Slender Orcutt grass is located in Sacramento County (CDFG 2007). Marginal habitat occurs in the vernal pools within the study area; slender Orcutt grass prefers larger, deeper vernal pools than those that occur within the study area. It is highly unlikely that this species would occur within the study area.

Slender Orcutt grass was not observed during the field surveys in 2006 or 2007.

Sacramento Valley Orcutt grass (*Orcuttia viscida*) is an annual member of the grass family (Poaceae). It is a federal endangered species and is a California endangered species. It is on the CNPS List 1B.1. Technical characteristics, such as longer lemma awns, separate this species from other members of the genus. It prefers large, deep vernal pools, and is known to occur only in Sacramento County. Sacramento Valley Orcutt grass blooms late, typically from May to July. This species is not currently known to occur in Placer County; the nearest record of Sacramento Valley Orcutt grass is located in Folsom (CDFG 2007). Very marginal habitat (this species prefers larger, deeper pools) occurs within the study area. It is highly unlikely that this species would occur within the study area.

Sacramento Valley Orcutt grass was not observed during the field surveys in 2006 or 2007.

Sanford's arrowhead (*Sagittaria sanfordii*) is an herbaceous perennial member of the waterplantain family (Alismataceae). It is on the CNPS List 1B.2. Sanford's arrowhead lacks the arrow shaped (sagittate) leaves of other members of the genus. It has sharply triangular petioles (leaf stems) that distinguish it in the vegetative state from *Alisma*, in which the back of the petioles are rounded. Its preferred habitat is marshes associated with slow-moving water in sloughs and ditches. It is known to occur in concrete-lined channels with only a few inches of soil. It has a long blooming period, starting as early as May and sometimes lasting until August. It is possible for this species to occur within the drainages and marshes in the study area.

Sanford's arrowhead was not observed during the 2006 and 2007 field surveys. Members of the similar genus *Alisma* were observed in 2006 and 2007.

Wildlife

Aquatic Invertebrates

Three special status invertebrates potentially occur in seasonal wetland habitats in the study area, including vernal pool tadpole shrimp (*Lepidurus packardii*) and Conservancy fairy shrimp (*Branchinecta conservatio*), both federally listed endangered species, and vernal pool fairy shrimp (*Branchinecta lynchi*), a federally listed threatened species. Each of these species occurs in vernal pools and other seasonal wetland habitats throughout the Central Valley and is known to occur or potentially occurs in western Placer County. There are numerous records of vernal pool fairy shrimp from western Placer County; however, while the species has been documented, there are few records of vernal pool tadpole shrimp in western Placer County. The Conservancy fairy shrimp was recently detected in western Placer County (USFWS 2007), which has resulted in a range expansion for this species that includes the study area. As a result of the substantial loss of vernal pool habitats in the Central Valley from urbanization and agricultural conversion, populations of these species have declined throughout their range (USFWS 1994).

Collectively, these species occur within a range of specific environmental conditions that include soil type, vegetation characteristics, water depth, water temperature, inundation duration, and water quality. Emergence of adult animals is also dependent on these and other

environmental factors (USFWS 1994). Detection of these species can be difficult and inconclusive in the absence of multi-seasonal survey efforts. Therefore, in general, vernal pool and seasonal wetland habitats that meet the general definition of habitat suitability are considered potentially occupied by these species. To confirm absence of these species requires adherence to standard U.S. Fish and Wildlife Service two-year survey protocol (USFWS 1995).

ECORP completed the second year of the two-wet season protocol for special-status invertebrates in 2006-2007. Using the standard survey protocol (USFWS 1995), surveys were conducted to determine the presence or absence of vernal pool fairy shrimp, vernal pool tadpole shrimp, and Conservancy fairy shrimp. Results of the 2005-2006 surveys are presented in the 90-day Report of Findings dated September 25, 2006 (ECORP 2006a). Results of the 2006-2007 surveys are presented in the 90-day Report of Findings dated October 19, 2007 (ECORP 2007g).

Of the 432 pools sampled during the 2005-2006 season (ECORP 2006a) that were initially considered as having potential to support federally listed branchiopods, four (in three separate defined watersheds) were found to be occupied by the federally threatened vernal pool fairy shrimp. During 2006-2007 surveys (ECORP 2007g) vernal pool fairy shrimp were found in two additional locations, for a total of five watersheds within the study area. Two of the watersheds occur entirely within the Urban Reserve and one watershed occurs entirely within the project area. The remaining two watersheds occur both in the project area and in the Urban Reserve. These occupied watersheds encompass 4.216 acres of vernal pool fairy shrimp habitat in the project area and 3.826 acres of habitat in the Urban Reserve.

Neither the vernal pool tadpole shrimp nor the Conservancy fairy shrimp were detected during these surveys. Each species has a very restricted known distribution in western Placer County compared with the vernal pool fairy shrimp. Thus, while these species could potentially occur, they are considered unlikely to occur in the project area.

Valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) is a federally-listed threatened species. VELB is a medium-sized wood boring beetle, about 0.8 inch long.

VELB is endemic to California's Central Valley and watersheds that drain into the Central Valley (Barr 1991). Its presence is entirely dependent on the presence of its host plant, the elderberry shrub (*Sambucus* spp.).

VELB is a specialized herbivore that feeds exclusively on elderberry shrubs, the adults feeding on leaves and flowers, and the larvae on the stem pith. Habitat for VELB consists of elderberry shrubs with stems greater than 1 inch in basal diameter. Elderberry grows in upland riparian forests or savannas adjacent to riparian vegetation, but also occurs in oak woodlands and savannas and in disturbed areas. It usually co-occurs with other woody riparian plants, including Fremont cottonwood, California sycamore, various willows, California grape, blackberry, and poison-oak (U.S. Fish and Wildlife Service 1984, Collinge et al. 2001). No elderberry shrubs were observed in the study area; therefore, no habitat for VELB is present and there is no potential for the species to occur.

Salmonids, such as Central Valley spring and winter-run Chinook salmon and steelhead, are not anticipated to occur within Curry Creek (NMFS 2007). The portion of Curry Creek located within the study area is therefore expected to support only resident cold- and warm-water fish species. Curry Creek drains into the northern part of the East Main Drain, which flows into the Cross Canal and then into the Sacramento River. Although there is a connection to the Sacramento River, the East Main Drain is an "impaired" waterway and has significant water

Western spadefoot (*Spea hammondi*) is designated a state species of special concern. The western spadefoot is a near endemic to California and occurs throughout the Central Valley and adjacent foothills from near Redding, Shasta County, south to northwestern Baja California, Mexico. Elevation occurrences extend from sea level up to 4,500 feet (Jennings and Hayes 1994).

Western spadefoot requires temporary rainpools (e.g., vernal pools) in which to breed, and in order to metamorphose successfully, rainpools must remain inundated for more than three weeks (Jennings and Hayes 1994). Most known occurrences in the Central Valley are in grassland habitats, but they have also been found in valley-foothill hardwood woodlands.

Most of the western spadefoot's life is spent in underground burrows. They will use burrows created by small mammals or excavate their own using the distinctive, cornified, tear-shaped spade on each hindfoot. Western spadefoot is almost completely terrestrial and only enters the water to breed. Breeding and egg laying occurs in late winter and early spring. Recently metamorphosed juveniles will hide in drying mud cracks, under boards, and even decomposing cow dung that are located in the vicinity of breeding ponds. Tadpoles consume planktonic organisms, algae, and dead amphibian larvae. Adults prey on insects, worms, and other invertebrates. Predators include various fishes, bullfrogs, crayfish, California tiger salamanders, garter snakes, herons, and raccoons (Jennings and Hayes 1994).

ECORP (2006d) indicates that there are four occurrences within 5 miles of the study area, all are records from CNDDDB. All of these sites are likely either extirpated or threatened due to past and ongoing urbanization in the Roseville area. In general, the study area and surrounding open vernal pool grasslands support suitable habitat for spadefoot. However, surveys conducted by ECORP in 2006 and 2007 specifically for spadefoot in non-vernal pool/seasonal wetland aquatic habitats and incidentally in vernal pools/seasonal wetlands during surveys for listed branchiopods did not result in any detections in the study area. However, surveys conducted in 2007 on the Chan property (southern "leg" of Urban Reserve) and Baybrook property (southwestern corner of project area) are considered incomplete due to lack of rainfall and inundation of vernal pool habitats.

Giant garter snake (*Thamnophis gigas*) is a state and federally listed threatened species. Giant garter snake is an aquatic species endemic to the Central Valley. Loss or degradation of aquatic habitat resulting from agricultural and urban development has caused dramatic population declines and has resulted in the recognition of only 13 extant populations between Butte County and Fresno County (USFWS 1999). The Natomas Basin population, approximately 5 miles west of the study area, is the nearest of these to the study area.

Described as among California's most aquatic garter snakes, giant garter snakes are associated with low-gradient streams and valley floor wetlands and marshes, and have adapted successfully to rice agriculture (Hansen 2002). Giant garter snakes occur in sloughs, creeks, and other watercourses including agricultural ditches that support sufficient water, aquatic prey, and emergent vegetation for basking sites. They generally are found in more open habitats and do not typically occur along watercourses that support dense riparian cover. Aquatic habitats are characterized by sufficient water during the snake's active season to supply cover and food such as small fish and amphibians; emergent herbaceous wetland vegetation such as cattails and bulrushes for basking, foraging, and escape cover; upland habitat (e.g., bankside burrows, holes, and crevices) for short-term refugia; and high ground upland habitat for cover and refugia during the dormant winter period (Hansen and Brode 1980).

quality issues. The East Main Drain, however, provides a migratory route to Dry Creek which supports marginal salmonid habitat (NMFS 2007).

California tiger salamander (*Ambystoma californiense*) is a federally threatened species and a state species of special concern. It is a large, stocky, terrestrial salamander with a broad, rounded snout. Adults are from 7 to 8 inches in length with white or pale yellow spots or bars on a black background on the back and sides. The belly varies from almost uniform white or pale yellow to a variegated pattern of white or pale yellow and black (USFWS 2005a).

This species is restricted to California and does not overlap with any other species of tiger salamander. California tiger salamanders are restricted to vernal pools and seasonal ponds, including many constructed stockponds, in grassland and oak savannah plant communities from sea level to about 1,500 feet in central California (USFWS 2005a).

No specific surveys were conducted for California tiger salamander, but the species was not detected during extensive vernal pool and seasonal wetland surveys for listed branchiopods and western spadefoot. Thus, it is unlikely that the species occurs in the study area.

California red-legged frog (*Rana aurora draytonii*) is a federally listed threatened species and is designated as a state species of special concern. Its dorsal coloration is brown to reddish brown with small black flecks and larger dark blotches. The posterior abdomen and hind legs of adults are largely red or salmon pink colored (U.S. Fish and Wildlife Service 2002).

The California red-legged frog was once common in the Coast Ranges of California from Redding south to Baja California and in the northern Sierra Nevada. Its current range is much reduced, with most of the remaining populations occurring in the Coast Ranges from Marin County south to Ventura County. The USFWS generally considers the species extirpated from the Central Valley floor. Only one extant population was reported by Jennings and Hayes (1994) from the Sierra Nevada in northeastern Butte County; however, six small and isolated Sierra Nevada populations have recently been reported from the Sierra Nevada and are presumed extant, including one from Placer County at Michigan Bluff. All of these sites are a considerable distance from the project area, at higher elevations and in a different vegetation community. The nearest of these is the Michigan Bluff site, which is more than 35 miles from the study area. The California red-legged frog occurs in a variety of habitats that contain the required elements of aquatic habitat and upland/dispersal habitat. Breeding habitat can be found in pools of streams and creeks, ponds, marshes, springs, sag ponds, and artificial stock ponds (USFWS 2002). Juvenile frogs seem to favor open, shallow aquatic habitats with dense subemergent vegetation (Jennings and Hayes 1994). During periods when aquatic habitat is not available, red-legged frogs will disperse from their breeding habitat and seek upland refugia under boulders or rocks, under fallen leaves and branches, and small mammal burrows (USFWS 2002). Introduced bullfrogs, crayfish, and fishes (especially bass, sunfish, and mosquito fish) prey on various stages of red-legged frogs (USFWS 2002).

Curry Creek, in the project area, represents the only potentially suitable habitat in the study area. Surveys for California red-legged frog using the standard USFWS protocol (USFWS 2005b) were not conducted; however, the species was not detected during general wildlife surveys along Curry Creek and bullfrogs were detected in most aquatic habitats in the study area including Curry Creek. It is highly unlikely that California red-legged frog would occur within the project area. There is no potential for occurrence of California red-legged frog within the Urban Reserve.

fields (100+ acres), flooded with several inches of standing or slowly moving water, and with relatively low relief shorelines (Pogsdon and Lindstedt 1988). Most roost sites in the Central Valley are on private duck clubs; however, in recent years the CDFG and conservation organizations such as The Nature Conservancy have acquired and protected important roost areas within the wintering range.

Foraging habitat includes harvested fields, irrigated pastures, alfalfa fields, and seasonally flooded habitats. The primary source of carbohydrates in the Delta and Cosumnes regions is waste corn. Cranes also forage on wheat sprouts in newly planted winter wheat fields and on sprouts, shoots, tubers, invertebrates, and seeds in fallow fields and in uncultivated habitats (field borders, levees, and canal and irrigation ditch banks) (Pogsdon and Lindstedt 1988). The potential for occurrence in the study area is considered to be low.

Northern harrier (*Circus cyaneus*) is designated as a state species of special concern. It is a medium-sized hawk with a slight build and relatively long tail and wings (3.5 foot wingspan). Adult males are pale gray, while juveniles and females are brown. All plumages show a distinctive white rump patch in flight (Sibley 2003).

In California, this species is a permanent resident of the northeastern plateau, coastal areas, and the Central Valley. It is also a widespread winter visitor and migrant in suitable habitat. While declines in the California population have been noted for many years (Grinnell and Miller 1944, Rensen 1978), the species can be locally abundant where suitable habitat remains free of disturbance, especially from intensive agriculture. Breeding populations have declined from destruction of wetland habitats, native grasslands, and moist meadows, and in agricultural areas from burning and plowing of nest sites during early stages of the breeding cycle (Rensen 1978).

Throughout its range, northern harriers occur primarily in open wetland, grassland, and agricultural habitats. The northern harrier is a ground-nesting raptor, constructing rudimentary nest sites on the ground in marsh, grassland, and some agricultural habitats, particularly grain fields. They forage in seasonal wetland, grassland, and agricultural habitats for voles and other small mammals, birds, frogs, and small reptiles, crustaceans, and insects. They also roost on the ground, using tall grasses and forbs in wetlands, or along wetland/field borders for cover.

Several adult northern harriers were observed foraging in the study area during the survey. The cattail marsh and associated seasonal wetland habitats along Curry Creek, particularly in the eastern portion of the study area, provide suitable nesting habitat for this species. However, while northern harrier nests are sometimes difficult to detect because they are often concealed in dense vegetation, no defensive or nest-attentiveness behavior was noted that would suggest a possible active breeding site.

White-tailed kite (*Elanus leucurus*) is designated as a state species of special concern and a state fully protected species. The white-tailed kite is a highly specialized and distinctively marked bird of prey; smaller than most hawks with a wingspan of just over three feet, white underneath and light gray above, black shoulder patches, and white tail (Dunk 1995). The species name is derived from its distinctive hunting behavior, kiting, and hovering in the air while hunting for prey.

The white-tailed kite is known primarily from the Central Valley and coastal areas of California; however, breeding has also been documented in parts of Oregon and Washington, southern Texas, Florida, and south from northern Mexico to South America.

The study area is within the range of the giant garter snake, and while it is not within the boundaries of one of the 13 extant populations, its proximity to the Natomas Basin and the hydrological connectivity to the Natomas Basin via Curry Creek create the possibility for occurrence. Portions of Curry Creek, within the project area, support at least marginally suitable habitat for giant garter snake with perennial flow, steep-sided banks, and emergent wetlands. The creek also supports small fish and amphibian prey and the adjacent grassland uplands are suitable as hibernaculae and cover habitat during the inactive season. Thus, while occurrence is unlikely due to the lack of records and marginal habitat conditions, there remains some potential for occurrence in the project area.

Western pond turtle (*Clemmys marmorata*) is designated as a state species of special concern. The western pond turtle is a moderate-sized turtle with drab brown coloring. The carapace lacks any prominent markings (Holland 1991). There are two recognized subspecies, the northwestern pond turtle and the southwestern pond turtle. Placer County lies within a diffuse intergrade of both subspecies. In California, the western pond turtle is distributed throughout the state from sea level to mid-elevation Sierra Nevada (Jennings and Hayes 1994).

Western pond turtles are closely associated with permanent water bodies, such as lakes, ponds, slow-moving streams, and irrigation canals that include basking sites as down logs or rocks, and that support sufficient aquatic prey. Western pond turtles also require upland habitat that is suitable for building nests, to aestivate and to overwinter. Suitable upland habitat must have the proper thermal and hydric conditions in which to build nests (Jennings and Hayes 1994). Nests are constructed in sandy banks immediately adjacent to aquatic habitat or if necessary, females will climb hillsides and sometimes move considerable distances to find suitable nest sites. Females deposit their eggs in the nest from March to August, depending on local conditions.

Western pond turtles are omnivorous and opportunistic feeders. Their diet includes slow-moving aquatic invertebrates and carrion. Aquatic vegetation may also be consumed, especially by females who have recently laid eggs. Hatchlings and juveniles feed primarily on zooplankton (Jennings and Hayes 1994).

No pond turtles were observed during the field surveys; however, the stock ponds and portions of Curry Creek and its associated wetland and upland habitats may provide at least marginally suitable habitat for this species in the project area. The ponds and Curry Creek do not occur in the Urban Reserve; therefore, there is no potential for occurrence in the Urban Reserve.

Greater sandhill crane (*Grus canadensis tabida*) is a state-listed threatened species. The greater sandhill crane is the largest of six recognized subspecies of sandhill crane (Littlefield and Ivey 2000), standing nearly four feet tall and with a nearly seven-foot wingspan (Sibley 2000). The Central Valley population of greater sandhill crane breeds from northern California to British Columbia and winters in the Central Valley. Portions of the Sacramento-San Joaquin Delta and the Cosumnes River basin are the principal wintering grounds of this population. Thus, while the species does not breed in the Central Valley, maintaining suitable roosting and foraging habitat within its wintering range is critical to sustaining this population.

Both roosting and foraging habitat are essential to the Central Valley population during winter. Greater sandhill cranes congregate in communal roosts at night and fly off each morning to forage in suitable fields, pastures, or other shallow wetland habitats. Most traditional foraging areas are near communal roost sites (within 2-3 miles). Communal roost sites are typically large

In the Central Valley, white-tailed kites nest in riparian forests and woodlands, woodlots, and occasionally in isolated trees. They forage in grasslands, seasonal wetlands, and agricultural fields. Like most raptors, its distribution is determined more by prey abundance and vegetation structure than by specific plant associations. They appear to be more sensitive to intensive farming practices and while they are found in agricultural areas, populations have likely declined as a result of conversion from native grassland and seasonal wetland habitats to agriculture. White-tailed kites prey mainly on small rodents, especially California vole, but also take small birds, reptiles, and insects.

A possible white-tailed kite nest was found in a locust tree along Curry Creek in the southwestern corner of the project area (Figure 3). An adult kite was present and exhibiting defensive behavior; however, the nest was positioned such that no activity could be discerned. Due to the presence of the kite and its behavior, nesting activity is highly probable in the study area. Virtually the entire study area is also considered suitable foraging habitat for white-tailed kite.

Swainson's hawk is a state-listed threatened species. It is a medium-sized hawk with long (3.5 to 4 feet) narrow wings, dark breast and head, and with several distinctive plumage variations on the underwing coverts and belly (England et al. 1997).

Swainson's hawk is an open country species found throughout the plains and deserts of the western United States. Associated primarily with open grassland habitats, throughout much of its range it is currently known to also occur in agricultural habitats, which has displaced much of the grassland habitat throughout North America. Formerly occurring throughout the lowland areas of California, as a result of habitat loss and conversion to agriculture, populations are now restricted to the Central Valley and Great Basin portions of the state.

In the Central Valley, Swainson's hawks nest in riparian forests, remnant oak woodlands, isolated trees, and roadside trees. They forage primarily in agricultural habitats, particularly those that optimize availability of prey (e.g., alfalfa and other hay crops, some row and grain crops), but also use irrigated pastures and annual grasslands. The principal prey item of Swainson's hawks in the Central Valley is the California vole, but other small mammals, birds, reptiles, and insects are also taken (Estep 1989, England et al. 1995).

The study area is near the eastern edge of the Swainson's hawk range in the Central Valley. The open grasslands provide suitable foraging habitat for this species. Potential nesting trees are limited in the study area and throughout the general area; however, the scattered valley oak, cottonwood, willow, and eucalyptus trees provide suitable nesting opportunities.

One Swainson's hawk nest was found in the southwestern corner of the project area during surveys in April 2007. It is located in a eucalyptus tree on the north side of the farmstead (Figure 3). California Natural Diversity Database (CNDDDB) and CDFG (unpublished surveys from 2002-2003) report additional occurrences in the general vicinity of the study area. Numerous nest sites are known to occur in the cultivated landscape west of the study area. The entire study area and surrounding open grasslands are considered suitable foraging habitat for Swainson's hawk.

Ferruginous hawk (*Buteo regalis*) is designated as a state species of special concern. It is the largest North American hawk with a wingspan of 4.5 feet, distinctive reddish shoulder patches, and feathered legs. There are two distinct plumage morphs, light and dark (Bechard and Schmutz 1995).

Ferruginous hawk is an open-country species inhabiting grasslands, shrub steppes, and deserts of North America, where it hunts for rabbits, ground squirrels, and prairie dogs. The ferruginous hawk does not breed in California, with the exception of occasional nesting reports from extreme northeastern California. However, individuals migrate into California during the winter season where they rely on open grassland and agricultural areas for foraging and roosting. Wintering populations in the Central Valley vary year to year depending on a variety of environmental factors. They apparently do not occupy traditional wintering areas, but instead occur incidentally and probably remain somewhat nomadic during the winter. During the winter in the Central Valley, ferruginous hawks forage on a variety of mammal prey, including rabbits, ground squirrels, and meadow voles and other small rodents. They roost in trees or on utility poles.

This species is a regular winter visitor throughout the Sacramento Valley, particularly in grassland habitats. It is nomadic during the winter and because it does not breed in California, is rarely reported to the CNDDDB. The study area supports suitable grassland wintering habitat for this species. While the species is probably only an occasional visitor, its potential for occurrence in the study area during the winter is high.

California black rail (*Laterallus jamaicensis*) is a state-listed threatened species. Until recently, this species' current range was thought to be restricted mainly to coastal marshes. However, in the early 1990's the species was detected in freshwater marshes in Yuba County (Aigner et al. 1995). Subsequent survey work has expanded the range to include a large area along the eastern edge of the Sacramento Valley and up to the lower foothills of the Sierra Nevada.

California black rails inhabit saltwater, brackish, and freshwater marshes. Freshwater marshes (also characterized as palustrine emergent persistent wetlands [The Black Rail Project 2006]) are typically dominated by bulrushes (*Scirpus* spp.) and cattails (*Typha* spp.). These sites are very shallow (usually less than 3 cm) but require a perennial water source. A relatively narrow range of conditions is required for occupancy and successful breeding. Too much water will prevent nesting and too little water will lead to abandonment of the site until the water source is reestablished.

California black rail was recently detected in Clover Valley (City of Rocklin) in southern Placer County (The Black Rail Project 2006). Because of its continuing range expansion, it is included in this biological report as a species having the potential to occur in the emergent marsh habitat along Curry Creek in the project area. However, as noted the species occurs under a fairly narrow range of habitat and environmental conditions. Whether the emergent marsh habitat on the site meets these requirements is unknown because focused surveys for this species have not been conducted on the site. There is no potential for occurrence in the Urban Reserve.

Long-billed curlew (*Numenius americanus*) until recently was designated as a state species of special concern. It is not included on the recent revision of this list (Shuford and Gardali 2008). This relatively large shorebird with characteristically long decurved bill occurs in the Central Valley only during the winter. During winter, the species roosts and forages in pasturelands, grasslands, and some agricultural habitats throughout the Central Valley.

While none were reported during surveys, the long-billed curlew likely occasionally occurs in the plan area during the winter. The open grazed grasslands are suitable foraging and roosting habitat for this species, which is fairly wide-ranging during the winter season.

Western burrowing owl (*Athene cunicularia*) is designated as a state species of special concern. Burrowing owl is a small ground-dwelling owl with a round head, yellow eyes, and long legs (Haug et al. 1993).

Burrowing owl occurs throughout most of the western United States and northern Mexico. They also occur in southern Florida and on some Caribbean islands (Haug et al. 1993). In California, burrowing owls occur in open habitats throughout most of the state with the exception of the northwestern corner. Burrowing owls are found in open, dry grasslands, agricultural and range lands, and desert habitats. In the Central Valley, they are associated with remaining grassland habitats, pasturelands, and edges of agricultural fields. They also occur in vacant lots within urbanizing areas, such as in south Sacramento and south Stockton. While they historically nesting in colonies, due to limited nesting habitat availability, many of the more recent occurrences are individual nesting pairs or several loosely associated nesting pairs.

Burrowing owl is a subterranean-nesting species, typically occupying the burrows created by California ground squirrels. They also occupy artificial habitats, such as those created by rock piles and, occasionally, open pipes and small culverts. They forage for small rodents and insects in grassland and agricultural habitats with low vegetative height.

No burrowing owls or active burrowing owl burrows were detected during the field survey. ECORP (2006b) recorded a detection of a burrowing owl occupying a debris pile in the project area during October 2005. The same burrowing owl was detected on several occasions by ECORP staff during the winter of 2005; however, it was not observed during subsequent surveys by ECORP in 2006. The nearest recorded burrowing owl site is approximately 1 mile north of the study area and has presumably been eliminated as a result of the development of the West Roseville Specific Plan.

An evaluation of burrowing owl habitat in the study area during the April 2007 field survey indicated that there is relatively little ground squirrel activity and thus few potential nesting opportunities for burrowing owl. This is likely due to past and/or ongoing ground squirrel control measures, common in cattle grazing areas. The entire study area is otherwise considered suitable for burrowing owls and is likely occasionally used for foraging.

Tricolored blackbird (*Agelaius tricolor*) is a state species of special concern. Tricolored blackbirds are small blackbirds, very similar in appearance to the closely related red-winged blackbird. They differ from species by the slightly thinner bill, darker red shoulder patches, and broad white (not yellow) median coverts (Sibley 2000).

Tricolored blackbirds are largely endemic to California, and more than 99% of the global population occurs in the state. In any given year, more than 75% of the breeding population can be found in the Central Valley. Small breeding populations also exist at scattered sites in Oregon, Washington, Nevada, and western coastal Baja California (Beedy and Hamilton 1999). This species has suffered dramatic population declines throughout its range due to the loss of protected wetland nesting habitats.

Tricolored blackbirds breed in colonies from several dozen to several thousand breeding pairs. They have three basic requirements for selecting their breeding colony sites: open accessible water; a protected nesting substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony (Beedy and Hamilton 1999).

Nesting colonies have been reported in freshwater marshes dominated by cattails and bulrushes, or in willows, blackberry bramble, thistles, or nettles. While freshwater marsh was once considered the primary breeding habitat type for tricolored blackbirds, an increasing percentage of tricolored blackbird colonies in the 1980s and 1990s were reported in Himalayan blackberries, and some of the largest recent colonies have been in silage and grain fields (Beedy and Hamilton 1999).

Foraging habitats in all seasons include annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (e.g., large tracts of alfalfa with continuous mowing schedules and recently tilled fields), cattle feedlots, and dairies. Tricolored blackbirds also forage occasionally in riparian scrub habitats and along marsh borders (Beedy and Hamilton 1999).

Tricolored blackbird was not observed during the field survey. However, the cattail marsh along Curry Creek in the southeastern portion of the project area provides potential nesting habitat for this species and the surrounding grasslands provide suitable foraging habitat. During the field survey, a breeding colony of red-winged blackbirds extended the length of the cattail marsh along Curry Creek between Fiddymont Road and Baseline Road. Few historic records of tricolored blackbird nesting colonies are available for Placer County. Beedy et al. (1991) report only three historic colonies from Placer County, all near Lincoln. All are considered extirpated. Humple and Churchwell (2002) report no breeding activity in Placer County during the 2001 statewide survey; however, they report relatively large groups of non-breeding birds at two sites in the county. However, a currently undocumented breeding colony in Lincoln was recently observed.

Loggerhead shrike (*Lanius ludovicianus*) is designated as a state species of special concern. Loggerhead shrike is a permanent resident and winter visitor in foothills and lowlands throughout California, where it is considered a fairly common resident (Small 1994). It is a medium-sized (9 inches), stout, short-winged passerine that is often seen perched on barbed wire fences. The underparts and back are grey, with black tail, wings, and facemask (Sibley 2000).

Shrikes prefer open habitats with scattered trees, shrubs, posts, fences, utility lines, or other perches. It nests in small trees and shrubs and forages for small rodents and insects in pastures and agricultural lands.

One loggerhead shrike was observed during the field survey in April 2007 however, no nests were located. While the entire study area is suitable foraging habitat shrikes, nesting habitat (e.g., shrubs and small trees) are limited.

Heron/Egret Rookeries

Rookeries are colonial nesting sites for several heron and egret species, including great blue heron (*Ardea herodias*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), and black-crowned night heron (*Nycticorax nycticorax*). While these species are not considered special status species, heron and egret rookeries are included on the CDFG special animals list because these breeding colonies can support the reproductive potential of a large segment of a local population. They are thus considered unique and important biological sites.

There are currently no rookeries for any of these species in the study area. The eucalyptus groves may provide potential rookery sites for all of these species, and the cattail marsh

associated with Curry Creek may provide potential breeding habitat for black-crowned night heron and snowy egret. However, these species typically nest in association with marshes, seasonal wetlands, irrigated pastureland, or irrigated cropland that provide a greater source of food than do the un-irrigated pasturelands on and around the study area. Thus, while it is possible that these species may nest onsite, it is considered unlikely.

Special Status Bats

Three special status bats potentially occur in the study area, including pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii townsendii*), and Yuma myotis (*Myotis yumanensis*), which are all state species of special concern. Pallid bat occurs primarily in shrublands, woodlands, and forested habitats, but also can occur in grasslands. Townsends's big-eared bat occurs in a variety of woodland and open habitats, and Yuma myotis occurs primarily in forests and woodlands. All three species roost in mines, caves, rocky crevices, large hollow trees, and occasionally in large open buildings that are usually abandoned or infrequently inhabited.

ASSESSMENT OF IMPACTS AND MITIGATION

The following provides an assessment of impacts to various habitats, waters of the United States, nesting raptors, and special status species. Mitigation alternatives are also discussed. The impacts are based on the proposed Sierra Vista land use plan (Figure 6). In the project area, impacts are assumed for all areas except within the open space areas (an exception is impacts to fairy shrimp, discussed below). In the Urban Reserve, offsite impacts are calculated for Road B and West Side Drive and a 25-foot impact buffer from the project area based on actual grading encroachments. Unless otherwise stated, the following impact discussion and mitigation alternatives are applicable to both the project area and the Urban Reserve.

Annual Grassland/Vernal Pool Grassland

The removal of annual grasslands and vernal pool grassland habitat will constitute a fairly substantial reduction of habitat for many wildlife species that are dependent on these habitats. Due to the size of the study area (approximately 2,000 acres), the study area represents a large proportion of the local landscape that could affect a large segment of a variety of local wildlife populations. Thus, this could be considered significant under the California Environmental Quality Act (CEQA) pursuant to Section 15065 (Mandatory Findings of Significance) (e.g., substantially reduce the habitat of a fish or wildlife species).

Several mitigation options may be available to address this impact, including:

- Retain some portion of the affected landscape as an onsite preserve.
- Implement required mitigation for other impacts, such as loss of Swainson's hawk habitat (see below), which may contribute toward or accommodate mitigation for this impact through acquisition and preservation of offsite lands.
- Participate in a regional planning/conservation process, such as the proposed Placer County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) that provides a mechanism to mitigate all biological impacts based on a standardized formula. Preparation of the Placer County HCP/NCCP, a regional

conservation plan, is currently in progress pursuant to Section 10 of the federal Endangered Species Act and Section 2800 of the California Fish and Game Code (Natural Communities Conservation Act of 1991).

- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

Emergent Marsh

Emergent marsh is continuous along the length of Curry Creek from Fiddymont Road to Baseline Road and in patches between Baseline Road and the western boundary. The emergent marsh habitat is located solely in the project area and not the Urban Reserve. This is a biologically important habitat feature in the study area that supports a variety of wetland-associated species. The continuous patch along the Curry Creek in the project area is a particularly important habitat. Loss of this habitat would also likely be considered a significant impact for similar reasons as described above. Significance can be determined both on the basis of Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance). Protection and/or mitigation are also encouraged through City and County policy and through CDFG's policy of no-net-loss of function and value.

As with other wetland types in the study area, mitigation for losses of emergent marsh habitat within Curry Creek would likely also be addressed through the Section 404 process. Mitigation could take the form of onsite preservation, creation, and/or enhancement, offsite acquisition, creation, restoration, and/or enhancement, or purchase of credits through an established and approved wetland mitigation bank.

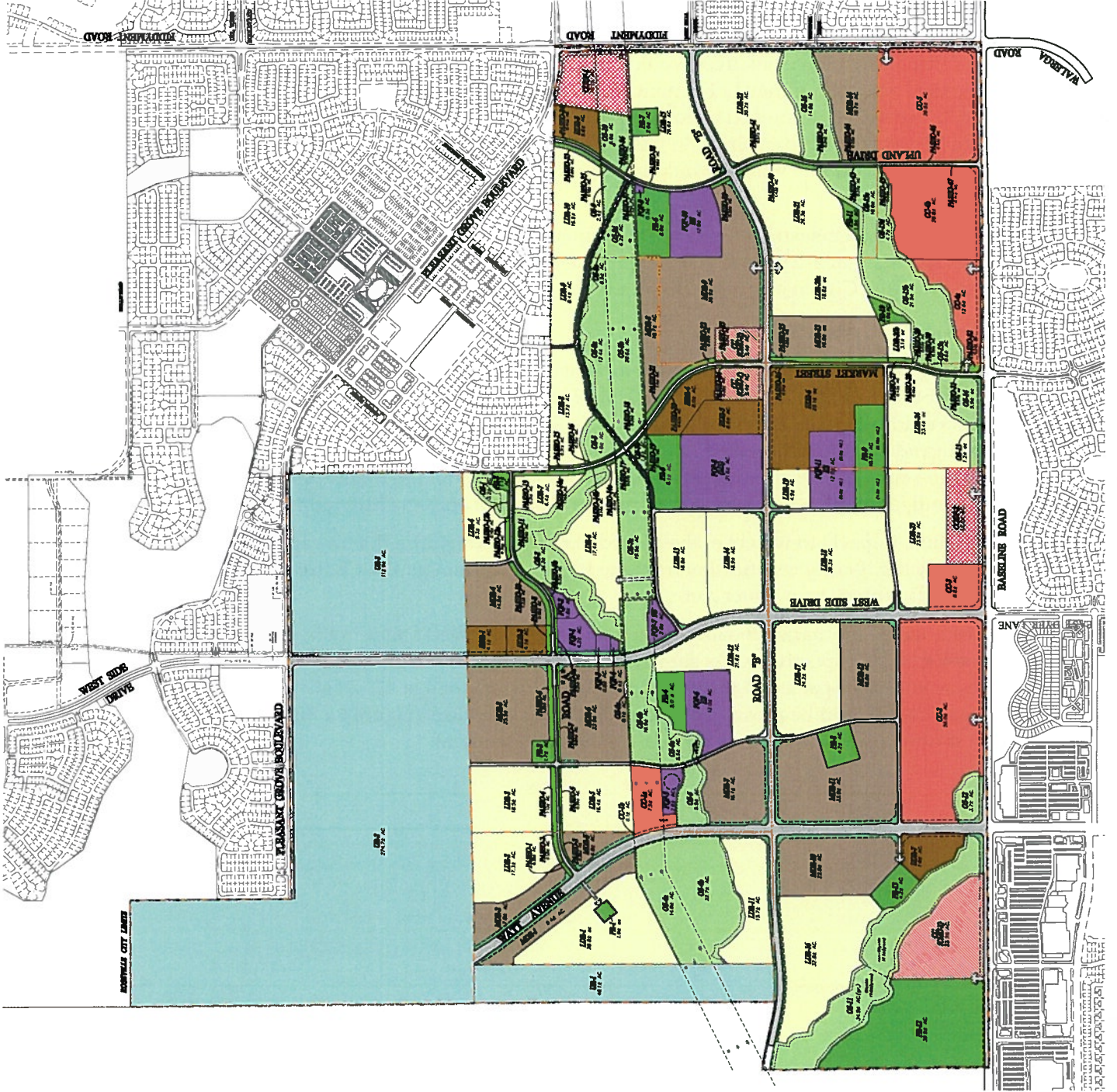
Avoidance is also an option and can be achieved through protection of the Curry Creek drainage and establishment of a buffer along both sides of the creek.

Riparian Woodlands

Riparian woodlands support one of the most diverse assemblages of wildlife species of any habitat type in the state. While there is relatively little riparian woodland habitat in the study area, it provides essential nesting, roosting, and cover habitat for many species and enhances the species richness and value of the open grassland habitat. Because of the extensive loss of riparian habitats in California, virtually any loss is generally considered a significant impact pursuant to both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance).

As with emergent marsh habitat, avoidance is also an option and can be achieved largely through protection of the Curry Creek drainage in the project area and establishment of a buffer along both sides of the creek.

Mitigation for loss of riparian habitat should be consistent with CDFG's and the City and County policies of no-net-loss. Mitigation could take the form of preservation and enhancement of onsite or offsite lands, or purchase of enhancement/creation credits through an established and approved mitigation bank.



LAND USE	ACRES
Low Density Residential	494.6
Medium Density Residential	261.6
High Density Residential	46.1
Community Commercial	158.6
Community Office	34.3
Community Cultural	27.3
Community Recreation	78.7
Public Open Space	89.9
Park	26.1
Pavement	296.9
Open Space	42.7
Landmark Overlay	42.7
Urban Reserve	42.7
Major Road	221.6
Sierra Vista Specifics Plan Area	2964.14

Figure 6
LAND USE PLAN



Sierra Vista

Scale: 1" = 400' Roseville, California January 22, 2009

EDAW

SIERRAVISTA

MACKAY & SOMPS

Oak Woodland and Tree Resources

ECORP's arborist report identifies and assesses trees that may be impacted by proposed development activities. The survey covered protected trees as defined by both the Placer County Tree Preservation Ordinance and the City of Roseville Tree Preservation Ordinance. The County Tree Ordinance protects (1) native tree species, except foothill pine, that measure equal to or greater than 6 inches in diameter at breast height (DBH) and multi-trunked trees measuring equal to or greater than 10 inches aggregate DBH; (2) all size riparian zone trees; and (3) landmark trees as specified by the County Board of Supervisors. The City Tree Ordinance protects native oak trees equal to or greater than 6 inches DBH measured as a total of a single trunk or multiple trunks. No oak woodland habitat occurs within the Sierra Vista Specific Plan project site. Six native oak trees were inventoried in the project area (no native oak trees occur in the Urban Reserve). Overlaying the land use plan (Figure 6) with ECORP's tree location data shows that all six native oak trees would be impacted by the proposed project. The remaining native trees are predominately Fremont cottonwood and willows. In the Urban Reserve, none of the 21 Fremont cottonwoods trees would be impacted by the road improvements or grading within 25 feet of the project area. In the project area, four Fremont cottonwood trees, seven black walnuts, and one willow would be impacted by the project (in addition to the five oak trees).

Tree preservation measures should be implemented during construction for preserved trees. Protected trees that are proposed to be impacted or removed should be incorporated into a tree permit from the City to ensure the required mitigation (e.g., replacement and/or in-lieu fees).

Waters of the United States

The study area has resources within the jurisdiction of the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act. Activities affecting waters of the United States would require a permit from the Corps. Depending on the extent of impacts, mitigation could include offsite wetland creation or restoration, or the purchase of credits in an approved mitigation bank or in-lieu fund. Prior to release of the EIR and EIS, the applicant's proposed offsite mitigation plan will be prepared and evaluated in both the EIR and EIS.

In addition, impacts to waters of the United States would require that the applicant would obtain a water quality certification from the Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act.

Tables 2 and 3 summarize the impacts to waters of the United States in the project area and Urban Reserve, respectively. As shown in Table 2, a total of 22.746 acres of waters of the United States would be impacted in the development area and a total of 13.688 acres of waters of the United States would be preserved in the open space corridors (Figure 6). Impacts to vernal pool fairy shrimp are discussed in a later section in this document.

Table 2
Impacts to Waters of the United States and Vernal Pool Fairy Shrimp Habitat in Project Area*

		Developed Area	Open Space Corridor			Project Area Total
		Total Impacts to Waters of the U.S.	Indirect impact to fairy shrimp habitat (within 250 feet of development)	Avoided impact to fairy shrimp (further than 250 feet from development)	Total Preserved Waters of the U.S.	
Not Vernal Pool Fairy Shrimp Habitat	Ephemeral Stream	0.016	-	0.003	0.003	0.019
	Intermittent Stream	0.798	-	4.272	4.272	5.070
	Perennial Stream	0.434	-	1.716	1.716	2.150
	Pond	1.045	-	1.022	1.022	2.067
	Perennial Marsh	0.848	-	0.011	0.011	0.859
	Seasonal Wetland	3.482	-	1.370	1.370	4.852
	Wetland Swale	8.242	-	1.637	1.637	9.879
	Vernal Pool	4.508	-	2.813	2.813	7.321
	Total Not Shrimp Habitat	19.373	0.000	12.845	12.845	32.218
Vernal Pool Fairy Shrimp Habitat (three occupied watersheds)	Seasonal Wetland	0.515	0.364	0.0005	0.368	0.883
	Vernal Pool	2.858	0.267	0.208	0.475	3.333
	Total Shrimp Habitat	3.373	0.631	0.212	0.843	4.216
Grand Total		22.746	0.631	13.057	13.688	36.434

* Impacts tabulated by Gibson & Skordal based on information provided by ECORP (Gibson & Skordal 2009); Data subject to refinement.

As shown in Table 3, a total of 0.778 acre of waters of the United States would be impacted in the Urban Reserve due to the construction of Road B and West Side Drive and grading within 25 feet of the project area (Figure 6). Impacts to fairy shrimp are discussed in a later section in this document. A few specific wetland and other water resources are discussed following Table 3.

Table 3
Impacts to Waters of the United States and Vernal Pool Fairy Shrimp Habitat in Urban Reserve*

		Impacts within 25 feet of Project Area	Impacts from Road B and West Side Drive	Impact Total	Urban Reserve Total
Not Vernal Pool Fairy Shrimp Habitat	Ephemeral Stream	-	-	-	-
	Intermittent Stream	-	-	-	1.186
	Perennial Stream	-	-	-	-
	Pond	-	-	-	-
	Perennial Marsh	-	-	-	-
	Seasonal Wetland	0.123	-	0.123	0.792
	Wetland Swale	0.215	0.146	0.361	7.749
	Vernal Pool	-	0.088	0.088	0.312
	Total Not Shrimp Habitat	0.338	0.234	0.572	10.039
Vernal Pool Fairy Shrimp Habitat (four occupied watersheds)	Seasonal Wetland	0.002	0.060	0.062	1.144
	Vernal Pool	0.038	0.106	0.144	2.682
	Total Shrimp Habitat	0.040	0.166	0.206	3.826
Grand Total		0.378	0.400	0.778	13.865

* Impacts tabulated by Gibson & Skordal based on information provided by ECORP (Gibson & Skordal 2009); Data subject to refinement.

Vernal Pools and Swales

A total of 7.366 acres of vernal pools would be impacted in the project area and a total of 0.232 acres impacted in the Urban Reserve. Loss of vernal pools and swales will be considered a significant impact due to the increasing rarity of these important habitats, their value to plants and wildlife, their hydrologic function, and their association with many special status species. Significance can be determined both on the basis of Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance).

Mitigation for losses of vernal pools and other jurisdictional wetlands will be addressed through the Section 404 process and Section 7 consultation between the Corps and the USFWS. Mitigation could take the form of onsite preservation and/or enhancement, offsite preservation, creation, and enhancement, or purchase of credits through an established and approved wetland mitigation bank.

Seasonal Wetlands

A total of 3.997 acres of seasonal wetlands would be impacted in the project area and a total of 0.185 acres impacted in the Urban Reserve.. Loss of seasonal wetlands will be considered a significant impact due to the continuing decline of wetland habitats in California and their importance to hydrologic function and plant and wildlife species. Significance can be determined both on the basis of Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance). Protection and/or mitigation are also encouraged through City and County policy and through CDFG's policy of no-net-loss of function and value.

Mitigation for losses of seasonal wetlands will be addressed through the Section 404 process. Mitigation could take the form of onsite and/or offsite enhancement or acquisition, or purchase of credits through an established and approved wetland mitigation bank.

Streams and Associated Riparian Habitat

Curry Creek and its unnamed tributaries are within the jurisdiction of the CDFG pursuant to Section 1602 of the California Fish and Game Code. Impacts to these resources would require a stream and lakebed alteration agreement with the Department. Permanent impacts may be mitigated by restoring or creating these resources onsite or offsite on an acre-for-acre basis. CDFG may also require tree replacement at ratios ranging from 1:1 to 3:1.

Nesting Raptors

In addition to special status raptors (see below), several other common raptors nest in the study area and nearby properties, including four red-tailed hawk nest sites (Figure 3), which may represent a substantial segment of the local population. While this species is relatively common throughout its range, disturbances and habitat loss could cause permanent nest abandonment and affect a portion of the local population. This could be considered significant pursuant to both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance). Disturbance to nesting raptors and/or removal of active nests also violates California Fish and Game Code 3503.5.

The loss of habitat could be satisfactorily addressed through mitigation for grassland habitat (see above) or Swainson's hawk foraging habitat (see below). The direct loss of eggs or young from construction-related disturbances is generally avoided through pre-construction nesting raptor surveys and seasonal restrictions on construction activity within pre-established no-disturbance buffers.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) (Title 16, United States Code [USC], Part 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10). Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of MBTA. USFWS is responsible for overseeing compliance with MBTA.

Executive Order 13186 (January 10, 2001) directs each federal agency taking actions having or likely to have a negative impact on migratory bird populations to work with USFWS to develop

a memorandum of understanding (MOU) that will promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The executive order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to “take” migratory birds.

Development of the plan area will remove over 2,000 acres of grassland habitat that is used as nesting habitat by a variety of bird species protected under the MBTA, and thus ground disturbing activities during the breeding season could result in destruction of occupied nest sites, which would constitute a violation of the MBTA. Recognizing the difficulty avoiding this impact or enforcing the MBTA for development-related projects, the USFWS has developed the above-noted protocols for federal agencies in order to minimize impacts and complying with the MBTA to the extent practicable. Because the Corps will have substantial involvement with the project through the 404 process, one option is to address compliance with MBTA through this federal involvement with the project by implementing the protocols as described under Executive Order 13186.

In the absence of federal involvement related to MBTA compliance, the following alternatives should be considered:

- Minimize the impact by Implementing the protocols as described under Executive Order 13186 (but not part of a federal agency consultation process);
- Minimize the impact by conducting avian surveys prior to ground disturbance activities and limiting ground disturbance activities to areas with relatively minimal bird nesting activity;
- Avoid the impact by restricting all ground disturbance activities to the non-breeding season.

Special Status Species

Special Status Plants

Dwarf downingia

Determinant-level surveys for special status plants were conducted by ECORP (ECORP 2006c). They were floristic surveys and were done at the appropriate time of the year according to the guidelines issued by CDFG (1983) and USFWS (1996). ECORP mapped 0.29 acres of dwarf downingia in the project area and xxx acres within the Urban Reserve. At present, dwarf downingia is the only special status plant species known to occur within the study area. It is not state or federally listed, but is on the CNPS List 2.2. The special status plant survey conducted by ECORP in 2006 is valid for a period of three years, after which additional surveys may be necessary (USFWS 1996). Since dwarf downingia is located throughout the northern portion of the study area, development will result in direct impacts to at least some of the

dwarf downingia populations. Overlaying the land use plan (Figure 6) with ECORP's downingia location data, 0.02 acres of dwarf downingia would be impacted by the proposed project in the project area. In the Urban Reserve, xxx acres of dwarf downingia would be impacted. The project proponent(s) should retain a qualified botanist to develop and implement a mitigation plan, subject to the approval of CDFG. Mitigation strategies for dwarf downingia would be developed in conjunction with vernal pool mitigation. If impacts to the species are determined to be unavoidable, possible measures may include on- or offsite restoration, compensation, and/or other salvage methods.

Special Status Wildlife

Aquatic invertebrates

While neither the vernal pool tadpole shrimp nor the Conservancy fairy shrimp was found, the vernal pool fairy shrimp was found in the study area during protocol surveys (ECORP 2006a, 2007g). During the 2005-2007 wet season surveys, five study area watersheds (two of the watersheds occur both in the project area and Urban Reserve) were found to occupy the federally threatened vernal pool fairy shrimp. These occupied watersheds encompass 4.216 acres of vernal pool fairy shrimp habitat in the project area and 3.826 acres of habitat in the Urban Reserve.

In the project area, as shown in Table 2, a total of 3.373 acres of vernal pool fairy shrimp habitat would be directly impacted and a total of 0.631 acre of habitat would be indirectly impacted. In the Urban Reserve, as shown in Table 3, a total of 0.778 acre of vernal pool fairy shrimp habitat would be impacted. Loss of occupied vernal pools would be considered significant based on both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance). Once protocol surveys are complete, mitigation to address impacts to federally listed branchiopods will be determined on the basis of occupied habitat according to standard USFWS guidelines. Mitigation will ultimately be determined through consultation between the Corps and the USFWS pursuant to Section 7 of the federal Endangered Species Act, preparation of a Biological Assessment, and issuance of a Biological Opinion.

Valley elderberry longhorn beetle

While the study area is within the range of VELB, no elderberry shrubs were detected in the study area during surveys. Thus, there is no potential for this species to occur in the study area and no consultation, mitigation, or further work is required.

Salmonids

Anadromous fish species, such as Central Valley spring and winter-run Chinook salmon and steelhead, are not anticipated to occur within Curry Creek. The portion of Curry Creek located within the study area is expected to support only resident cold- and warm-water fish species. However, Curry Creek ultimately connects downstream to the East Main Drain and Sacramento River. In order to ensure water quality for downstream fish habitat, standard Best Management Practices for work within and adjacent to Curry Creek and its tributaries would greatly reduce the potential for adverse affects to fish habitat downstream. Another option would be to implement the *Pleasant Grove Creek and Curry Creek Ecosystem Restoration Plan* (Foothill Associates 2006b). The Plan proposes various water quality and habitat improvements for Curry Creek, Pleasant Grove Creek, and the East Main Drain. It is not fully clear whether this would have any real impact on salmonids, but implementation of the Curry Creek Restoration

Plan would be one way to ensure and improve water quality both in Curry Creek and downstream.

California tiger salamander

California tiger salamander was not detected during extensive vernal pool and seasonal wetland surveys for listed branchiopods and western spadefoot. It is unlikely that the species occurs in the study area. While there are no recent or historical occurrences of the California tiger salamander in Placer County, this species is a covered species under the proposed Placer County HCP/NCCP. The rationale for including it is based on the proximity of the current range and the suitable habitat conditions in portions of western Placer County, including the study area. The vernal pool grassland/swale habitat in the study area is considered suitable habitat for California tiger salamander.

The USFWS supported the rationale for including the California tiger salamander in the proposed Placer County HCP/NCCP. Thus, in the absence of surveys using standard USFWS protocols, assuming absence may be inconsistent with the USFWS determination that may result from consultation between the USFWS and the U.S. Army Corps of Engineers during Section 404 review. Still, the lack of detections during surveys for other vernal pool and seasonal wetland species and the lack of detections from anywhere in western Placer County, would suggest that the study area is not within the current range of this species and that this impact would be regarded as less than significant.

California red-legged frog

There are no recent records of California red-legged frog from the floor of the Central Valley and only one recent record from Placer County. This record is from the Michigan Bluff area approximately 35 miles from the study area and occurs at a higher elevation and in a different vegetation community. While Curry Creek contains the basic habitat elements required for California red-legged frog presence, it is considered only marginally suitable habitat for this species due to variable and uncertain water flows, the extent of urbanization in the vicinity of the study area, historic and current disturbances to the creek from farming and ranching practices, and the presence of large populations of bullfrogs. Curry Creek also has no connectivity with other drainages that are known or have potential to support California red-legged frog. Thus, presence of this species in the study area is considered highly unlikely. There is no potential for occurrence of California red-legged frog within the Urban Reserve.

As with other potentially occurring federally listed species, guidance will be provided during formal Section 7 consultation. Because the study area supports marginally suitable habitat and because the species is a Covered Species in the proposed Placer County HCP/NCCP, the USFWS may recommend that the standard site assessment and field survey protocol (USFWS 2005) be implemented to provide a formal assessment of the potential for occurrence through which the USFWS can then respond. It is likely that the result of the initial site assessment will indicate that presence is highly unlikely and thus no mitigation would be required. However, the potential remains that on the basis of the site assessment, the USFWS could require protocol surveys for California red-legged frog along Curry Creek. If presence is determined, further mitigation would be imposed through the Section 7 consultation process.

Western spadefoot

While no western spadefoot were found during surveys of the study area (ECORP 2006d, 2007a, 2007b), they have been reported from the vicinity of the study area and elsewhere in western Placer County. The extent to which the surveys conducted by ECORP would be considered conclusive with regard to absence is unclear. Surveys conducted in 2007 on the Chan and Baybrook properties are considered incomplete due to the lack of rainfall and inundation of vernal pool habitats. Surveys conducted elsewhere, however, are considered complete but still may be regarded as inconclusive with regard to absence. The spadefoot is typically subterranean for up to 10 months of the year, emerging only for local movements and breeding. Emergence occurs only during appropriate conditions, which is typically restricted to rainy nights. During the day, they are usually in underground burrows. Eggs are deposited in vernal pools and other seasonal wetlands. Most of ECORP's surveys for spadefoot in vernal pool habitats were conducted incidentally in conjunction with listed branchiopod surveys. Specific surveys designed to detect spadefoot (i.e., nighttime surveys during warm rain events to detect adults) were not conducted (however, this isn't unusual because adults are very difficult to detect even under optimal conditions) - and vernal pool sampling was not designed to specifically detect spadefoot larvae. Moreover, because of the dry conditions over the last couple of seasons, pools may not have been sufficiently inundated for spadefoot breeding, which would limit the ability to detect larvae during invertebrate surveys. So, while ECORP's surveys were not unreasonable in terms of a general survey of the species, they may not be considered conclusive with respect to determining absence of the species.

Still, the species is known to occur in western Placer County and the study area supports high quality habitat for this species. Because of the continuing loss of vernal pool grasslands in western Placer County and because of the large number of acres included in the study area, this may be regarded as a potentially significant impact on western spadefoot based on both Appendix G of the State CEQA guidelines (e.g., reduce habitat availability sufficient to constrain the distribution of a species and not allow for natural changes in distributional patterns over time) and Section 15065 (Mandatory Findings of Significance) (e.g., substantially reduce the habitat of a fish or wildlife species; substantially reduce the number or restrict the range of an endangered, rare or threatened species). If the impact were considered significant, mitigation options include the following:

- If possible, mitigate onsite by retaining an appropriately sized and configured portion of the study area as habitat for western spadefoot. This area would require connectivity with other offsite protected lands in order to ensure movement potential and protection of sufficiently large landscapes to ensure long-term viability.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP that provides a mechanism to mitigate all biological impacts based on a standardized formula.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

In addition, because surveys of the Chan and Baybrook properties are considered incomplete, additional surveys are recommended in vernal pool habitats during the next rainy season to be consistent with survey effort conducted elsewhere in the study area.

Giant garter snake

Portions of Curry Creek, within the project area, support at least marginally suitable habitat for giant garter snake. Because this species is state and federally listed and because there is some potentially occupied habitat within the study area, coordination with the USFWS would be prudent prior to making any final determination with regard to presence or absence. (There is no potential for occurrence of giant garter snake within the Urban Reserve.) The Corps may consult with the USFWS on this issue pursuant to Section 7 of the federal Endangered Species Act, and while the species could be absent from the study area, the USFWS may require additional assessment, surveys, and reporting before concluding absence. Standard USFWS protocols for giant garter snake habitat assessment should be employed and protocol surveys conducted as needed and directed through coordination with the USFWS staff under Section 7 (Note that there are no protocols for determining presence/absence and the USFWS will not accept a determination of absence based on the lack of detections). Avoidance is achieved through permanent protection of the aquatic resource and at least a 200-foot upland buffer on each side.

As noted above, coordination with the USFWS and/or additional protocol surveys would be required in order to determine presence or absence of giant garter snake. If the study area is found to be either unsuitable or unoccupied, no further mitigation would be required. However, if the study area is found to be occupied, then this impact would be considered significant based on both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance). Mitigation would be addressed through Section 7 consultation. In general, if avoidance (as described above) cannot be achieved, compensation typically requires up to 3:1 replacement for the aquatic and associated upland habitat.

Western pond turtle

Because no pond turtles were found during surveys and Curry Creek and the stock ponds are considered marginal habitat, it is likely that potential impacts to western pond turtle would be considered less than significant. Preservation of the Curry Creek corridor and a surrounding buffer would provide potential future habitat for pond turtles. There is no potential for western pond turtle in the Urban Reserve.

Greater sandhill crane

The study area is not within the designated essential winter range of greater sandhill crane (Littlefield and Ivey 2000). While it is within an area that may receive incidental use by roosting or migrating cranes, the potential for occurrence is considered low and the value of the study area to this species in the context of its regional wintering range is considered low. Thus, this is likely to be considered a less-than-significant impact that would not require mitigation.

Northern harrier

The entire study area is considered suitable foraging habitat for northern harrier, and implementation of the Sierra Vista Specific Plan would effectively result in the loss of over 2,000 acres of annual grassland foraging habitat.

Because of the large number of acres that would be affected and in the context of a continuing cumulative loss of grassland habitat in western Placer County and throughout the central Sierra Nevada foothills, this may be considered a significant impact based on both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance). Mitigation could be combined with other open space/grassland mitigation requirements. Options could include the following.

- Implement required mitigation for other impacts, such as loss of Swainson's hawk habitat, which may contribute toward or accommodate mitigation for this impact through acquisition and preservation of offsite lands.
- If possible, mitigate onsite by retaining an appropriately sized and configured portion of the study area as habitat for northern harrier and other grassland-associated species.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP, that provides a mechanism to mitigate all biological impacts based on a standardized formula.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

White-tailed kite

White-tailed kite occurs in the study area. It likely nests in the southwestern corner of the project area and potentially forages throughout the entire study area. As with the northern harrier, because of the large number of acres that would be affected and in the context of a continuing cumulative loss of grassland habitat in western Placer County, this could potentially be considered a significant impact based on both Appendix G of the State CEQA guidelines (and Section 15065 Mandatory Findings of Significance). Mitigation could be combined with other open space/grassland mitigation requirements. Options could include the following.

- Implement required mitigation for other impacts, such as loss of Swainson's hawk habitat (see below), which may contribute toward or accommodate mitigation for this impact through acquisition and preservation of offsite lands. No additional compensation would be required.
- If possible, mitigate onsite by retaining an appropriately sized and configured portion of the study area as habitat for white-tailed kite and other grassland-associated species.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP, that provides a mechanism to mitigate all biological impacts based on a standardized formula.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

In addition, unlike listed species for which take authorization can be provided under the state or federal Endangered Species Act, there are no provisions for take of state fully protected species in the Fish and Game Code. This in effect prohibits removal or disturbance to nest sites or nesting birds, which can result in limitations to project implementation during the nesting season.

Swainson's hawk

A Swainson's hawk nest occurs in the southwestern corner of the project area, and there are other known nesting locations in the vicinity of the study area. Development of the Sierra Vista Specific Plan project site would likely cause the permanent abandonment of the nest and effectively eliminate over 2,000 acres of foraging habitat for this species. This would constitute a significant impact to this species based on both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance). Mitigation options include the following:

- Develop a Management Agreement through consultation with CDFG pursuant to Section 2081 of the Fish and Game Code, and mitigate according to standard CDFG guidelines (California Department of Fish and Game 1995).
- Calculate mitigation requirement according to standard CDFG guidelines (California Department of Fish and Game 1995) and compensate through an established and approved mitigation bank.
- If possible, mitigate onsite by retaining an appropriately sized and configured portion of the study area as habitat for Swainson's hawk and other grassland-associated species.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP, that provides a mechanism to mitigate all biological impacts based on a standardized formula.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

Impacts to nesting Swainson's hawk may also be considered a take pursuant to CESA. However, unlike fully protected species (e.g., white-tailed kite), CESA allows take of state threatened or endangered species as long as that take is fully mitigated and authorized through consultation with CDFG.

Ferruginous hawk

Development of the study area would effectively eliminate over 2,000 acres of winter foraging habitat for ferruginous hawk. Because this species only occurs in the Central Valley during the winter and because it is distributed widely throughout the Central Valley, loss of grassland habitat is not typically considered a significant impact for development-related projects. However, because the grassland habitat of the Sierra Nevada foothills is considered key winter habitat for this species, because the cumulative loss of grassland habitat is increasing in western Placer County and throughout the central Sierra Nevada foothills, and because of the large number of acres that would be removed under the Sierra Vista Specific Plan, this impact may be regarded as significant based on both Appendix G of the State CEQA guidelines and Section

15065 (Mandatory Findings of Significance). Further analysis of the cumulative loss of grassland habitat in western Placer County would be required to make this determination. If found to be significant, mitigation options include the following:

- Implement required mitigation for other impacts, such as loss of Swainson's hawk habitat (see above), which may contribute toward or accommodate mitigation for this impact through acquisition and preservation of offsite lands. No additional compensation would be required.
- If possible, mitigate onsite by retaining an appropriately sized and configured portion of the study area as habitat for ferruginous hawk and other grassland-associated species.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP, that provides a mechanism to mitigate all biological impacts based on a standardized formula.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

California black rail

There are currently no known occurrences of California black rail in the plan area or vicinity. The nearest reported occurrence is in Clover Valley, several miles east of the study area. Given the restricted range of environmental conditions that are necessary for California black rail occurrence and the rarity of the species in the region, it is unlikely that this species occurs in the study area. However, surveys to assess the suitability of specific habitat conditions (e.g., consistent water depth) have not been conducted, nor have species-specific surveys been conducted. Thus, while occurrence is unlikely, additional surveys should be conducted to more definitively determine the occurrence or potential for occurrence of this species.

Therefore, pre-construction nesting surveys should occur in the emergent marsh habitat along Curry Creek in the project area. There is no potential for California black rail occurrence in the Urban Reserve. If this area were to be occupied by this species prior to development of the Sierra Vista Specific Plan project site, this could represent a significant impact based on both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance).

To determine presence/absence in future years prior to development activity and provide avoidance measures if occupancy occurs, the following measures can be implemented:

- Conduct nesting surveys in all suitable habitat along Curry Creek prior to any development activities.
- If occupancy is confirmed, coordinate with CDFG with regard to implementation of avoidance measures.
- Through coordination with CDFG, establish nest protection buffers along both sides of Curry Creek during the nesting season (generally February 1st through August 31st) sufficient to avoid nest abandonment (approximately 250 feet).

- Through coordination with CDFG, establish a monitoring program to determine occupancy and status of breeding sites in subsequent years.

If occupancy occurs, the following mitigation options could be considered:

- Create an onsite preserve that includes Curry Creek and a substantial open space buffer on both sides of the creek. California black rails are sensitive to human disturbances and changes in the landscape, so this possible mitigation may be controversial in that it may not be possible to ensure long-term occupancy regardless of the size of the buffer area if the surrounding landscape is altered.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP, that provides a mechanism to mitigate all biological impacts based on a standardized formula. For this species, there could be additional measures in the HCP/NCCP that require protection for existing sites or substantial habitat creation/enhancement on preserve areas designed to attract breeding colonies.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

Long-billed Curlew

The long-billed curlew does not breed onsite but may occasionally forage and roost onsite during the winter. While this species is no longer considered a state species of special concern, development of the area will remove over 2,000 acres of potential winter foraging and roosting habitat for this species. This, along with other planned and proposed development projects in western Placer County will continue to reduce the winter range of this species in the Central Valley, and potentially be considered cumulatively significant pursuant to Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance). Further analysis of the cumulative loss of grassland habitat in western Placer County would be required to make this determination. If found to be significant, mitigation options include the following:

- Implement required mitigation for other impacts, such as loss of Swainson's hawk habitat (see above), which may contribute toward or accommodate mitigation for this impact through acquisition and preservation of offsite lands. No additional compensation would be required.
- If possible, mitigate onsite by retaining an appropriately sized and configured portion of the study area as habitat for long-billed curlew and other grassland-associated species.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP, that provides a mechanism to mitigate all biological impacts based on a standardized formula.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to

ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

Burrowing owl

One burrowing owl was detected in the project area on several occasions by ECORP staff during the winter of 2005; however, it was not observed during subsequent surveys by ECORP in 2006. There are currently no active breeding or wintering burrowing owl burrows in the study area (as of 2007 field surveys). However, it remains possible that breeding or wintering owls could occupy the study area prior to development and potentially result in losses of breeding or wintering burrows and associated foraging habitat. This would be considered a significant impact.

In the event that burrowing owls occupy the study area in the future but prior to development, implementation of the standard recommendations by CDFG (California Department of Fish and Game 1995) would be the most likely mitigation scenario. These include:

- Conduct pre-construction surveys and identify occupied burrows.
- Do not disturb active breeding burrows during the nesting season (February 1 through August 31).
- Use passive relocation techniques (e.g., one-way doors) during the non-breeding season, to exclude owls from active winter burrows and potential burrows.
- Compensate for loss of active burrows and associated foraging habitat at a minimum of 6.5 acres per pair or unpaired resident bird. This can be accomplished through an approved mitigation bank.
- Install artificial burrows at a ratio of 2:1 at compensation site or other approved location.

In addition, the species likely uses the study area at least occasionally for foraging. Development of the study area would effectively eliminate over 2,000 acres of foraging habitat for burrowing owl. While standard CDFG guidelines do not address impacts to foraging habitat where active breeding or wintering burrows do not occur, due to the large number of acres impacted, this may represent a significant impact to burrowing owls. If so, possible mitigation measures include the following:

- Implement required mitigation for other impacts, such as loss of Swainson's hawk habitat (see above), which may contribute toward or accommodate mitigation for this impact through acquisition and preservation of offsite lands. No additional compensation would be required.
- If possible, mitigate onsite by retaining an appropriately sized and configured portion of the study area as habitat for burrowing owl and other grassland-associated species.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP that provides a mechanism to mitigate all biological impacts based on a standardized formula.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to

ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

Tricolored blackbird

Tricolored blackbird does not currently nest in the study area and no active colonies are currently reported from western Placer County. The nearest known tricolored blackbird nesting colony is on the BKS preserve, a property owned and managed by the Natomas Basin Conservancy, in the Natomas Basin approximately 6-7 miles west of the study area, and a currently undocumented breeding colony in Lincoln was recently observed. The study area probably receives some foraging use by tricolored blackbird. Because the species does not currently nest in the study area, this impact would likely be regarded as less than significant. However, the cattail marsh along Curry Creek represents suitable habitat for tricolored blackbird nesting. (There is no suitable habitat or potential for occurrence of tricolored blackbird in the Urban Reserve.) Therefore, pre-construction nesting surveys should occur in the project area. If this area were to be occupied by this species prior to development of the Sierra Vista Specific Plan project site, this could represent a significant impact based on both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance).

To determine presence/absence in future years prior to development activity and provide avoidance measures if occupancy occurs, the following measures can be implemented:

- Conduct nesting surveys in all suitable habitat along Curry Creek prior to any development activities.
- If occupancy is confirmed, coordinate with CDFG with regard to implementation of avoidance measures.
- Through coordination with CDFG, establish nest protection buffers along both sides of Curry Creek sufficient to avoid nest abandonment.
- Through coordination with CDFG, establish a monitoring program to determine occupancy and status of the breeding colony in subsequent years.

If occupancy occurs, the following mitigation options could be considered:

- Create an onsite preserve that includes Curry Creek and a substantial open space buffer on both sides of the creek. Tricolored blackbirds are highly sensitive to human disturbances and changes in the landscape, so this possible mitigation may be controversial in that it may not be possible to ensure long-term occupancy regardless of the size of the buffer area if the surrounding landscape is altered.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP, that provides a mechanism to mitigate all biological impacts based on a standardized formula. For this species, there could be additional measures in the HCP/NCCP that require protection for existing sites or substantial habitat creation/enhancement on preserve areas designed to attract breeding colonies.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to

ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

Loggerhead shrike

Development of the study area would remove over 2,000 acres of foraging habitat and possibly potential breeding habitat for this species. The loggerhead shrike is fairly widespread and thus habitat losses from development-related projects are typically considered less than significant. However, from a cumulative perspective, because of the large number of acres potentially removed and because of the overall loss of grasslands in western Placer County, this could be regarded as significant. Additional cumulative analysis would be required to make this determination. In the event that it was considered significant, the following mitigation options would be available.

- Implement required mitigation for other impacts, such as loss of Swainson's hawk habitat (see above), which may contribute toward or accommodate mitigation for this impact through acquisition and preservation of offsite lands. No additional compensation would be required.
- If possible, mitigate onsite by retaining an appropriately sized and configured portion of the study area as habitat for loggerhead shrike and other grassland-associated species.
- Participate in a regional planning/conservation process, such as the proposed Placer County HCP/NCCP, that provides a mechanism to mitigate all biological impacts based on a standardized formula.
- As an alternative to direct participation in the Placer County HCP/NCCP, the City can coordinate the project with Placer County regarding the HCP/NCCP planning efforts in order to develop mitigation plans that complement those planning efforts and to ensure that mitigation plans do not preclude opportunities to successfully implement the HCP/NCCP.

Heron/egret rookeries

There are currently no rookeries for great blue heron, great egret, snowy egret, or black-crowned night heron in the study area. However, the eucalyptus groves may provide potential rookery sites for these species, and the cattail marsh associated with Curry Creek may provide potential breeding habitat for black-crowned night heron and snowy egret. Because rookeries can support a substantial portion of a local breeding population of one or more of these species, disturbance to active rookeries could be regarded as significant based on both Appendix G of the State CEQA guidelines and Section 15065 (Mandatory Findings of Significance).

To avoid disturbance to active rookeries, preconstruction surveys should be conducted and no disturbance buffers should be established during the breeding season.

Special status bats

While the study area may support suitable foraging habitat for pallid bat, Townsend's big-eared bat, Yuma myotis, and other common bat species, there is very little habitat within the study area to support roosting or maternity sites. The two historic ranch residences that may have provided roosting habitat were previously removed. The three existing residences are unlikely to support roosting habitat for special status bats. There are no rocky areas, mines, caves, or

other features that would support roosts, and the few trees in the study area are not sufficiently large or decadent to support roosting special status bats.

Grassland foraging habitat that is potentially used by special status bats would be removed and thus reduce available foraging habitat for these species in the region. It is unlikely, however, that in the absence of potential roosting habitat within or in the immediate vicinity of the study area, this could be demonstrated to have a significant impact on these bat populations. In the event that a significant cumulative loss of grassland foraging habitat for bats could be determined, mitigation that would be required for other grassland species would likely be considered sufficient to reduce this potential impact to a less-than-significant level.

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Appendix A

Plant Species Observed within the Sierra Vista Study Area During Surveys

Ferns and Allies

Isoetaceae

Isoetes orcuttii Orcutt's quillwort

Marsileaceae

Marsilea vestita subsp. vestita Water shamrock

Gymnosperms

Pinaceae

Pinus sp. Pine

Angiosperms - Dicots

Anacardiaceae

**Pistacia chinensis* Chinese pistachio

**Pistacia vera* Pistachio

Apiaceae

**Daucus carota* Queen Anne's lace

Eryngium vaseyi Vasey's coyote-thistle

Apocynaceae

Asclepias fascicularis Narrow-leaf milkweed

**Nerium oleander* Oleander

Asteraceae

Achyrachaena mollis Blow-wives

**Carduus pycnocephalus* Italian thistle

**Centaurea solstitialis* Yellow star-thistle

Centromadia fitchii Fitch's spikeweed

**Cichorium intybus* Chicory

Gnaphalium palustre Western marsh cudweed

Grindelia hirsutula Gumplant

Holocarpha virgata subsp. virgata Virgate tarweed

**Hypochaeris glabra* Smooth cat's-ear

**Hypochaeris radicata* Rough cat's-ear

**Lactuca serriola* Prickly lettuce

Lasthenia fremontii Fremont's goldfield

Lasthenia glaberrima Smooth goldfields

**Leontodon saxatilis* Long-beaked hawkbit

**Logfia gallica* Narrowleaf cottonrose

Madia elegans subsp. vernalis Common madia

**Matricaria discoidea* Pineapple-weed

Micropus californicus subsp. californicus Slender cottonweed

**Picris echioides* Bristly ox-tongue

Psilocarphus brevissimus var. brevissimus Dwarf woolly-heads

* Indicates a non-native species

<i>Psilocarphus tenellus</i> var. <i>globiferus</i>	Round woolly-marbles
* <i>Silybum marianum</i>	Milk thistle
* <i>Soliva sessilis</i>	Soliva
* <i>Sonchus asper</i>	Prickly sow-thistle
* <i>Sonchus oleraceus</i>	Common sow-thistle
<i>Xanthium strumarium</i>	Cocklebur
Bignoniaceae	
* <i>Catalpa</i> sp.	Catalpa
Boraginaceae	
<i>Amsinckia menziesii</i>	Common fiddleneck
<i>Plagiobothrys fulvus</i>	Fulvous popcornflower
<i>Plagiobothrys greenei</i>	Greene's popcornflower
<i>Plagiobothrys nothofulvus</i>	Rusty popcornflower
<i>Plagiobothrys stipitatus</i> var. <i>micranthus</i>	Stipitate popcornflower
Brassicaceae	
* <i>Brassica rapa</i>	Field mustard
<i>Cardamine oligosperma</i>	Few-seed bitter cress
* <i>Hirschfeldia incana</i>	Short-podded mustard
<i>Lepidium nitidum</i> var. <i>nitidum</i>	Shining peppergrass
<i>Lepidium oblongum</i> var. <i>oblongum</i>	Wayside peppergrass
* <i>Raphanus raphanistrum</i>	Jointed charlock
* <i>Raphanus sativus</i>	Wild radish
<i>Rorippa curvisiliqua</i>	Western yellow cress
Callitrichaceae	
<i>Callitriche heterophylla</i> var. <i>heterophylla</i>	Larger water-starwort
<i>Callitriche marginata</i>	Winged water-starwort
Campanulaceae	
<i>Downingia bicornuta</i> var. <i>bicornuta</i>	Double-horned downingia
<i>Downingia ornatissima</i> var. <i>ornatissima</i>	Solano downingia
<i>Downingia pusilla</i>	Dwarf downingia
Caryophyllaceae	
* <i>Cerastium glomeratum</i>	Mouse-ear chickweed
* <i>Silene gallica</i>	Windmill-pink
* <i>Spergularia rubra</i>	Ruby sand-spurrey
* <i>Stellaria media</i>	Common chickweed
Convolvulaceae	
* <i>Convolvulus arvensis</i>	Bindweed
Crassulaceae	
<i>Crassula aquatica</i>	Water pygmy-weed
* <i>Crassula tillaea</i>	Mossy pygmy-weed
Euphorbiaceae	
<i>Croton setigerus</i>	Turkey mullein
Fabaceae	
* <i>Lathyrus angulatus</i>	Wild-pea
<i>Lupinus bicolor</i>	Miniature lupine
* <i>Medicago polymorpha</i>	California burclover
* <i>Robinia pseudoacacia</i>	Black locust

<i>*Trifolium campestre</i>	Hop clover
<i>Trifolium depauperatum</i>	Dwarf sack clover
<i>*Trifolium dubium</i>	Little hop clover
<i>*Trifolium fragiferum</i>	Strawberry clover
<i>*Trifolium glomeratum</i>	Clover
<i>Trifolium gracilentum var. gracilentum</i>	Pin-point clover
<i>*Trifolium hirtum</i>	Rose clover
<i>*Trifolium subterraneum</i>	Subterranean clover
<i>Trifolium variegatum</i>	White-tip clover
<i>*Vicia benghalensis</i>	Purple vetch
<i>*Vicia sativa</i>	Common vetch
<i>*Vicia villosa</i>	Hairy vetch
Fagaceae	
<i>Quercus lobata</i>	Valley oak
<i>Quercus wislizeni</i>	Interior live oak
Gentianaceae	
<i>Cicendia quadrangularis</i>	Timwort
<i>Zeltnera muehlenbergii</i>	June centaury
Geraniaceae	
<i>*Erodium botrys</i>	Broad-leaf filaree
<i>*Erodium cicutarium</i>	Red-stem filaree
<i>*Geranium dissectum</i>	Cut-leaf geranium
Hypericaceae	
<i>*Hypericum perforatum</i>	Klamathweed
Juglandaceae	
<i>Juglans hindsii</i>	Northern California black walnut
<i>*Juglans regia</i>	English walnut
Lamiaceae	
<i>Pogogyne zizphoroides</i>	Sacramento mesamint
<i>Trichostema lanceolatum</i>	Vinegar weed
Limnanthaceae	
<i>Limnanthes alba subsp. alba</i>	White meadowfoam
Lythraceae	
<i>*Lythrum hyssopifolium</i>	Hyssop loosestrife
Moraceae	
<i>*Ficus carica</i>	Fig
<i>*Morus alba</i>	White mulberry
Myrsinaceae	
<i>*Anagalis arvensis</i>	Scarlet pimpernel
<i>Anagalis minimus</i>	Chaffweed
Myrtaceae	
<i>*Eucalyptus sp.</i>	Eucalyptus
Oleaceae	
<i>*Olea europaea</i>	Olive

Onagraceae

Clarkia purpurea
Epilobium brachycarpum
Epilobium ciliatum
Epilobium torreyi

Clarkia
Summer cottonweed
Hairy willow-herb
Brook spike-primrose

Papaveraceae

**Papaver somniferum*

Opium poppy

Plantaginaceae

**Plantago coronopus*
Plantago elongata
**Plantago lanceolata*

Cut-leaf plantain
Elongate plantain
English plantain

Polemoniaceae

Navarretia intertexta subsp. *intertexta*
Navarretia leucocephala
Navarretia pubescens

Needle-leaved navarretia
White-flowered navarretia
Downy navarretia

Polygonaceae

**Polygonum aviculare*
**Rumex acetosella*
**Rumex crispus*
**Rumex pulcher*

Common knotweed
Sheep sorrel
Curly dock
Fiddle dock

Portulacaceae

Calandrinia ciliata
Montia fontana

Red maids
Blinks

Ranunculaceae

Delphinium variegatum subsp. *variegatum*
Ranunculus aquatilis
Ranunculus bonariensis var. *triseptus*
**Ranunculus muricatus*

Royal larkspur
Aquatic buttercup
Vernal pool buttercup
Spiny-fruit buttercup

Rosaceae

**Rubus discolor*

Himalayan blackberry

Rubiaceae

**Galium aparine*
**Galium parisiense*

Goose grass
Wall bedstraw

Salicaceae

Populus fremontii subsp. *fremontii*
Salix exigua var. *exigua*
Salix gooddingii
Salix lasiolepis

Fremont cottonwood
Narrow-leaved willow
Goodding's black willow
Arroyo willow

Sapindaceae

Acer negundo var. *californica*

Box elder

Scrophulariaceae

Castilleja attenuata
Collinsia sparsiflora var. *collina*
Gratiola ebracteata
Mimulus guttatus
Mimulus tricolor

Valley tassels
Few-flowered collinsia
Bractless hedge-hyssop
Common monkeyflower
Tricolored monkeyflower

<i>*Parentucellia viscosa</i>	Yellow glandweed
<i>Triphysaria eriantha</i>	Butter-and-eggs
<i>Triphysaria pusilla</i>	Owl's-clover
<i>*Veronica peregrina subsp. xalapensis</i>	Purslane speedwell
Ulmaceae	
<i>*Ulmus sp.</i>	Elm
Vitaceae	
<i>*Vitis vinifera</i>	Cultivated grape

Angiosperms - Monocots

Alismataceae

<i>Alisma plantago-aquatica</i>	Water plantain
<i>Damasonium californicum</i>	Fringed water-plantain

Cyperaceae

<i>Cyperus eragrostis</i>	Tall flatsedge
<i>Eleocharis acicularis</i>	Least spikerush
<i>Eleocharis macrostachya</i>	Creeping spikerush
<i>*Eleocharis pachycarpa</i>	Black sand spikerush

Juncaceae

<i>Juncus bufonius</i>	Toad rush
<i>*Juncus capitatus</i>	Capped rush
<i>Juncus effusus</i>	Soft rush
<i>Juncus mexicanus</i>	Mexican rush
<i>Juncus occidentalis</i>	Slender rush
<i>Juncus uncialis</i>	Inch-high rush
<i>Juncus xiphioides</i>	Iris-leaf rush

Juncaginaceae

<i>Lilaea scilloides</i>	Flowering quillwort
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Liliaceae

<i>Chlorogalum pomeridianum var. pomeridianum</i>	Soap plant
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Poaceae

<i>*Aira caryophyllea</i>	Silver European hairgrass
<i>*Aira elegantissima</i>	Elegant European hairgrass
<i>Alopecurus saccatus</i>	Pacific foxtail
<i>*Avena barbata</i>	Slender wild oat
<i>*Briza maxima</i>	Quaking grass
<i>*Briza minor</i>	Small quaking grass
<i>*Bromus diandrus</i>	Ripgut grass
<i>*Bromus hordeaceus</i>	Soft chess
<i>*Bromus madritensis subsp. rubens</i>	Red brome
<i>Deschampsia danthonioides</i>	Annual hairgrass
<i>*Glyceria declinata</i>	Waxy mannagrass
<i>*Hordeum marinum subsp. gussoneanum</i>	Mediterranean barley
<i>*Hordeum murinum</i>	Foxtail barley
<i>*Lolium multiflorum</i>	Italian ryegrass
<i>*Lolium perenne</i>	Perennial ryegrass
<i>Phalaris lemmonii</i>	Lemmon's canary grass

* Indicates a non-native species

<i>*Poa annua</i>	Annual bluegrass
<i>Poa sp.</i>	Bluegrass
<i>*Polypogon monspeliensis</i>	Annual beard grass
<i>*Taeniatherum caput-medusae</i>	Medusahead
<i>Triticum sp.</i>	Wheat
<i>*Vulpia bromoides</i>	Brome fescue
<i>*Vulpia myuros</i>	Rattail fescue
Potamogetonaceae	
<i>Potamogeton sp.</i>	Pondweed
Themidaceae	
<i>Brodiaea elegans subsp. elegans</i>	Harvest brodiaea
<i>Brodiaea minor</i>	Dwarf brodiaea
<i>Dichelostemma congestum</i>	Ookow
<i>Triteleia hyacinthina</i>	White brodiaea
<i>Triteleia laxa</i>	Ithuriel's spear
Typhaceae	
<i>Typha latifolia</i>	Broad-leaved cattail

Appendix B

Wildlife Species Observed within the Sierra Vista Study Area During Surveys

Amphibians

Pacific chorus frog	<i>Pseudacris regilla</i>
Bullfrog	<i>Rana catesbeiana</i>

Reptiles

Western fence lizard	<i>Sceloporus occidentalis</i>
Southern alligator lizard	<i>Elgaria multicarinata</i>
Gopher snake	<i>Pituophis melanoleucus</i>
Valley garter snake	<i>Thamnophis sirtalis fitchi</i>

Birds

Great blue heron	<i>Ardea herodias</i>
Great egret	<i>Ardea alba</i>
Snowy egret	<i>Egretta thula</i>
Turkey vulture	<i>Cathartes aura</i>
Mallard	<i>Anas platyrhynchos</i>
White-tailed kite	<i>Elanus leucurus</i>
Northern harrier	<i>Circus cyaneus</i>
Swainson's hawk	<i>Buteo swainsoni</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
American kestrel	<i>Falco sparverius</i>
Ring-necked pheasant	<i>Phasianus colchicus</i>
Killdeer	<i>Charadrius vociferus</i>
Mourning dove	<i>Zenaida macroura</i>
Great Horned owl	<i>Bubo virginianus</i>
Northern flicker	<i>Colaptes auratus</i>
Western kingbird	<i>Tyrannus verticalis</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Western scrub-jay	<i>Aphelocoma californica</i>
Yellow-billed magpie	<i>Pica nuttalli</i>
American crow	<i>Corvus brachyrhynchos</i>
Tree swallow	<i>Tachycineta bicolor</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Marsh wren	<i>Cistothorus palustris</i>
American robin	<i>Turdus migratorius</i>
Northern mockingbird	<i>Mimus polyglottos</i>
European starling	<i>Sturnus vulgaris</i>
Lark sparrow	<i>Chondestes grammacus</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Song sparrow	<i>Melospiza melodia</i>
Western meadowlark	<i>Sturnella neglecta</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Brown-headed cowbird	<i>Molothrus ater</i>
House finch	<i>Carpodacus mexicanus</i>

Mammals

Black-tailed jackrabbit
California ground squirrel
Botta's pocket gopher
California vole
Coyote
Raccoon

Lepus californicus
Spermophilus beecheyi
Thomomys bottae
Microtus californicus
Canis latrans
Procyon lotor

Appendix C
Special Status Plant Species Known to Occur in the Sierra Vista Study Area Region

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Alismataceae <i>Sagittaria sanfordii</i> Sanford's arrowhead	Fed: - State: - CNPS: List 1B.2	May-August	Marshes and swamps (assorted shallow freshwater).	Possible. Suitable habitat is present.
Asteraceae <i>Balsamorhiza macrolepis macrolepis</i> Big-scale balsam-root	Fed: - State: - CNPS: List 1B.2	March-June	Cismontane woodland; valley and foothill grassland; [sometimes serpentine].	Unlikely. Disturbance may preclude this species.
Campanulaceae <i>Downingia pusilla</i> Dwarf downingia	Fed: - State: - CNPS: List 2.2	March-May	Valley and foothill grassland (mesic); vernal pools.	Occurs. Observed in vernal pools, wetland swales, and intermittent streams within the study area in 2006 and 2007.
Legenere <i>Legenere limosa</i> Legenere	Fed: - State: - CNPS: List 1B.1	April-June	Vernal pools.	Possible. Marginal habitat is present.
Juncaceae <i>Juncus leiospermus ahartii</i> Ahart's dwarf rush	Fed: - State: - CNPS: List 1B.2	March-May	Vernal pools.	Possible. Suitable habitat is present.
<i>Juncus leiospermus leiospermus</i> Red Bluff dwarf rush	Fed: - State: - CNPS: List 1B.1	March-May	Chaparral; cismontane woodland; valley and foothill grassland; vernal pools; [vernally mesic].	Unlikely. The nearest documented occurrence is considered to be erroneous and a possible misidentification (CDFG 2007).

Appendix C
Special Status Plant Species Known to Occur in the Sierra Vista Study Area Region

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Malvaceae <i>Hibiscus lasiocarpus</i> Rose-mallow	Fed: - State: - CNFS: List 2.2	August-September	Marshes and swamps (freshwater).	Possible. Marginal habitat onsite.
Poaceae <i>Agrostis hendersonii</i> Henderson's bent grass	Fed: - State: - CNFS: List 3.2	April-May	Valley and foothill grassland (mesic); vernal pools.	Possible. Marginal habitat is present.
<i>Orcuttia tenuis</i> Slender Orcutt grass	Fed: FT State: CE CNFS: List 1B.1	May-July	Vernal pools.	Unlikely. Marginal habitat onsite and no known occurrences within Placer County.
<i>Orcuttia viscida</i> Sacramento Valley Orcutt grass	Fed: FE State: CE CNFS: List 1B.1	May-June	Vernal pools.	Unlikely. Marginal habitat onsite and no known occurrences within Placer County.
Polemoniaceae <i>Navarretia myersii myersii</i> Pincushion navarretia	Fed: - State: - CNFS: List 1B.1	May-May	Vernal pools.	Possible. Suitable habitat is present.
Scrophulariaceae <i>Cordylanthus mollis hispidus</i> Hispid bird's-beak	Fed: - State: - CNFS: List 1B.1	June-September	Meadows; playas; [alkaline]. 1-155m.	None. Suitable habitat (alkaline) does not occur within the study area.

Appendix C

Special Status Plant Species Known to Occur in the Sierra Vista Study Area Region

Family	Taxon	Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
	<i>Gratiola heterosepala</i>	Bogg's Lake hedge-tyssop	Fed: - State: CE CNPS: List 1B.2	April-June	Marshes and swamps (lake margins); vernal pools. Below 1200 m.	Possible. Marginal habitat is present.

***Status**

Federal:
 FE - Federal Endangered
 FT - Federal Threatened
 FPE - Federal Proposed Endangered
 FPT - Federal Proposed Threatened
 FC - Federal Candidate

State:
 CE - California Endangered
 CT - California Threatened
 CR - California Rare
 CSC - California Species of Special Concern

CNPS (California Native Plant Society - List.RED Code):
 List 1A - Extinct
 List 1B - Plants rare, threatened, or endangered in California and elsewhere
 List 2 - Plants rare, threatened, or endangered in California, more common elsewhere
 List 3 - Plants about which more information is needed, a review list
 List 4 - Plants of limited distribution, a watch list
 RED Code
 1 - Seriously endangered (>80% of occurrences threatened)
 2 - Fairly endangered (20 to 80% of occurrences threatened)
 3 - Not very endangered (<20% of occurrences threatened)

Appendix D
Special Status Wildlife Species Known to Occur in the Sierra Vista Study Area Region

	Status*	Habitat	Probability on Project Site
Invertebrates			
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Fed: FT State: - Other: -	Vernal pools and other temporary bodies of water in southern and Central Valley of California. Most common in smaller grass or mud bottomed swales or basalt flow depression pools in unplowed grasslands.	Occurs. Observed by ECORP during 2005-2006 wet season surveys (ECORP 2006a).
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	Fed: FE State: - Other: -	Found in vernal pools in the Central Valley of California and in the San Francisco Bay area. Inhabits vernal pools with clear to highly turbid water.	Unlikely. Not detected during ECORP 2005-2006 surveys and restricted known range in western Placer County.
Conservancy fairy shrimp <i>Brachinecta conservatio</i>	Fed: FE State: - Other: -	Endemic to the Central Valley and southern coastal regions of California. Prefers larger, turbid, cool-water vernal pools located in alluvial swales.	Unlikely. Not detected during ECORP 2005-2006 surveys and restricted known range in western Placer County.
Insects			
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	Fed: FT State: - Other: *	Requires host plant, elderberry (<i>Sambucus</i> spp.) for most of its life cycle. Shrubs must have stem diameters at ground level of 1.0 inch or greater and shrubs must be found less than 3,000 feet in elevation. Typically riparian and upland associated.	None. No elderberry shrubs present.
Fish			
Central Valley steelhead <i>Oncorhynchus mykiss</i>	Fed: FT State: - Other: -	Found in the Sacramento and San Joaquin Rivers and their tributaries. Migrates through the estuary to spawning grounds. Eggs are laid in small and medium gravel and need a good water flow to survive.	None. No suitable habitat within study area.
Winter-run Chinook salmon, Sacramento River <i>Oncorhynchus tshawytscha</i>	Fed: FE State: CSC Other: -	ESU covers winter-run salmon in Sacramento River and its tributaries in California, as well as two artificial propagation programs.	None. No suitable habitat within study area.
Central Valley spring-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	Fed: FT State: CT Other: -	ESU covers spring-run salmon in Sacramento River and primarily found in the following tributaries: Butte, Big Chico, Deer, and Mill creeks and the Feather River.	None. No suitable habitat within study area.

Appendix D
Special Status Wildlife Species Known to Occur in the Sierra Vista Study Area Region

	Status*	Habitat	Probability on Project Site
Delta smelt <i>Hypomesus transpacificus</i>	Fed: FT State: CT Other: -	Endemic to the Sacramento-San Joaquin Delta in coastal and brackish waters. Occurs seasonally in Suisun and San Pablo bays. Spawning usually occurs in dead-end sloughs and shallow channels.	None. No suitable habitat within study area.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	Fed: FT State: CSC Other: -	Found in: (1) the Delta, (2) Suisun Bay, (3) Suisun Marsh, (4) Napa River, (5) Petaluma River, and (6) other parts of the Sacramento-San Joaquin Estuary. Requires flooded vegetation for spawning and rearing.	None. No suitable habitat within study area.
Amphibians			
California tiger salamander <i>Ambystoma californiense</i>	Fed: FT State: CSC Other: -	Occurs in annual grassland habitat (<1500 feet) and occasionally in grassy understorey of valley-foothill hardwood habitats where lowland aquatic sites are available for breeding. Breeds primarily in vernal pools.	Unlikely. Not detected during branchiopod or spadefoot surveys (ECORP 2006a; 2006d) and no recent or historical records from western Placer County.
Western spadefoot <i>Spea hammondi</i>	Fed: - State: CSC Other: -	Found primarily in grassland habitats, but may occur in valley and foothill woodlands. Requires vernal pools, seasonal wetlands, or stock ponds for breeding and egg laying. Prefers more turbid pools for predator avoidance.	Possible. Not detected during surveys (ECORP 2006d); however, suitable habitat in study area and known from nearby locations.
California red-legged frog <i>Rana aurora draytoni</i>	Fed: FT State: CSC Other: -	Occurs in lowlands and foothills in deeper pools and slow-moving streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Unlikely. Marginally suitable habitat in study area and no recent records from western Placer County.
Reptiles			
Western pond turtle <i>Actinemys marmorata</i>	Fed: - State: CSC Other: -	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying.	Unlikely. Marginally suitable habitat in study area.
Giant garter snake <i>Thamnophis gigas</i>	Fed: FT State: CT Other: -	Primarily associated with marshes and sloughs, less with slow-moving creeks, and absent from larger rivers. Nocturnal retreats include mammal burrows and crevices. During the day, basks on emergent vegetation such as cattails and tules.	Unlikely. Marginally suitable habitat in study area.

Appendix D

Special Status Wildlife Species Known to Occur in the Sierra Vista Study Area Region

Status*	Habitat	Probability on Project Site
Birds		
Great blue heron <i>Ardea herodias</i> Fed: - State: - Other: *	Colonial nester in tall trees near foraging areas, such as marshes, lake margins, tidal-flats, rivers, and streams. Also forages in open fields and cropland.	Unlikely. Marginal rookery habitat occurs in the study area.
Great egret <i>Ardea alba</i> Fed: - State: - Other: *	Colonial nester in tall trees. Rookeries usually located near marshes, tidal-flats, irrigated pastures, and the margins of rivers and lakes.	Unlikely. Marginal rookery habitat occurs in the study area.
Snowy egret <i>Egretta thula</i> Fed: - State: - Other: *	Colonial nester in dense tules. Rookeries are situated close to foraging areas, which include marshes, tidal flats, streams, meadows, and lake margins.	Unlikely. Marginal rookery habitat occurs in the study area.
Black-crowned night-heron <i>Nycticorax nycticorax</i> Fed: - State: - Other: *	Colonial nester in trees and sometimes tule patches along large rivers and salt and freshwater marshes. Rookeries are located adjacent to foraging areas.	Unlikely. Marginal rookery habitat occurs in the study area.
White-tailed kite <i>Elanus leucurus</i> Fed: - State: CFP Other: *	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Occurs. Possible white-tailed kite nest observed in 200-acre addition (2007).
Bald eagle <i>Haliaeetus leucocephalus</i> Fed: FT State: CFP Other: *	Occurs along shorelines, lake margins, and rivers. Nests in large, old-growth or dominant trees with open branches.	None. No suitable habitat within study area.
Northern harrier <i>Circus cyaneus</i> Fed: - State: CSC Other: -	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; seldom found in wooded areas. Found in or near freshwater and salt marshes. Nests on the ground in shrubby vegetation near marsh edge.	Occurs. Observed foraging in study area (2007).
Swainson's hawk <i>Buteo swainsoni</i> Fed: - State: CT Other: *	Breeds in open areas with scattered trees; prefers riparian and sparse oak woodland habitats. Requires nearby grasslands, grain fields, or alfalfa for foraging. Rare breeding species in Central Valley.	Occurs. Observed nesting in the 200-acre addition (2007).

Appendix D
Special Status Wildlife Species Known to Occur in the Sierra Vista Study Area Region

	Status*	Habitat	Probability on Project Site
Ferruginous hawk <i>Buteo regalis</i>	Fed: - State: CSC Other: *	Winters in California where it inhabits open grasslands, sagebrush flats, desert scrub, foothill woodlands, and grasslands.	Likely in winter only.
California black rail <i>Lateralus jamaicensis coturniculus</i>	Fed: - State: CT Other: *	Inhabits salt, fresh, and brackish water marshes with little daily and/or annual water fluctuations. In freshwater habitats, preference is for dense bulrush and cattails. Several scattered populations documented from Butte Co. to southern Nevada Co.	Unlikely. Habitat exists along Curry Creek, but few recent regional occurrences.
Greater sandhill crane <i>Grus canadensis tabida</i>	Fed: - State: CT Other: CFP	Nesting habitat in NE California includes wet meadows that are often interspersed with emergent vegetation. Winters in the Central Valley using irrigated pastures as habitat.	Unlikely. Marginally suitable habitat in study area.
Long-billed curlew <i>Numenius americanus</i>	Fed: - State: CSC Other:	Breeds in short grass prairies and wet meadows in northeastern California. Sometimes a visitor to coastal areas. Non-breeders may be found in the Central Valley during the summer.	Likely for wintering foraging and roosting.
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	Fed: FC State: CE Other: -	Inhabits riparian forests along the broad, lower floodplains of larger rivers. Nests in thickets of willows and cottonwoods with an understory of blackberry, nettle, or wild grape.	None. No suitable habitat within study area.
Burrowing owl <i>Athene cunicularia</i>	Fed: - State: CSC Other: *	Found in annual and perennial grasslands. Nests in burrows dug by small mammals, primarily ground squirrels.	Occurs. One individual observed in 2005. Suitable habitat exists.
Loggerhead shrike <i>Lanius ludovicianus</i>	Fed: - State: CSC Other: *	Found in broken woodlands, shrubland, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	Occurs. Observed foraging in study area (2007).
Purple martin <i>Progne subis</i>	Fed: - State: CSC Other: *	Breeds in riparian woodland, oak woodland, open coniferous forests. Secondary cavity nester. Requires nest sites close to open foraging areas of water or land.	None. No suitable habitat within study area.

Appendix D

Special Status Wildlife Species Known to Occur in the Sierra Vista Study Area Region

Status*	Habitat	Probability on Project Site
Bank swallow <i>Riparia riparia</i> Fed: - State: CT Other: *	Colonial nester near riparian and other lowland habitats. Requires vertical banks or cliffs with fine-textured, sandy soils near streams, rivers, and lakes.	None. No suitable habitat within study area.
Tricolored blackbird <i>Agelaius tricolor</i> Fed: - State: CSC Other: *	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Possible. Suitable habitat in study area.
Mammals		
Yuma myotis <i>Myotis yumanensis</i> Fed: - State: - Other: *	Inhabits forests and woodlands. Requires water over which it feeds. Roosts colonially in a variety of natural and human-made sites, including caves, mines, buildings, bridges, and trees.	Possible for foraging, unlikely for roosting.
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i> Fed: - State: CSC Other: *	Found in a variety of habitats. Most common in mesic sites with forest or woodland component. Roosting and maternity sites in caves, mines, lava tubes, tunnels, and buildings. Gleans insects from brush or trees and feeds along habitat edges.	Possible for foraging, unlikely for roosting.
Pallid bat <i>Antrozous pallidus</i> Fed: - State: CSC Other: *	Occurs in grasslands, woodlands, deserts & urban habitats; open habitat required for foraging. Common in dry habitats with rocky outcrops, cliffs, and crevices for roosting. Roosts include caves, mines, bridges & occasionally hollow trees, buildings.	Possible for foraging, unlikely for roosting.

***Status** Federal: FE - Federal Endangered
 FT - Federal Threatened
 FPE - Federal Proposed Endangered
 FPT - Federal Proposed Threatened
 FC - Federal Candidate
 FPD - Federal Proposed for Delisting

State: CE - California Endangered
 CT - California Threatened
 CR - California Rare
 CC - California Candidate
 CFP - California Fully Protected
 CSC - California Species of Special Concern

Other: Some species have protection under the other designations, such as the California Department of Forestry Sensitive Species, Bureau of Land Management Sensitive Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game.

