

3.4 BIOLOGICAL RESOURCES

3.4.1 INTRODUCTION

This section describes effects to biological resources that could result from implementation of the Proposed Action or its alternatives, and is based on information drawn from the following sources:

- Sierra Vista Biological Resources Assessment prepared by North Fork Associates for the City of Roseville, dated June 9, 2009;
- Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, dated December 15, 2005;
- West Roseville Specific Plan Environmental Impact Report (EIR), dated February 2009;
- Sierra Vista Specific Plan EIR Technical Memorandum: Effects of Changed Water Management operations on Fisheries and Water Quality Impacts Previously Disclosed in the Water Forum Proposal EIR, prepared by Robertson-Bryan, Inc., and HDR for the City of Roseville, dated October 2009;
- Conceptual Mitigation Plan for the Westbrook project prepared by Gibson & Skordal LLC, dated August 2012; and
- Biological Assessment for the Westbrook project prepared by Gibson & Skordal LLC, dated November 2012.

3.4.2 AFFECTED ENVIRONMENT

3.4.2.1 Key Terms Used in this Section

The term “project site” in this section refers to the Westpark Associates property that makes up the approximately 397-acre (161-hectare) Westbrook project site and is under application for a Department of Army (DA) permit. All resources, activities, and impacts within the 397-acre (161-hectare) project site are described in this section as being “on the project site” or “on-site.”

The term “off-site” refers to a 250-foot (76-meter) band along the project site boundary. The wetlands existing within the southern portion of this band were delineated as part of the Sierra Vista Specific Plan, which were verified by the U.S. Army Corps of Engineers (USACE) in 2010.¹ Two of the three properties to the south of the project site (Federico and Conley properties) are currently the subject of DA permit applications and the Proposed Action’s off-site impacts on these properties is also being evaluated as part of the DA permit applications for the Federico and Conley properties. The project site and this off-site impact area are shown in **Figure 3.4-1, Project Impact Area**.

¹ The properties that lie to the south of the project site within the Sierra Vista Specific Plan area include the Federico property, Conley property, and Chan property.

3.4.2.2 Regional Setting

For the purposes of this section, the project region is defined as the southwestern portion of Placer County. The project site is located in the transition zone between land developed with urban uses to the east and land developed for intensive agriculture to the west. This transition zone is marked by older alluvial soils with well-developed hardpans and some dense clay pans. The poorly drained soils of this transition zone are primarily utilized for grazing, while level, well-drained soils on the valley floor to the west have been largely converted to agriculture. Evidence of hardpans and claypans throughout the eastern Sacramento Valley is demonstrated most effectively at the soils' surface by the presence of seasonally inundated areas—vernal pools and swales. Habitat types typical of the region include annual grasslands, oak woodlands, vernal pool and swale complexes, seasonal seeps and marshes, ponds, riparian forest and scrub, perennial streams, cropland (especially irrigated rice fields), and scattered areas of ruderal vegetation.

3.4.2.3 Project Site – Location and Setting

The project site consists of flat to gently rolling topography with elevations ranging from approximately 75 to 125 feet (23 to 38 meters) above mean sea level. The project site supports non-native annual grassland and is uncultivated at the present time, although it was historically used for wheat cultivation and as pastureland. The project area has been dry-farmed in at least two of the past six years. The site was used for grazing in the past but is not grazed at the present time. There is also evidence of plowing and disking throughout the site. Other developed features at the project site include a transmission line corridor that transects the western half of the project site, dirt roads, and fences (North Fork Associates 2009).

The surface runoff within the project site flows to the north and west with the majority of the site draining to the north. The surface runoff on the eastern three-quarters of the project site flows through a series of swales to the north. At the northern border of the study area, these swales flow into culverts that are part of the West Roseville Specific Plan developments storm drainage system. The surface runoff from the western one-quarter of the project site flows through a series of swales and an intermittent stream to the west.

The main hydrologic feature in the project site is the West Plan tributary of Curry Creek, an intermittent stream that flows from east to west through the northwestern portion of the project site and a second intermittent stream (South Fork of West Plan tributary) which is also located in the same area south of West Plan tributary. The two streams converge near the western boundary of the project site and flow westerly through agricultural ditches to eventually flow into Curry Creek. Curry Creek drains into the Natomas Main Drainage Canal which ultimately drains into the Sacramento River. Other water features on the project site include vernal pools and seasonal wetland swales embedded within the annual grassland, and other seasonal wetlands that are saturated and/or inundated during the rainy season. The predominant plant community is annual grassland (North Fork Associates 2009).

The climate in the project region is mild with average annual maximum temperature of 73.6 degrees Fahrenheit (23.1 degrees Celsius) and average annual minimum temperature of 49.0 degrees Fahrenheit (9.4 degrees Celsius). Summers are typically dry and the average annual rainfall (the majority of which usually occurs in winter) is approximately 20 inches (51 centimeters).

As described in more detail in **Section 3.8, Geology, Soils, and Minerals**, the site is situated on Pleistocene-aged sediments and the western portion of the site 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. In addition, the soils within the project site include Cometa-Fiddymment Complex, Fiddymment-Kaseberg loams, and, San Joaquin-Cometa sandy loams. These soils occur on low terraces, are shallow to moderately deep, and underlain by hardpans except for Cometa which is underlain by a dense clay pan. The average depth to hardpan or clay pan in these soils ranges from 18 to 40 inches (approximately 46 to 102 centimeters). As the project site has been historically and recently disked, plowed and dry-farmed, the soils are not compacted and are well aerated, and the natural micro topography has been eliminated in many areas.

The project site is bordered to the east by existing development in the West Plan area and on the south by the Sierra Vista Specific Plan area which is proposed for development but is undeveloped at the present time and has a landscape that is very similar to the project site, dominated by annual grasslands. To the west of the project site, lands are either grazed annual grasslands or actively farmed rice lands. Lands to the north lie within the West Roseville Specific Plan area and are approved for development although they are not developed at this time and consist mostly of grazed annual grasslands.

3.4.2.4 Project Site – Biological Communities

The project site has three general biological communities: annual grasslands; stream complex; and rural mix landscape. **Figure 3.4-2, On-Site Biological Communities**, presents the biological communities on the project site and **Table 3.4-1, Project Site Biological Communities**, presents the acreage of each community on the site. The site also supports a number of wetland features that are embedded in the annual grasslands. The project site wetlands are discussed in **Subsection 3.4.2.5, Project Site – Waters of the United States** below.

**Table 3.4-1
Project Site Biological Communities**

Type	Acres
<i>Biological Communities</i>	
Annual grassland	379.3
Stream complex	1.0
Rural mix landscape	16.7

Source: Impact Sciences 2012

Annual Grassland

The dominant plant community within the project site is California annual grassland. California annual grassland, also known as non-native grassland, is typically dominated by non-native annual grass species but can also contain a diversity of native grasses and native and non-native flowering plants. The annual grassland on the project site is highly disturbed. Although the project site is currently fallow, there is evidence of former dry farming, regular disking, and cattle grazing. There is also evidence that portions were used for crop cultivation. The western portions of the project site appear to have been historically heavily grazed; however, during the field surveys no cattle were observed on any portion of the project site. The areas along the southern site boundary appeared to be recently and regularly disked. The fallow areas are dominated by non-native grass species such as medusahead grass (*Taeniatherum caput-medusae*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), slender wild oats (*Avena barbata*), yellow star-thistle (*Centaurea solstitialis*), bindweed (*Convolvulus arvensis*), vetch (*Vicia* spp.), filaree (*Erodium* spp.), Fitch's spikeweed (*Centromadia fitchii*), and virgate tarweed (*Holocarpha virgata* ssp. *virgata*). Native plant species observed on the project site within the annual grassland include common fiddleneck (*Amsinckia menziesii*), rusty popcornflower (*Plagiobothrys nothofulvus*), ookow (*Dichelostemma congestum*), white brodiaea (*Triteleia hyacinthina*), and Ithruviel's spear (*Triteleia laxa*) (North Fork Associates 2009). The annual grassland on the project site provides nesting sites, roosting, and foraging habitat for various wildlife species, as described in **Section 3.4.2.7 Wildlife**.

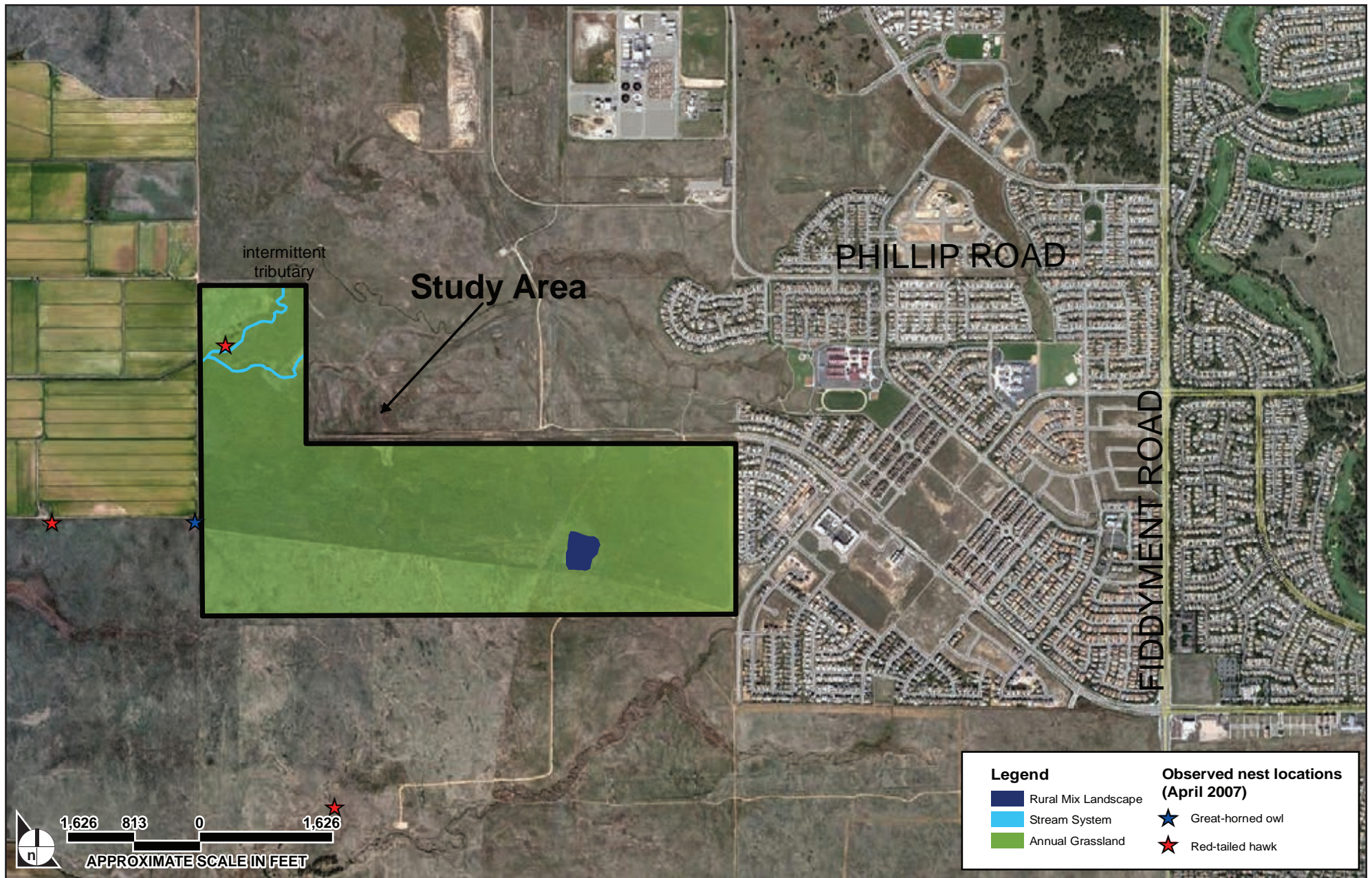
Wetlands, seasonal drainages, vernal pools, and other seasonal wetlands are dispersed throughout the annual grassland community. These water features are described in detail in **Section 3.4.2.5 Project Site – Waters of the United States** below. The West Plan tributary of Curry Creek, located in the northwestern corner of the project site, also transects this community and is discussed as a separate biological community in subsection **Stream Complex**, below.

Stream Complex

The project site contains two intermittent streams – West Plan tributary and a south fork of the tributary. The two streams are tributary to Curry Creek and are considered waters of the U.S. Intermittent streams flow during rain events and for a period of time after rain events. The streams do not support emergent marsh vegetation, and at the time of the field surveys in April 2007, the streams were mostly dry, except for some pools. A cluster of Fremont cottonwood trees (*Populus fremontii*) occurs along one of the Curry Creek tributary streams near the project site's northwestern boundary (North Fork Associates 2009).

Rural Mix Landscape

The site of a former farmstead is located in the eastern portion of the project site. The farmstead consists of a structure foundation, windmill foundation, a well hole, and various types of farm equipment. The site is located on a knoll and includes a fence and a stand of trees around the perimeter as well as a dirt road encircling the knoll top.



SOURCE: North Fork Associates, April 2007

FIGURE 3.4-2

On-Site Biological Communities

3.4.2.5 Project Site – Waters of the United States

The project site contains a total of 12.55 acres (5.08 hectare) of waters of the U.S., which consist of the intermittent streams, seasonal wetlands, vernal pools, and wetland swales (**Table 3.4-2, Project Impact Area Waters of the U.S.**). An additional 2.07 acres (0.84 hectare) of jurisdictional waters are located within the off-site impact area adjacent to the project site. Information about these waters is based on several wetland delineations that were combined and presented to the USACE by ECORP in 2006 and verified by the USACE in 2010. The following summarizes the aquatic resources that occur on the project site.

**Table 3.4-2
Project Impact Area Waters of the U.S. (in Acres)**

Type	Project Site	Off-Site Impact Area	Total
Vernal pools	1.81	0.79	2.60
Wetland swales	7.31	0.48	7.80
Swale depressional	1.12	0.06	1.18
Seasonal wetlands	1.35	0.03	1.38
Intermittent streams	0.95	0.15	1.10
Pond	0.00	0.56	0.56
Total	12.55	2.07	14.62

Source: Gibson & Skordal 2012a

Vernal Pools

Vernal pools are seasonally inundated wetlands occurring within topographic depressions in areas that are underlain by an impermeable subsurface layer, such as hardpan, claypan, or bedrock. These topographic depressions can occur as isolated features in the landscape or in association with swales. Vernal pools at the project site are underlain by hardpans or claypans that do not allow water from winter rains to seep into the lower soil column. Instead, the water accumulates or “ponds,” in depressions above the hardpan or claypan.

Vernal pools typically flood to a depth of 2 inches (5 centimeters) to over 1 foot (0.3 meter) in the winter and spring and dry out completely in the summer and fall months. Subsequently, vernal pools support specialized vegetation and wildlife restricted primarily to vernal pools. They typically support a variety of invertebrate populations, including federally listed branchiopods. The plant communities within vernal pools are typically dominated by vernal pool endemics, a majority of which are native annuals. The vernal pool plant species and some of the wildlife species (e.g., vernal pool invertebrates) are adapted to, and depend on, the cyclical inundation of water and complete desiccation of the soil that occurs in vernal pools. Most vernal pool-associated plant and wildlife species life cycles can only be completed by the progression of inundation and desiccation.

There are approximately 1.81 acres (0.73 hectare) of vernal pools on the project site (Gibson & Skordal 2012a) and 0.79 acre in the off-site impact area. Due to past land practices (cultivation, grazing, and disking), most of the vernal pools on the project site show signs of disturbance. Plant species found in these vernal pools include double-horned downingia (*Downingia bicornuta*), Solano downingia (*Downingia ornatissima*), Fremont's goldfields (*Lasthenia fremontii*), stipitate popcornflower (*Plagiobothrys stiptatus*), dwarf woolly heads (*Psilocarphus brevissimus*), Vasey's coyote-thistle (*Eryngium vaseyi*), vernal pool buttercup (*Ranunculus bonariensis* var. *trisepalus*), Pacific foxtail (*Alopecurus saccatus*), and annual hairgrass (*Deschampsia danthonioides*) (North Fork Associates 2009). Depending on their depth and level of disturbance, other non-native species common to seasonal wetlands may also be present as dominants or associates. Under the USACE's classification system, vernal pools are differentiated from depressional seasonal wetlands based on the dominance of vernal pool endemic plants.

Wetland Swales and Swale Depressional Habitat

Wetland swales are sloping linear vegetated wetlands that do not contain an ordinary high water mark or exhibit the bed-and-bank morphology typical of streams. They are inundated in the winter and early spring during and for up to several weeks following rainfall events. They often have embedded depressions (swale depressional) that pond water to a greater depth than the swale and for durations similar to depressional seasonal wetlands and vernal pools. Swales can connect vernal pools into large complexes. Swales provide important hydrology to the pool and wetland basins and also provide linkages between plant and invertebrate populations for genetic exchange. Swales are essential to the health of vernal pool ecosystems and provide habitat values similar to vernal pools.

There are about 7.31 acres (2.96 hectares) of wetland swales and about 1.12 acres (0.45 hectare) of swale depressional habitat on the project site and about 0.48 acre of wetland swales and 0.06 acre of swale depressional habitat in the off-site impact area. Wetland swales are scattered throughout the project site and flow either into the intermittent streams on the project site or into a storm drain located in the West Roseville Specific Plan area. Most of these features are relatively disturbed due to regular disking. Seasonal wetland swales along the northern site boundary support upland species such as cultivated wheat (*Triticum* sp.), along with wetland species such as creeping spikerush, Vasey's coyote-thistle, and iris-leaved rush (*Juncus xiphioides*). The most common plants occurring within the wetland swales include perennial rye (*Lolium perenne*), Mediterranean barley (*Hordeum marinum*), rabbit's-foot grass (*Polypogon monspeliensis*), and hyssop loosestrife (*Lythrum hyssopifolia*).

Seasonal Wetlands

The term seasonal wetland is used within the context of this EIS to describe depressions that fill naturally during the winter and early spring through direct precipitation and are dry during most of the year. Although their hydrology may be similar to that of vernal pools, they do not support typical vernal pool vegetation diversity and abundance. They support mostly a non-native, "wetland generalist" flora and are not dominated by vernal pool endemics.

There are about 1.35 acres (0.55 hectare) of seasonal wetlands on the project site and about 0.03 acre in the off-site impact area (Gibson & Skordal 2012a). Depths of these seasonal wetlands range from a few inches

up to 2 feet (0.6 meter). These seasonal wetlands have also been degraded as a result of disturbance from past farming and/or disking for fire suppression. These seasonal wetlands are likely vernal pools that have been disturbed to the extent that they no longer support a vernal pool plant community (Gibson & Skordal 2012a). Common vegetation within the seasonal wetlands includes curly dock (*Rumex crispus*), perennial rye, spiny-fruit buttercup (*Ranunculus muricatus*), tall flatsedge (*Cyperus eragrostis*), Vasey's coyote thistle, and European mannagrass (*Glyceria declinata*) (North Fork Associates 2009). Common plant species include perennial rye, Mediterranean barley, rabbit's-foot grass, hyssop loosestrife, mannagrass (*Glyceria declinata*), toad rush (*Juncus bufonius*), and slender popcorn flower (*Plagiobothrys stipitatus micranthus*).

Intermittent Stream

Intermittent streams flow during and after rain events. Intermittent streams usually have a groundwater component or another water source that provides water in the absence of precipitation. Two intermittent streams with an area of about 0.95 acre (0.38 hectare) are located in the northwestern corner of the project site and there is 0.15 acre (0.06 hectare) of intermittent creek in the off-site impact area. The streams, which are tributary to Curry Creek, did not contain flowing water at the time of the field surveys in April 2007. However, small pools of water were observed at several locations throughout the course. These deeper areas supported native creeping spikerush (*Eleocharis palustris*) and fringed water-plantain (*Damasonium californicum*). As discussed above, several large Fremont cottonwood trees are located along the stream. The intermittent streams on the project site do not flow long enough to support fish species, including anadromous fish, such as Chinook salmon or steelhead.

3.4.2.6 Project Site – Tree Resources

Very few trees occur on the project site and no oak woodland habitat occurs with the site. The Arborist Survey Report prepared by ECORP identified a cluster of Fremont cottonwood trees in the northwestern portion of the project site along the intermittent creeks (North Fork Associates 2009). A small stand of trees is located in the southeastern portion of the project site. These trees were likely planted in association with a farmstead that formerly existed in this portion of the project site.

3.4.2.7 Project Site – Wildlife

The project site and surrounding undeveloped landscapes provide suitable habitat for many wildlife species. During the winter and spring months when vernal pools, 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, and several amphibian species (North Fork Associates 2009).

Annual grassland provides suitable habitat for several raptors, particularly for foraging. Several 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 (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), and American kestrel (*Falco sparverius*) are dependent on grassland and agricultural

foraging habitats. During the field surveys in April 2007, one red-tailed hawk nest was found in the northwestern portion of the project site along the intermittent creek. Three additional active red-tailed hawk nests, one active Swainson's hawk nest, one potentially active white-tailed kite nest, and one active great-horned owl (*Bubo virginianus*) nest were found on adjacent lands to the west and south. Nest locations are identified in **Figure 3.4-2**. Northern harrier and American kestrel were observed foraging in the project area. During winter, additional species, such as ferruginous hawk (*Buteo regalis*), rough-legged hawk (*Buteo lagopus*), Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*) also utilize these landscapes (North Fork Associates 2009).

The grassland habitats are also important nesting habitat for many ground-nesting birds, such as western meadowlark (*Sturnella neglecta*) and California horned lark (*Eremophila alpestris*) and are home to several common reptiles such as gopher snake (*Pituophis melanoleucus*), valley garter snake (*Thamnophis sirtalis fitchi*), and western fence lizard (*Sceloporus occidentalis*) (North Fork Associates 2009).

3.4.2.8 Special-Status Species

Special-status species are plants and wildlife that are legally protected under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) or other regulations, and other plants and wildlife that are considered sufficiently rare to warrant discussion in this EIS under the National Environmental Policy Act (NEPA). Special-status plants and animals that warrant discussion in an EIS are defined as:

- Species listed or proposed for listing as Threatened or Endangered under the ESA (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [FR] [proposed species])
- Species that are candidates for possible future listing as Threatened or Endangered under the ESA (72 FR 69034, December 6, 2007)
- Species listed or candidates for listing by the State of California as Threatened or Endangered under CESA (14 CCR 670.5)
- Species that meet the definitions of Rare, Threatened, or Endangered under the California Environmental Quality Act (CEQA) (*State CEQA Guidelines*, Section 15380)
- Plants listed as rare or endangered under the California Native Plant Protection Act (NPPA) (California Fish and Game Code, Section 1900 et seq.)
- Plants considered by the California Native Plant Society (CNPS) to be Rare, Threatened, or Endangered in California (Lists 1B and 2 in California Native Plant Society [2008])
- Plants listed by CNPS as those about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in California Native Plant Society [2008]) that may be included as special-status species on the basis of local significance or recent biological information
- Animals listed on California Department of Fish and Game's Special Animals List (California Fish and Game 2008) Animals fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians])

The California Natural Diversity Data Base and the California Native Plant Society Inventory lists of species identifies 13 special-status plants and 34 special-status wildlife species for the project region. Of the 13 plant species and 34 wildlife species, 12 plants and 25 animals either occur within the project site or have some potential to occur because the project site has some areas of suitable habitat or the species are known from nearby locations (North Fork Associates 2009).

The Applicant conducted special-status species surveys at the project site in 2005, 2006, and 2007. These included surveys of wet-season branchiopods, western spadefoot, raptors, and special-status plants. Information from these surveys is also presented below (North Fork Associates 2009).

Special-Status Plants

Twelve plant species have the potential to occur on or near the project site (North Fork Associates 2009). Special-status plant species that occur or have potential to occur in or near the project site are presented in **Table 3.4-3, Special-Status Plants with Potential to occur on the Project Site**, below. The Applicant conducted determinant-level special-status plant surveys of the project site throughout the spring and early summer of 2006. In addition, North Fork Associates surveyed the site in winter 2006 and April 2007. Dwarf downingia is the only special-status plant species known to occur within the project site. It is not state or federally listed, but is on the CNPS List 2.2. Potential habitat for other special-status plant species is present but no other special-status plant species were detected during presence/absence surveys. Based on the habitat present as well as plant surveys of the project site, neither of the two federally listed plant species (slender Orcutt grass and Sacramento Valley Orcutt grass) is likely to occur on the site.

**Table 3.4-3
Special-Status Plants with Potential to occur on the Project Site**

Name	Status Federal/State/ CNPS	Habitat	Likelihood of Occurrence in Project Region/Site
Henderson's bentgrass <i>Agrostis hendersonii</i>	-/-/3.2	Moist places in grasslands, vernal pools	Marginal habitat is present.
Big-scale balsam-root <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	-/-/1B.2	Cismontane woodland; valley and foothill grassland	Disturbance may preclude this species. Not observed during presence/absence surveys.
Dwarf downingia <i>Downingia pusilla</i>	-/-/2.2	Valley and foothill grassland; vernal pools	Known to occur in the project vicinity. Suitable habitat present on-site.
Bogg's Lake hedge-hyssop <i>Gratiola heterosepala</i>	-/E/1B.2	Vernal pools	Marginal habitat is present.
Rose mallow <i>Hibiscus lasiocarpus</i>	-/-/2.2	Marshes and swamps (freshwater)	No suitable habitat present. Unlikely to occur.
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	-/-/1B.2	Vernal pools	Marginal habitat is present.
Red Bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i>	-/-/1B.2	Vernal pools	Marginal habitat present on-site. Unlikely to occur.

Name	Status Federal/State/CNPS	Habitat	Likelihood of Occurrence in Project Region/Site
Legenere <i>Legenere limosa</i>	-/-/1B.1	Vernal pools and seasonal wetlands	Suitable habitat is present.
Pincushion navarretia <i>Navarretia myersii</i> spp. <i>myersii</i>	-/-/1B.1	Vernal pools	Suitable habitat is present.
Slender Orcutt grass <i>Orcuttia tenuis</i>	T/E/1B.1	Vernal pools	Marginal habitat occurs in the project area. Prefers larger, deeper pools. Not known in Placer County. Not observed during presence/absence surveys.
Sacramento Valley Orcutt grass <i>Orcuttia viscida</i>	T/E/1B.1	Vernal pools	Marginal habitat occurs in the project area. Prefers larger, deeper pools. Not known in Placer County. Not observed during presence/absence surveys.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	-/-/1B.2	Marshes, swamps, and other wetlands	No suitable habitat present on-site.

Status explanations:

Federal

- = No status
- E = Listed as Endangered under the federal Endangered Species Act.
- T = Listed as Threatened under the federal Endangered Species Act.

State

- = No status
- E = Listed as Endangered under the California Endangered Species Act.
- R = Listed as Rare under the California Endangered Species Act.

California Native Plant Society

- 1B = List 1B species: Rare, Threatened, or Endangered in California and elsewhere.
- 2 = List 2 species: Rare, Threatened, or Endangered in California, but more common elsewhere.
- 3 = List 3 species: plants about which we need more information.
- 4 = List 4 species: Plants of limited distribution.
- 0.1 = Seriously Endangered in California
- 0.2 = Fairly Endangered in California
- 0.3 = Not very Endangered in California

Special-Status Wildlife

Table 3.4-4, Special Status Wildlife Species with Potential to occur on the Project Site, below, presents wildlife species that were observed on the project site during field surveys or have some potential to occur because the project site has some areas of suitable habitat or because the species are known from nearby locations.

**Table 3.4-4
Special Status Wildlife Species with Potential to Occur on the Project Site**

Common and Scientific Names	Status Federal/ State/ Other	Habitat Requirements	Likelihood of Occurrence on Project Site
Invertebrates			
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	E/--/--	Vernal pools, swales, seasonal wetlands	Not detected during field surveys or reported from adjacent properties. Very rare in region. Only one known location in western Placer County. Marginal habitat is present on-site.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/--/--	Vernal pools, swales, seasonal wetlands	Observed on-site during field surveys.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E/--/--	Vernal pools, swales, seasonal wetlands	Not detected during field surveys. Marginal habitat present on the project site.
Amphibians			
California tiger salamander <i>Ambystoma californiense</i>	T/SSC/--	Vernal pools, vernal pool grasslands, ponds	Not observed on the project site. No recent or historic records of occurrence in western Placer County. Suitable habitat present on the project site.
California red-legged frog <i>Rana aurora draytonii</i>	T/SSC/--	Deeper pools and streams with emergent or overhanging vegetation	Not observed on the project site. No recent records from western Placer County. No suitable habitat on or near the project site.
Western spadefoot <i>Spea hammondi</i>	--/SSC/--	Vernal pools, upland grasslands	Not observed on the project site but is known to occur at nearby locations. Suitable habitat present on the project site.
Reptiles			
Western pond turtle <i>Actinemys marmorata</i>	--/SSC/--	Ponds, marshes, river, streams and ditches with basking sites and vegetation	Not observed on the project site. Suitable habitat located adjacent to but not on the project site.
Giant garter snake <i>Thamnophis couchii gigas</i>	T/T/--	Streams, irrigation channels, seasonal wetlands	Not observed on-site. Marginal habitat present on the project site.
Birds			
Tricolored blackbird <i>Agelaius tricolor</i>	--/SSC/--	Open water areas with tall emergent vegetation or in willow and blackberry thickets	Not observed on the project site. No suitable nesting habitat present on the project site.
Great egret (rookery) <i>Ardea alba</i>	*	Colonial nester in tall trees	Rookery not observed on-site. No suitable habitat present on-site.

3.4 Biological Resources

Common and Scientific Names	Status Federal/ State/ Other	Habitat Requirements	Likelihood of Occurrence on Project Site
Great blue heron (rookery) <i>Ardea herodias</i>	*	Colonial nester in tall trees	Rookery not observed on the project site. No suitable habitat present on-site.
Western burrowing owl <i>Athene cunicularia</i>	--/SSC/--	Grasslands, agricultural lands.	Not observed on the project site. Known to occur to the south and north of the project site. Suitable nesting and foraging habitat on-site.
Swainson's hawk <i>Buteo swainsoni</i>	--/T/--	Grasslands, agricultural lands	Known nest sites near the project site. Suitable nesting and foraging habitat on the project site.
Ferruginous hawk <i>Buteo regalis</i>	--/SSC/--	Grasslands, agricultural lands	Winter foraging habitat only.
Northern harrier <i>Circus cyaneus</i>	--/SSC/--	Grasslands, seasonal wetlands, agricultural lands	Known to occur on-site. Suitable foraging habitat. Marginal nesting habitat present on-site.
Snowy egret (rookery) <i>Egretta thula</i>	*	Colonial nester in dense tules	Rookery not observed on-site. No suitable habitat.
White-tailed kite <i>Elanus leucurus</i>	--/FP/--	Open grassland, and farmlands. Nests in tall trees near foraging areas	Suitable foraging habitat on the project site. Suitable nesting habitat in the northwest corner of the site.
Greater sandhill crane <i>Grus canadensis tabida</i>	--/T/--	Seasonal wetlands, irrigated pastures, alfalfa and corn fields	Marginal winter foraging habitat. Has not been observed on-site. No nesting habitat present on-site.
Loggerhead shrike <i>Lanius ludovicianus</i>	--/SSC/--	Grasslands, pastures, agricultural lands	Known to occur on-site. Observed foraging on-site. Suitable foraging and marginal nesting habitat.
California black rail <i>Laterallus jamaicensis</i>	--/T/--	Shallow, perennial freshwater marshes	No potential to occur on the project site. No nesting habitat present on-site.
Long-billed curlew <i>Numenius americanus</i>	--/--	Winter foraging and roosting habitat consists of pasturelands, seasonal wetlands, and some cultivated lands	Wintering foraging present on-site.
Black-crowned night-heron (rookery) <i>Nycticorax nycticorax</i>	*	Colonial nester in trees and tule patches	Rookery has not been observed on-site. No suitable habitat present on-site.

Common and Scientific Names	Status Federal/ State/ Other	Habitat Requirements	Likelihood of Occurrence on Project Site
Mammals			
Pallid bat <i>Antrozous pallidus</i>	--/SSC/WBWG: High priority	Shrublands, grasslands, woodlands, forests; rocky areas, caves, hollow trees	Suitable foraging habitat only.
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	--/SSC/WBWG: High priority	Most low to mid elevation habitats; caves, mines, and buildings for roosting	Suitable foraging habitat only.
Yuma myotis <i>Myotis yumanensis</i>	--/SSC/ WBWG: Low priority	Forests and woodlands; caves, mines, and buildings for roosting	Suitable foraging habitat only.

*Status explanations:***Federal**

- E = listed as Endangered under the federal Endangered Species Act.
T = listed as Threatened under the federal Endangered Species Act.
C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
- = no listing.

State

- E = listed as Endangered under the California Endangered Species Act.
T = listed as Threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
- = no listing.

Other

- IUCN-NT= The World Conservation Union, near Threatened species
- = no listing.

*- Rookeries are tracked and are of special interest to the California Department of Fish and Wildlife (CDFW)

Western Bat Working Group (WBWG) Available: <http://www.wbwg.org/>

High priority = species are imperiled or at high risk of imperilment

Moderate priority = this designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat

Low priority = While there may be localized concerns, the overall status of the species is believed to be secure.

Federal Special-Status Wildlife Species

Federally Listed Invertebrates

Three federally listed invertebrates have a potential to occur in seasonal wetland habitats on the project site: vernal pool tadpole shrimp (*Lepidurus packardii*) and Conservancy fairy shrimp (*Branchinecta conservatio*), both federally listed as Endangered species, and vernal pool fairy shrimp (*Branchinecta lynchi*), federally listed as a Threatened species. These species occur in vernal pools and other seasonal wetland habitats throughout the Central Valley, and are known to occur or potentially occur in western Placer County. There are numerous records of vernal pool fairy shrimp in southwestern Placer County. There are few records of vernal pool tadpole shrimp. The Conservancy fairy shrimp was recently detected in western Placer County, which has resulted in an expansion of the range for this species that includes the project site (North Fork Associates 2009; USFWS 2007). As a result of urbanization, populations of these species have declined throughout their range.

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 (North Fork

Associates 2009). The U.S. Fish and Wildlife Service (USFWS) requires two-year protocol surveys to assume absence (North Fork Associates 2009; USFWS 1995).

Based on protocol surveys for listed invertebrates in the 2005–2006 and 2006–2007 wet seasons, the Applicant’s consultant reports that two watersheds entirely within the project site and two watersheds partially within the project site were occupied by listed invertebrates, while three of the watersheds on the project site were not occupied (**Figure 3.4-3, Project Site Jurisdictional Wetlands and Watersheds**) (ECORP 2006a and ECORP 2007c). Vernal pool fairy shrimp were detected during these surveys, but neither vernal pool tadpole shrimp nor Conservancy fairy shrimp were detected. Both of these species have a very restricted known distribution in western Placer County compared with the vernal pool fairy shrimp making them unlikely to occur on the project site. The Applicant conducted the survey by dividing the site into watersheds and sampling each watershed. If a listed branchiopod was detected, the Applicant stopped further sampling in that watershed and assumed that all suitable habitat within that watershed was occupied. In watersheds where no listed invertebrates were detected in the first wet season, the Applicant continued sampling for two full wet seasons (Gibson & Skordal 2010).

Table 3.4-5, Listed Invertebrates Potential Habitat within Project Impact Area, below, presents the potential habitat for listed invertebrates present on the project site, organized in terms of potential habitat within watersheds where invertebrates were detected and potential habitat within watersheds where the species were not detected, as well as the total potential habitat within the project impact area.

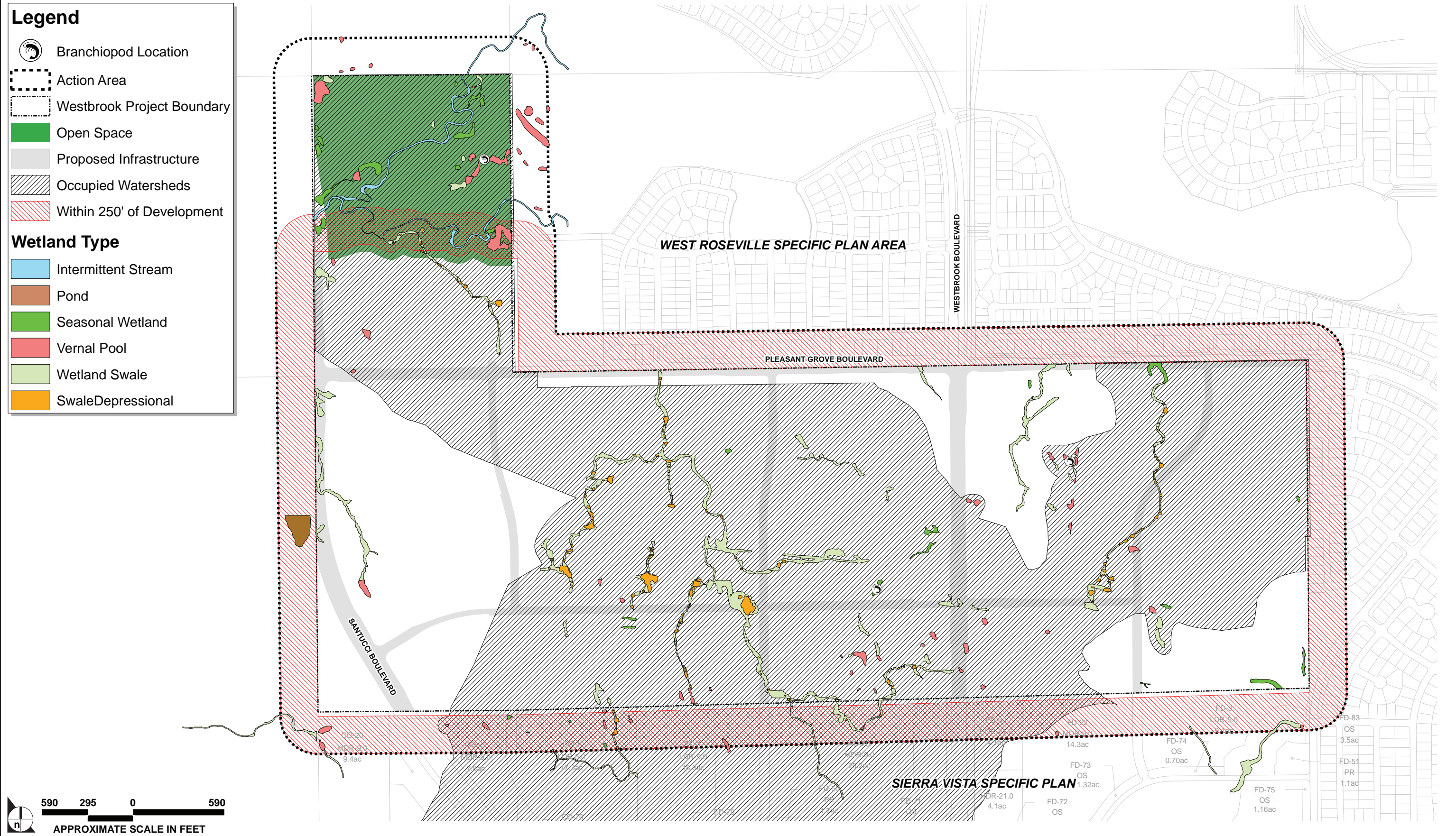
**Table 3.4-5
Listed Invertebrates Potential Habitat within Project Impact Area**

Type	Acres of Potential Habitat within Occurrence Detected Watersheds	Acres of Potential Habitat within No Occurrence Detected Watersheds	Total Potential Habitat
Vernal Pools	2.38	0.22	2.60
Seasonal Wetlands	1.17	0.21	1.38
Wetland Swales	6.15	1.64	7.80
Swale Depressional	1.18	0.00	1.18
Total*	9.70	2.07	11.78

Source: Gibson & Skordal 2012a; Impact Sciences 2012

* Total includes vernal pools, seasonal wetlands, and wetland swale habitat. Swale depressional is a subset of wetland swale habitat.

The habitat used by the branchiopods that are documented to occur within the project impact area includes vernal pools, and other similar seasonally flooded depression and depressional seasonal wetlands. Aquatic habitat that is not considered to be suitable branchiopod habitat includes streams and perennial ponds. As the table above shows, within the watersheds where listed invertebrates were detected, there are a total of 2.38 acres (0.96 hectare) of vernal pools, 1.17 acres (0.47 hectare) of seasonal wetlands, 6.15 acres (2.49 hectares) of wetland swales, and 1.18 acres (0.48 hectare) of swale depressional habitat; this amounts to 10.88 acres (4.40 hectares) of aquatic habitat in these watersheds.



SOURCE: Gibson & Skordal LLC., September 19, 2012

FIGURE 3.4-3

Project Site Jurisdictional Wetlands and Watersheds

Outside of the watersheds where listed invertebrates were detected, there is a total of 0.22 acre (0.09 hectare) of vernal pools, 0.21 acre (0.08 hectare) of seasonal wetlands, 1.64 acres (0.66 hectare) of wetland swales, and no swale depression habitat. If the acres of aquatic habitat in watersheds where listed invertebrates were not detected are added in, the project impact area contains about 12.96 acres (5.24 hectares) of potential aquatic habitat for listed invertebrates.

California tiger salamander (CTS)

CTS is a federally listed Threatened species and a state species of special concern. It can be found throughout Central California in vernal pools and seasonal ponds, including stock ponds, in grassland, from sea level to about 1,500 feet (about 460 meters). There are no known CTS occurrences in the vicinity of the project site. No species-specific surveys were conducted for the salamander. However, the species was not detected during extensive vernal pool and seasonal wetland surveys for listed branchiopods and western spadefoot (North Fork Associates 2009). In addition, CTS are not known to occur in Placer County, and the nearest occurrence is in southern Sacramento County (Gibson and Skordal 2012a). Therefore, CTS is unlikely to occur on the project site. However, the site is within CTS range and the site contains suitable breeding and aestivation habitat.

California red-legged frog (CRLF)

CRLF is a federally listed Threatened species and is designated as a state species of special concern. Once common, most of the remaining populations occur in the Coast Ranges. The nearest known occurrence in Placer County is at Michigan Bluff, approximately 50 miles (80 kilometers) northeast of the project site in the Sierra foothills. No CRLF have been found in the site vicinity. Although the project site is in the species' historic range, it does not contain suitable habitat which consists perennial streams with riparian vegetation. Therefore, CRLF is unlikely to occur on the project site.

Giant garter snake

Giant garter snake is a state and federally listed Threatened species. The project site is not within the known current distribution of giant garter snake. The Natomas Basin contains the nearest known occurrence, approximately 5 miles (8 kilometers) to the west. Because the on-site intermittent creeks (about 0.95 acre or 0.38 hectare in area), located in the northwestern corner of the project site, are hydrologically connected to the Natomas Basin, the species has a low potential to occur in the northwestern portion of the project site.

Valley elderberry longhorn beetle

The valley elderberry longhorn beetle (VELB) is federally listed as a Threatened species. It is a wood boring beetle that is dependent on its host plant, the elderberry shrub (*Sambucus* spp.), which occurs in riparian forests and savannahs near riparian areas and some other habitats. The range of the species is the Central Valley from southern Shasta County to Fresno County. As elderberry shrubs are not present within the project site or the off-site impact area, VELB has no potential to occur on the site.

State Special-Status Wildlife Species

Western spadefoot toad

Western spadefoot toad is a state species of special concern. It occurs throughout the Central Valley and adjacent foothills up to 4,500 feet (1,371 meters). There are four occurrences within 5 miles (8 kilometers) of the project site (ECORP 2006d and 2007b). All of the recorded sites have likely been disturbed or are threatened due to past and ongoing urbanization in the Roseville area. While the project site contains 1.81 acres of suitable habitat for the spadefoot, species-specific surveys conducted by the Applicant in 2006 and 2007 on the majority of the site did not detect the species (North Fork Associates 2009).

Western pond turtle

Western pond turtle is a state species of special concern. The species occurs throughout California from the coast to mid elevation Sierra Nevada. The species is associated with permanent water bodies that include basking sites and sufficient prey. They also use upland areas to aestivate and to overwinter. There are no stock ponds or other permanent bodies of water on the project site. A large stock pond is present within the off-site impact area to the west of the site and, therefore, there is a potential for the species to occur in the uplands near the pond, but not on the vast majority of the project site.

Greater sandhill crane

Greater sandhill crane is a state-listed Threatened species. Portions of the Sacramento-San Joaquin Delta and Cosumnes River basin are principal wintering grounds for the crane. Most traditional foraging areas are near communal roost sites (within 2-3 miles or 3-5 kilometers) that are flooded with several inches of standing or slowly moving water. Foraging habitat includes harvested fields, irrigated pastures, alfalfa fields, and seasonally flooded habitats. Due to marginal foraging habitat on the project site and the fact that the site does not provide suitable nesting habitat, the potential for the species to occur on the project site is low (North Fork Associates 2009).

Northern harrier

Northern harrier is a state species of special concern. The northern harrier is a ground-nesting raptor, which nests on the ground in marsh, grassland, and some agricultural habitats, particularly grain fields. They forage in seasonal wetland, grassland, and agricultural habitats. Several adult northern harriers were observed foraging on the project site during the raptor survey conducted by the Applicant (ECORP 2006b); therefore the entire site is potential foraging habitat for the northern harrier. There is limited potential for the northern harrier to nest on-site.

White-tailed kite

White-tailed kite is a state species of special concern and a state fully protected species. The white-tailed kite nests in riparian forests and woodlands, and occasionally in isolated trees. They forage in grasslands, seasonal wetlands, and agricultural fields. A possible white-tailed kite nest was observed in a locust tree along Curry Creek near Baseline Road during the 2007 surveys. The project site does not provide nesting

habitat but does provide suitable foraging habitat throughout the entire project site for the white-tailed kite (North Fork Associates 2009).

Swainson's hawk

Swainson's hawk is a state-listed Threatened species. It nests in riparian forests, remnant oak woodlands, isolated trees, and roadside trees. It forages primarily in agricultural habitats, particularly those that optimize availability of prey, and also uses irrigated pastures and annual grasslands. Although no nest sites are present on the project site, nest sites are known to occur in the vicinity of the site. The entire site is considered suitable foraging habitat for Swainson's hawk (North Fork Associates 2009).

Ferruginous hawk

Ferruginous hawk is designated as a state species of special concern. It typically does not nest in California. Individuals migrate into California during the winter where they utilize open grassland and agricultural land for foraging and roosting. The project site provides suitable grassland wintering habitat for this species. While it probably is only an occasional visitor, its potential for occurrence during the winter is high (North Fork Associates 2009).

California black rail

California black rail is a state-listed Threatened species. The black rail typically inhabits marshes dominated by bulrushes and cattails. A relatively narrow range of conditions is required for occupancy and successful breeding. The black rail breeds in marshland with a specific water depth. Too much water will prevent nesting and too little water will lead to abandonment of the site. Suitable nesting habitat is currently lacking on the project site and it is highly unlikely that this species could nest on the project site (North Fork Associates 2009).

Western burrowing owl

Western burrowing owl is a state species of special concern. It is a small ground-dwelling owl that typically occupies the burrows created by ground squirrels. The species also occupies artificial habitats, such as those created by pipes and small culverts. Burrowing owls forage in grassland and agricultural habitats with low vegetative height. A burrowing owl was recorded occupying a debris pile south of the project site in October 2005. It was not observed during subsequent surveys in 2006 and no burrowing owls or active burrows were detected during the most recent field survey in 2007 (North Fork Associates 2009). The nearest recorded burrowing owl occurrence is approximately 1 mile north of the project site and that owl has presumably been displaced as a result of the development of the West Roseville Specific Plan. An evaluation of the habitat during the April 2007 field surveys determined that the project site had relatively little ground squirrel activity and thus few potential nesting opportunities for burrowing owl. However, because the site is dominated by annual grassland and ground squirrel activity could be established on the site at any point in time, the entire site is considered suitable nesting habitat for burrowing owls and is likely occasionally used for foraging by the species (North Fork Associates 2009).

Tri-colored blackbird

Tri-colored blackbird is a state species of special concern. The species breeds in colonies that require open accessible water, a protected nesting area (including either flooded or thorny or spiny vegetation), and a suitable foraging area providing adequate insect prey within a few miles of the nesting colony. The tri-colored blackbird was not observed during the field surveys. Potential nesting habitat exists nearby in the cattail marsh along Curry Creek but this habitat is not on the project site. The grasslands on the project site provide suitable foraging habitat. The nearest known reported occurrence is in Lincoln (North Fork Associates 2009).

Loggerhead shrike

Loggerhead shrike is a state species of special concern. The species prefers open habitats with scattered trees, shrubs, posts, fences, utility lines, or other perches. It nests in small trees and shrubs, and forages in pastures and agricultural lands. One loggerhead shrike was observed during the field survey in April 2007. No nests were located. The entire project site is suitable foraging habitat, while nesting habitat is limited due to lack of trees and shrubs on the project site (North Fork Associates 2009).

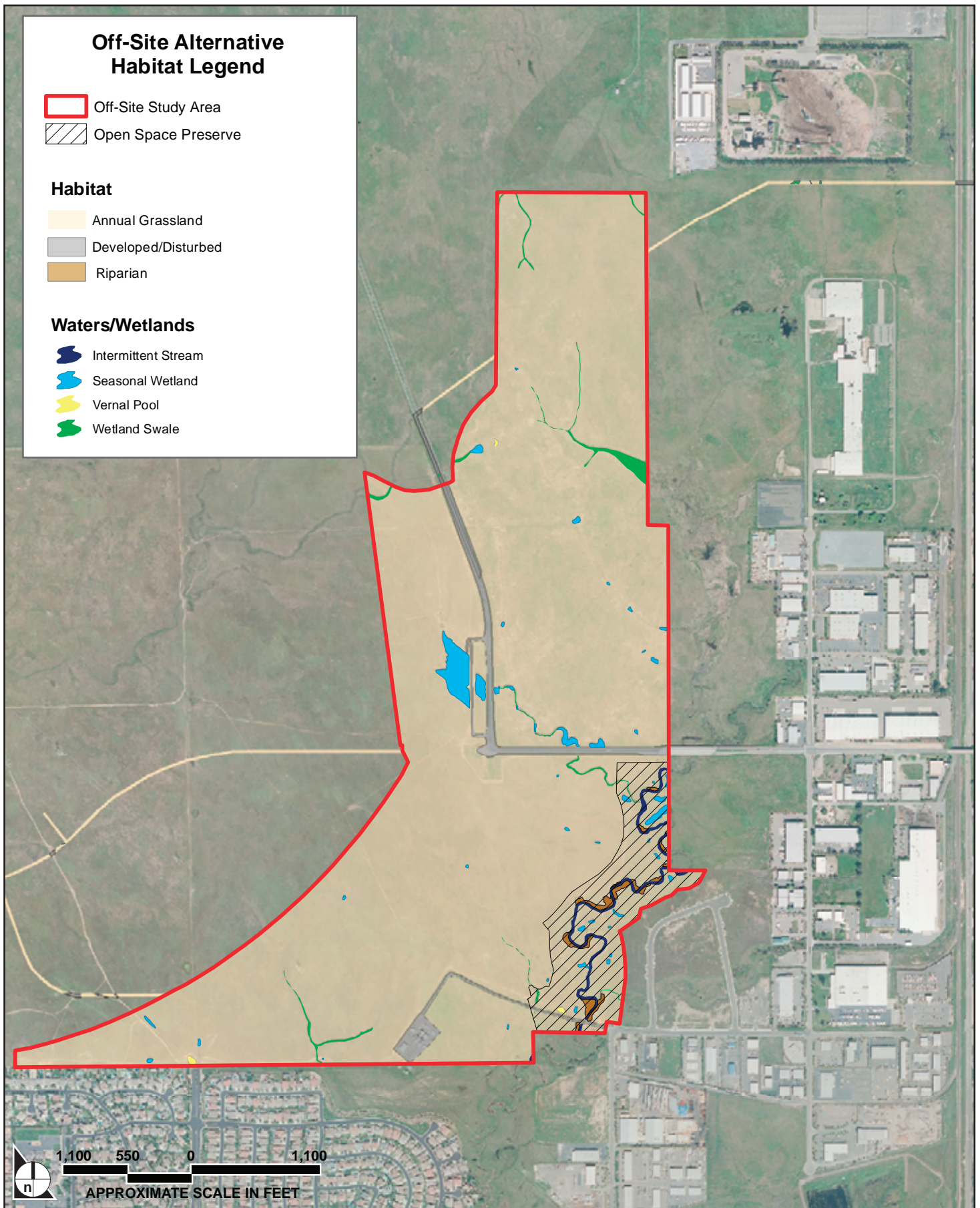
Heron and Egret Rookeries

Heron and egret rookeries are colonial nesting sites for heron and egret species. While these species are not considered special-status species, rookeries are included on the CDFW's special animals list because these breeding colonies can support a large segment of local populations. There are currently no rookeries on the project site. As these species typically nest in association with marshes and irrigated pastureland or irrigated cropland that provides a greater source of food than do the un-irrigated pasturelands on the project site, the occurrence of a rookery on the site is considered unlikely (North Fork Associates 2009).

3.4.2.9 Alternative Site and Off-Site Infrastructure Corridors – Location and Setting

The 406-acre (164-hectare) alternative site is located approximately 3 miles (4.8 kilometers) to the northeast of the project site within unincorporated Placer County. The alternative site is bounded by the Roseville City limit to the south and the Sunset Industrial area to the east. Open rangeland is located to the west and north. The site is also bisected by West Sunset Boulevard and North Foothills Boulevard. Elevations on the site range from approximately 115 to 145 feet (35 to 44 meters) above mean sea level (Salix Consulting 2012).

The majority of the alternative site is composed of annual grassland, as shown in **Figure 3.4-4a, Off-Site Alternative – Biological Communities and Waters of the US**, and **Figure 3.4-4b, Off-Site Alternative Infrastructure Corridors – Biological Communities and Waters of the US**. Approximately 9 acres (4 hectares) of developed or disturbed areas occur within the alternative site and include the Roseville Electric Power Plant and access road located along the southern boundary of the site; a berm; fire breaks; and paved roads that bisect the site.



SOURCE: Salix Consulting, Inc., April 2013

FIGURE 3.4-4a

Off-Site Alternative – Biological Communities and Waters of the US



SOURCE: Salix Consulting, Inc., April 2013

FIGURE 3.4-4b

Off-Site Alternative Infrastructure Corridors – Biological Communities and Waters of the US

The site has historically been grazed but is currently fallow, and vegetation is composed primarily of non-native annual grassland. The site is bordered to the south by a residential development, to the east by industrial development, and to the north and west by open pastureland dominated by annual grasslands. An intermittent stream that is a tributary of Pleasant Grove Creek runs in a southerly direction through the southeastern portion of the site. Seasonal wetland swales are scattered throughout the site and generally drain from west to east. Seasonal wetlands and a few vernal pools occur on the site (Salix Consulting 2012).

Off-Site utility improvements would be required to serve development on the alternative site. These improvements include two storm drains and storm water detention basins in the area to the west of the alternative site; 24-inch (61-centimeter) and 18-inch (46-centimeter) wastewater lines that would extend off-site to the west and connect to a new 36-inch (91-centimeter) main located in Fiddymont Road that would carry wastewater into an existing 48-inch main (122-centimeter) along the Pleasant Grove Creek corridor, and, ultimately convey the wastewater to the Pleasant Grove Wastewater Treatment Plant (PGWWTP) (Salix Consulting 2012). The infrastructure corridors serving the Off-Site Alternative are shown in **Figure 3.4-4a** and **3.4-4b**.

3.4.2.10 Alternative Site and Off-Site Infrastructure Corridors – Biological Communities

Plant Communities and Habitat Types

Three general biological communities and habitat types are located on the alternative site and along the infrastructure corridors. These are annual grassland, riparian woodland, and disturbed/developed.

Table 3.4-6, Alternative Site and Off-Site Infrastructure Corridors Biological Communities and Waters of the U.S. below provides the estimated acreage of the habitat types (Salix Consulting 2012).

**Table 3.4-6
Alternative Site and Off-Site Infrastructure Corridors, Biological Communities, and Waters of the U.S.**

Type	Alternative Site (Acres ¹)	Off-Site Infrastructure Corridors (Acres ¹)
<i>Biological Communities</i>		
Annual Grassland	394	12
Riparian Woodland	3	<1
Disturbed/Developed	9	5
<i>Waters of the U.S.²</i>		
Intermittent Stream	3.0	<0.1
Wetland Swale	7.9	<0.1
Vernal Pools	0.6	<0.1
Seasonal Wetlands	4.3	<0.1

Source: Salix Consulting 2012

¹ Acreage values are approximate and are not based on data from wetland delineations.

² Values include a 250-foot buffer around the site.

Annual Grassland

The majority of the alternative site and infrastructure corridors is covered with non-native annual grassland. Common plant species in the annual grassland habitat include medusahead grass, filaree, wild oat, wild radish, lesser hawkbit, soft chess brome, wild oat, ryegrass, Fitch's spikeweed, and rose clover. Wetlands, including some vernal pools, seasonal wetlands, and wetland swales, occur in scattered locations throughout the annual grassland and fallow fields within the alternative site. Typical plant species in these vernal pool and seasonal wetland habitats include coyote thistle, popcorn flower, Fremont's goldfields, spikerush, variegated clover, annual ryegrass, and Mediterranean barley (Salix Consulting 2012). The annual grassland on the alternative site and infrastructure corridors provides nesting sites, roosting, and foraging habitat for various wildlife species, as described in **Subsection 3.4.2.13 Alternative Site and Off-Site Infrastructure Corridors – Wildlife**.

Riparian Woodland

The portion of the intermittent stream that runs through the alternative site supports patchy reaches of riparian woodland. Vegetation within the riparian areas include: Valley oak, live oak, Himalayan blackberry, several willow species, and common rush (Salix Consulting 2012).

The infrastructure corridor passes through a small portion of the riparian habitat associated with Pleasant Grove Creek. Vegetation associated with Pleasant Grove Creek is similar to that found along the intermittent stream, but contains large stands of mature Valley oak trees (Salix Consulting 2012). The riparian woodland on the alternative site and infrastructure corridors provides nesting sites, roosting, and foraging habitat for various wildlife species, as described in **Subsection 3.4.2.13 Alternative Site and Off-Site Infrastructure Corridors – Wildlife**.

Disturbed/Developed

Developed portions of the alternative site primarily include the Roseville Electric Power Plant and access road along the southern boundary of the site. In addition, two roads (West Sunset Boulevard and North Foothills Boulevard) bisect the site. A berm runs parallel to North Foothills Boulevard on the western side, and several firebreaks are cut along the roads and intermittent stream (Salix Consulting 2012). The off-site infrastructure corridor runs along a half-mile stretch of Fiddyment Road adjacent to a housing development. It then crosses Fiddyment Road just north of the bridge over Pleasant Grove Creek (Salix Consulting 2012).

3.4.2.11 Alternative Site and Off-Site Infrastructure Corridors – Waters of the United States

The alternative site contains a total of approximately 9.2 acres (3.7 hectares) of waters of the U.S., which consist of intermittent streams, seasonal wetlands, vernal pools, and wetland swales (**Table 3.4-7, Alternative Site Waters of the U.S.**). An additional 6.6 acres (2.7 hectares) of potential jurisdictional waters are present within 250 feet of the boundary of the alternative site for a total of 15.8 acres (6.4 hectares).

A wetland delineation prepared for Placer Ranch, in 2002 by ECORP Consulting, Inc. was reviewed for the entire alternative site. Portions of this mapping were incorporated and adjusted where needed to reflect current conditions. Photo interpretation and a limited site investigation were conducted in August

2012 to estimate the wetland areas where no data was available. Areas that were observed throughout the alternative site and along the infrastructure corridor that would qualify as waters of the U.S. are briefly described below. The following summarizes the water features that occur on the project site.

**Table 3.4-7
Alternative Site Waters of the U.S. (in Acres)**

Type	Alternative Site	250 feet of Site Boundary
Vernal pools	0.2	0.4
Wetland swales	2.7	5.2
Seasonal wetlands	4.2	0.1
Intermittent streams	2.1	0.9
Total	9.2	6.6

Source: Gibson & Skordal 2012a

Intermittent Stream

One intermittent stream occurs in the southeastern portion of the alternative site. In the past, this stream received artificial inputs from the industrial area just north of the alternative site, and it had become a perennial feature. The majority of these inputs have ceased, and the stream has reverted to an intermittent stream with flows that are more typical and historic. It does, however, receive occasional dry season urban runoff. The portion of the intermittent stream that runs through the alternative site supports herbaceous emergent wetland vegetation and limited areas of riparian woodland. Typical plant species observed along the stream during the August site investigation include Himalayan blackberry, common and Baltic rush, cattail, and tall flatsedge. Coyote brush is establishing along the margins of the stream as it is converting back to an intermittent feature with extended dry periods. Vegetation within the riparian areas includes Valley oak, live oak, common rush, and several willow species. Approximately 2.1 acres (0.8 hectare) of intermittent stream habitat are estimated to occur on the alternative site and an additional 0.9 acre (0.4 hectare) within 250 feet of the site boundary (Salix Consulting 2012).

Wetland Swale

A few wetland swales are scattered throughout the alternative site. Most of the wetland swales on the site appear to be natural features that generally drain in a southwestern direction. One of the swales crosses both North Foothills Boulevard and West Sunset Boulevard and is a tributary to the intermittent stream in the southeastern corner of the alternative site. A berm has been constructed across this swale just west of North Foothills Boulevard, presumably to prevent water from flooding the road. Two large seasonal wetlands have formed, one to the west of the berm and one between the berm and North Foothills Boulevard. Vegetation within the swale features includes ryegrass, lesser hawkbit, Vasey's coyote thistle, Mediterranean barley, and filaree. Approximately 2.7 acres (1.1 hectares) of wetland swales are estimated to occur on the alternative site and an additional 5.2 acres (2.1 hectares) within 250 feet of the site

boundary. The infrastructure corridor crosses a swale system as it traverses the field just east of Fiddymment Road (Salix Consulting 2012).

Vernal Pools and Seasonal Wetlands

The alternative site contains vernal pools and seasonal wetlands, both types being depressional. The vernal pools support a mostly native flora including Vasey's coyote-thistle, stipitate popcornflower, dwarf wooly marbles, needle-leaved navarretia, and white-flowered navarretia. The seasonal wetlands support fewer vernal pool species and more grass and non-native cover including ryegrass and Mediterranean barley. Precipitation is likely the main source of water for most of the pools on the site, although runoff from the adjacent micro-watershed also contributes. Approximately 0.2 acre (0.08 hectare) of vernal pools and 4.2 acres (1.7 hectares) of seasonal wetlands are estimated to occur on the alternative site and an additional 0.4 acre (0.2 hectare) of vernal pools and 0.1 acre (0.04 hectare) of seasonal wetlands within 250 feet of the site boundary. It is estimated that the infrastructure corridor crosses approximately 0.2 acre (0.08 hectare) of vernal pools and seasonal wetlands that occur in the open field between the alternative site and Fiddymment Road. There appears to be a minor or negligible amount of vernal pools and seasonal wetlands within the proposed wastewater pipeline alignment near Pleasant Grove Creek (Salix Consulting 2012).

3.4.2.12 Alternative Site and Off-Site Infrastructure Corridors – Tree Resources

Valley oaks, live oaks, and arborescent willows occur in the riparian areas associated with the intermittent stream in the southeastern portion of the site and Pleasant Grove Creek which is adjacent to the infrastructure corridor (Salix Consulting 2012).

3.4.2.13 Alternative Site and Off-Site Infrastructure Corridors – Wildlife

The open annual grassland areas within the alternative site and infrastructure corridors are expected to provide habitat for a wide variety of wildlife species, including year-round foraging habitat for resident raptors such as American kestrel, red-tailed hawk and white-tailed kite, and seasonal foraging habitat for migratory raptors that winter in the region, such as ferruginous hawk. Swainson's hawk may utilize the grasslands for spring and summer forage. Additional wildlife species typical of annual grassland habitat in western Placer County include western meadowlark, American crow, Brewer's blackbird, white-crowned sparrow, killdeer, savannah sparrow, yellow-billed magpie, mourning dove, European starling, black-tailed hare, coyote, and California ground squirrel.

Most of the basin wetlands on the project site and within the infrastructure corridors are marginal to suitable habitat for listed large branchiopod species (vernal pool fairy shrimp and possibly vernal pool tadpole shrimp) (Salix Consulting 2012). The wetlands scattered throughout the site also provide seasonal nesting and foraging habitat for a variety of migratory waterfowl and wading birds.

Wildlife species expected to utilize the small patches of riparian habitat that contain standing water include Sierran treefrog, red-winged blackbird, mallard, great egret, Canada goose, and belted kingfisher. The intermittent stream on the alternative site does not flow long enough to support fish species including anadromous fish, such as Chinook salmon or steelhead. Pleasant Grove Creek which would be crossed by the infrastructure corridor is considered to be habitat for anadromous fish (Salix Consulting 2012). It is unlikely that the trees associated with the riparian areas of the intermittent stream would

provide roosting and nesting opportunities for raptors such as great horned owl, barn owl, and red-tailed hawk because they are not mature and occur in small patches. The riparian habitat associated with Pleasant Grove Creek is mature and is considered to be habitat for the above-mentioned species. Structures associated with the Roseville Electric Power Plant may provide limited roosting for some bat species known from the region.

3.4.2.14 Alternative Site and Off-Site Infrastructure Corridors – Special-Status Plant and Wildlife Species

Table 3.4-8, Special-Status Plant and Wildlife Species with Potential to occur on the Alternative Site, below provides an overview of special-status plant and wildlife species with the potential to occur on the alternative site and within the infrastructure corridors.

**Table 3.4-8
Special-Status Plant and Wildlife Species with Potential to occur on the Alternative Site**

Name	Federal/State/CNPS	Habitat	Likelihood of Occurrence in Project Region/Alternative Site
Plants			
Big-scale balsam-root <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	--/1B.2	Cismontane woodland; valley and foothill grassland (sometimes serpentinite)	Marginal habitat is present on-site.
Hispid bird's-beak <i>Chloropyron molle</i> ssp. <i>hispidum</i>	--/1B.2	Alkali sink, saline soils valley grassland; wetland riparian, meadows, playas	No suitable habitat is present on-site. No alkali or saline soils present on-site.
Brandegee's clarkia <i>Clarkia biloba</i> ssp. <i>Brandegeeae</i>	--/1B.2	Foothill woodland, yellow pine forest, chaparral, typically above 700 feet	No suitable habitat is present on-site. Site is below elevation range.
Dwarf downingia <i>Downingia pusilla</i>	--/2.2	Valley and foothill grassland (mesic); vernal pools, seasonal wetlands, and wetland swales	Suitable habitat is present on-site. Several occurrences in region surrounding alternative site.
Stinkbells <i>Fritillaria agrestis</i>	--/4.2	Chaparral, valley grassland, foothill woodland, wetland-riparian	Marginal habitat is present on-site.
Bogg's Lake hedge-hyssop <i>Gratiola heterosepala</i>	-/E/1B.2	Vernal pools	Marginal habitat is present on-site. Known occurrences in the region.
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	-/1B.2	Vernal pools	Suitable habitat is present on-site.
Legenere <i>Legenere limosa</i>	-/1B.1	Vernal pools and seasonal wetlands	Suitable habitat is present on-site. Known occurrences in region surrounding the alternative site.
Pincushion navarretia <i>Navarretia myersii</i> spp. <i>myersii</i>	-/1B.1	Vernal pools	Suitable habitat is present on-site.
Sacramento Valley Orcutt grass <i>Orcuttia viscida</i>	T/E/1B.1	Vernal pools	No suitable habitat is present on-site. Requires larger and deeper vernal pools. Not known from Placer County.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	-/1B.2	Marshes, swamps, and other wetlands	Suitable habitat present on-site.

Name	Federal/State/CNPS	Habitat	Likelihood of Occurrence in Project Region/Alternative Site
Invertebrates			
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	E/--/--	Vernal pools, swales, seasonal wetlands	Marginal habitat is present on-site. Very rare in the region. Only one known location in western Placer County.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/--/--	Vernal pools, swales, seasonal wetlands	Suitable habitat is present on-site. Numerous known occurrences in the vicinity of the alternative site.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E/--/--	Vernal pools, swales, seasonal wetlands	Marginal habitat is present on-site. Rare in Placer County.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/--/--	Elderberry shrubs with stems greater than 1 inch in diameter are considered potential habitat.	Suitable habitat present on-site but no elderberry shrubs known from site and none observed during reconnaissance survey.
Amphibians			
Western spadefoot <i>Spea hammondi</i>	--/SSC/--	Vernal pools, upland grasslands	Suitable habitat present on-site. Known occurrences in the vicinity of the alternative site.
California tiger salamander <i>Ambystoma californiense</i>	T/SSC/--	Vernal pools, vernal pool grasslands, ponds	Suitable habitat. Not observed on-site. No recent or historic records of occurrence in western Placer County.
Reptiles			
Western pond turtle <i>Actinemys marmorata</i>	--/SSC/--	Ponds, marshes, river, streams and ditches with basking sites and vegetation	Marginal habitat is present on-site. The intermittent stream within the alternative site could be used as a travel corridor. Suitable habitat occurs along Pleasant Grove Creek.
Giant garter snake <i>Thamnophis couchi gigas</i>	T/T/--	Streams, irrigation channels, seasonal wetlands	Marginal habitat is present on-site along Pleasant Grove Creek. No suitable aquatic habitat occurs within the alternative site. Known occurrences to the west in Sutter County.
Birds			
Tricolored blackbird <i>Agelaius tricolor</i>	--/SSC/--	Open water areas with tall emergent vegetation or in willow and blackberry thickets	Marginal habitat is present on-site for nesting along intermittent stream in blackberry patches. May forage throughout the site.
Grasshopper sparrow <i>Ammodramus savannarum</i>	--/SSC/--	Short to middle-height, moderately open grassland with scattered shrubs	Suitable habitat is present on-site.
Great egret (rookery) <i>Ardea alba</i>	*	Colonial nester in tall trees	Marginal rookery habitat occurs in riparian habitat within the alternative site. Suitable rookery habitat occurs within the riparian corridor of Pleasant Grove Creek.
Great blue heron (rookery) <i>Ardea herodias</i>	*	Colonial nester in tall trees	Marginal rookery habitat occurs in riparian habitat within the alternative site. Suitable rookery habitat occurs within the riparian corridor of Pleasant Grove Creek.

Name	Federal/State/CNPS	Habitat	Likelihood of Occurrence in Project Region/Alternative Site
Western burrowing owl <i>Athene cucularia</i>	--/SSC/--	Grasslands, agricultural lands.	Suitable foraging and nesting habitat occurs throughout the site. Known occurrences in the vicinity of the alternative site.
Swainson's hawk <i>Buteo swainsoni</i>	--/T/--	Grasslands, agricultural lands	Known nesting occurrences in vicinity of the alternative site. Suitable foraging and nesting on-site.
White-tailed kite <i>Elanus leucurus</i>	--/FP/--	Open grassland, and farmlands. Nests in tall trees near foraging areas	Suitable nesting and foraging habitat is present throughout site.
California black rail <i>Laterallus jamaicensis</i>	--/T/--	Shallow, perennial freshwater marshes	Marginal habitat present in study area. No known occurrences in project area.
Purple martin <i>Progne subis</i>	--/SSC/--	Trees, cavities, bridges, utility poles, lava tubes, buildings; mesic regions near large wetlands or other water bodies	Marginal habitat present in study area.
Mammals			
Pallid bat <i>Antrozous pallidus</i>	-- /SSC/WBWG : High priority	Shrublands, grasslands, woodlands, forests; rocky areas, caves, hollow trees	Suitable foraging habitat; unlikely to roost due to lack of suitable habitat within the alternative site. Suitable roosting habitat within the riparian corridor of Pleasant Grove Creek.
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	-- /SSC/WBWG : High priority	Most low to mid elevation habitats; caves, mines, and buildings for roosting	Suitable foraging habitat; unlikely to roost due to lack of suitable habitat within the alternative site. Suitable roosting habitat within the riparian corridor of Pleasant Grove Creek.

Status explanations:

Federal

- E = listed as endangered under the federal Endangered Species Act.
- T = listed as threatened under the federal Endangered Species Act.
- C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
- = no listing.

State

- E = listed as endangered under the California Endangered Species Act.
- R = listed as "rare" under the California Endangered Species Act.
- T = listed as threatened under the California Endangered Species Act.
- FP = fully protected under the California Fish and Game Code.
- SSC = species of special concern in California.
- = no listing.

California Native Plant Society

- 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
- 2 = List 2 species: rare, threatened, or endangered in California, but more common elsewhere.
- 3 = List 3 species: plants about which we need more information.
- 4 = List 4 species: Plants of limited distribution.
- 0.1 = Seriously endangered in California
- 0.2 = Fairly endangered in California
- 0.3 = Not very endangered in California

Other

- IUCN-NT = The World Conservation Union, near threatened species
- = no listing.

*- Rookeries are tracked and are of special interest to CDFW

Western Bat Working Group (WBWG) Available: <http://www.wbwg.org/>

High priority = species are imperiled or at high risk of imperilment

Moderate priority = this designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat

Low priority = While there may be localized concerns, the overall status of the species is believed to be secure.

Federal Special-Status Wildlife Species

Federally Listed Invertebrates

Three federally listed invertebrates have a potential to occur in seasonal wetland habitats on the alternative site: vernal pool tadpole shrimp (*Lepidurus packardii*) and Conservancy fairy shrimp (*Branchinecta conservatio*), both federally listed as Endangered species, and vernal pool fairy shrimp (*Branchinecta lynchi*), federally listed as a Threatened species. These species and their range are described in further detail under **Subsection 3.4.2.8 Wildlife**. There is suitable habitat on the alternative site for vernal pool fairy shrimp. The alternative site provides marginal habitat for the vernal pool tadpole shrimp and Conservancy fairy shrimp (Salix Consulting 2012).

California tiger salamander (CTS)

CTS is described in further detail under **Subsection 3.4.2.8 Wildlife**. The CTS was not observed on-site but there is suitable habitat on the alternative site (Salix Consulting 2012).

Giant garter snake

Giant garter snake is described in further detail under **Subsection 3.4.2.8 Wildlife**. There is no suitable aquatic habitat for the species on the alternative site. However there is marginal habitat along Pleasant Grove Creek (Salix Consulting 2012).

Valley elderberry longhorn beetle

The valley elderberry longhorn beetle (VELB) is described in further detail under **Subsection 3.4.2.8 Wildlife**. Elderberry shrubs are not present within the alternative site (Salix Consulting 2012).

State Special-Status Wildlife Species

Western spadefoot toad

The western spadefoot toad is described in further detail under **Subsection 3.4.2.8 Wildlife**. There is suitable habitat for the species present on the alternative site. In addition, there have been occurrences in the vicinity of the alternative site (Salix Consulting 2012).

Western pond turtle

The western pond turtle is described in further detail under **Subsection 3.4.2.8 Wildlife**. There is marginal habitat present on the alternative site. The western pond turtle may use the intermittent stream within the alternative site as a travel corridor (Salix Consulting 2012).

White-tailed kite

The white-tailed kite is described in further detail under **Subsection 3.4.2.8 Wildlife**. There is suitable nesting and foraging habitat throughout the alternative site (Salix Consulting 2012).

Swainson's hawk

The Swainson's hawk is described in further detail under **Subsection 3.4.2.8 Wildlife**. There is suitable nesting and foraging throughout the alternative site. In addition, there are known nesting occurrences in the vicinity of the alternative site (Salix Consulting 2012).

California black rail

The California black rail is described in further detail under **Subsection 3.4.2.8 Wildlife**. There is marginal habitat present on the alternative site. There are no known occurrences in the alternative site area (Salix Consulting 2012).

Western burrowing owl

The western burrowing owl is described in further detail under **Subsection 3.4.2.8 Wildlife**. There is suitable nesting and foraging throughout the alternative site. In addition, there are known occurrences in the vicinity of the alternative site (Salix Consulting 2012).

Tri-colored blackbird

The tri-colored blackbird is described in further detail under **Subsection 3.4.2.8 Wildlife**. There is marginal nesting habitat present along the intermittent stream in blackberry patches, on the alternative site. The tri-colored blackbird may forage throughout the site (Salix Consulting 2012).

Purple martin

The purple martin is a state species of special concern. The species prefers mesic habitat near large wetlands or other water bodies for foraging. The purple martin nests in trees, cavities, bridges, utility poles, lava tubes, and buildings. There is marginal habitat present on the alternative site (Salix Consulting 2012).

Heron and Egret Rookeries

Heron and egret rookeries are described in further detail under **Subsection 3.4.2.8 Wildlife**. There is marginal rookery habitat along the intermittent stream in riparian vegetation, within the alternative site. In addition, there is suitable rookery habitat along the riparian corridor of Pleasant Grove Creek near the alternative site (Salix Consulting 2012).

3.4.2.15 Regional Aquatic Resources

The Proposed Action and alternatives would receive water supply from various surface water supply sources (**Section 3.15, Utilities and Service Systems**). The City's surface water supply source is the American River² water diverted from Folsom Reservoir. While Folsom Reservoir and the lower American River are the source of water for the Proposed Action and alternatives, because the American River is a tributary to the Sacramento River and both rivers are components of the Central Valley Project (CVP), fish species and fisheries habitat present in the American River and the Sacramento River are described below along with the fisheries in the Folsom Reservoir.

American River

The American River, from which the City of Roseville draws its surface water, is one of two major tributaries of the Sacramento River, with the Feather River as the second major tributary. Based on historic data from 1905 through 2003, the average annual flow of the American River at Fair Oaks (United States Geological Survey [USGS] Station No. 11446500) is approximately 2.7 million acre-feet (0.33 million hectare-meters) per year (City of Roseville 2010).

The lower American River provides a diversity of aquatic habitats, including shallow, fast-water riffles, glides, runs, pools, and off-channel backwater habitats. The lower American River from Nimbus Dam (river mile [RM] 23) to approximately Goethe Park (RM 14) is primarily unrestricted by levees, but is bordered by some developed areas. Natural bluffs contain this reach of the river. The river reach downstream of Goethe Park, extending to its confluence with the Sacramento River (RM 0), is bordered by levees. The construction of levees changed the channel geomorphology and has reduced river meanders and increased depth (City of Roseville 2010).

At least 43 fish species occur in the lower American River system, including numerous resident native and introduced species, as well as several anadromous species (City of Roseville 2010). Although each fish species fulfills an ecological niche, several species are of primary management concern, either as a result of their declining numbers or their importance to recreational and/or commercial fisheries. Both Central Valley steelhead (*Oncorhynchus mykiss*), listed as Threatened under the federal ESA, and Sacramento splittail (*Pogonichthys macrolepidotus*), a California species of special concern and, informally, a federal species of concern, occur in the lower American River. Additionally, the lower American River from the outfall of the Natomas East Main Drainage Canal ("NEMDC," also known as "Steelhead Creek") downstream to the confluence with the Sacramento River is designated as critical habitat for spring-run Chinook salmon (70 FR 52512). Current recreationally and/or commercially important anadromous species include fall-run Chinook salmon (*Oncorhynchus tshawytscha*), steelhead, striped bass (*Morone saxatilis*), and American shad (*Alosa sapidissima*) (City of Roseville 2010).

² American River from its confluence with Sacramento River up to the Nimbus Dam is designated a Wild and Scenic River, for its recreational value.

Folsom Reservoir

Folsom Reservoir is the largest reservoir in the American River basin, with a maximum storage capacity of approximately 977,000 acre-feet (120,511 hectare-meters) and a maximum depth of 466 feet (142 meters) above mean sea level (msl). The Folsom Reservoir is a component of the CVP and owned and operated by the U.S. Bureau of Reclamation (BoR) (City of Roseville 2010).

With respect to its qualities as fish habitat, strong thermal stratification occurs within Folsom Reservoir annually between April and November. Thermal stratification establishes a warm surface water layer (epilimnion), a middle water layer characterized by decreasing temperature with increasing depth (metalimnion or thermocline), and a bottom, cold-water layer (hypolimnion) within the reservoir. In terms of aquatic habitat, the warm epilimnion of Folsom Reservoir provides habitat for warm water fishes, whereas the reservoir's lower metalimnion and hypolimnion form a cold-water pool that provides habitat for cold-water fish species throughout the summer and fall portions of the year. Hence, Folsom Reservoir supports a "two-story" fishery during a major portion of the year (April through November), with warm water species (both centrarchids and ictalurids) using the upper, warm-water layer and cold-water species using the deeper, colder portion of the reservoir (City of Roseville 2010). The maximum water surface elevation in the reservoir is 480 feet (146 meters) (BoR 2009) and the thickness of thermal layers varies seasonally. Temperature control devices have been installed in the reservoir to allow water supply operators the flexibility to selectively draw water from varying depths in Folsom Reservoir, using or conserving the coldest water in Folsom Reservoir. A temperature control device is operated by the Bureau of Reclamation at the Folsom Dam. The device allows the Bureau of Reclamation to conserve the cold water in Folsom Reservoir so that it can be released when it is most beneficial to fish in the lower American River (Water Forum 2005).

Native species that occur in the reservoir include hardhead (*Mylopharodon conocephalus*) and Sacramento pikeminnow (*Ptychocheilus grandis*). However, introduced largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), spotted bass (*Micropterus punctulatus*), bluegill (*Lepomis macrochirus*), crappie (*Pomoxis*), and catfish (*Ameiurus* spp. and *Ictalurus* spp.) constitute the primary warm-water sport fisheries of Folsom Reservoir. The reservoir's cold-water sport species include rainbow and brown trout (*Oncorhynchus mykiss* and *Salmo trutta*), kokanee salmon (*Oncorhynchus nerka*) and Chinook salmon, all of which are currently or have been stocked by the California Department of Fish and Wildlife (CDFW). Although brown trout are no longer stocked, a population still remains in the reservoir. Salmonids are stream spawners and, therefore, do not reproduce within the reservoir. However, some spawning by one or more of these species may occur in the American River upstream of Folsom Reservoir (City of Roseville 2010).

Folsom Reservoir's cold-water pool is important not only to the reservoir's cold-water fish species identified above, but also is important to lower American River fall-run Chinook salmon and steelhead. Seasonal releases from the reservoir's cold-water pool provide thermal conditions in the lower American River that support annual in-river production of these salmonid species. Folsom Reservoir's cold-water pool is not large enough to allow for cold-water releases during the warmest months (July through September) to provide maximum thermal benefits to lower American River steelhead, and cold-water releases during October and November that would maximally benefit fall-run Chinook salmon immigration and holding, spawning, and embryo incubation. Nonetheless, management of the reservoir's cold-water pool on an annual basis is essential to providing thermal benefits to both fall-run Chinook salmon and steelhead within the constraints of cold-water pool availability (City of Roseville 2010).

Sacramento River

The Sacramento River is the largest river in California, providing water for municipal, agricultural, recreational, and environmental purposes throughout Northern and Southern California. Water originating from the upper Sacramento River drainages represents a significant component of the total CVP supply, which provides high-quality water to meet downstream urban and agricultural demands. The Sacramento River enters the Sacramento –San Joaquin Delta at Freeport, downstream of its confluence with the American River, where its average annual flow is about 17 million acre-feet (2.1 million hectare-meters) (City of Roseville 2010).

The upper Sacramento River, the portion of the river above Princeton (RM 163), provides a diversity of aquatic habitats, including fast-water riffles and shallow glides, slow-water deep glides and pools, and off-channel backwater habitats. Streamflow is greatly influenced by managed releases from Shasta Reservoir and, during the rainy season, by stormwater runoff. The stream channel is in a natural state, with no artificial levees. The drainage basin area includes parts or all of the Great Basin, Middle Cascade Mountains, Klamath Mountains, Coast Ranges, and Sacramento Valley physiographic provinces. Land cover in the area is mainly forestland; cropland, pastures, and rangeland cover most of the remaining land area. Water quality effects from past and present mining activities in the Klamath Mountains are likely to be detected in the upper Sacramento River (USGS 2002).

The upper Sacramento River is of primary importance to native anadromous species, and is presently utilized for spawning and early-life-stage rearing, to some degree, by all four runs of Chinook salmon (fall-, late fall-, winter-, and spring-runs) and steelhead. Consequently, various life stages of the four runs of Chinook salmon and steelhead can be found in the upper Sacramento River throughout the year (City of Roseville 2010).

The lower Sacramento River, the portion of the river from Princeton to the Delta, is predominantly channelized, leveed, and bordered by agricultural lands. Aquatic habitat in the lower Sacramento River is characterized primarily by slow-water glides and pools, is depositional in nature, and has reduced water clarity and channel habitat diversity compared to the upper portion of the river (City of Roseville 2010).

Many of the fish species utilizing the upper Sacramento River also use the lower river to some degree, even if only as a migratory pathway to and from upstream spawning and rearing grounds. For example,

adult Chinook salmon and steelhead primarily use the lower Sacramento River as an immigration route to upstream spawning habitats and an emigration route to the Delta. The lower river is also used by other fish species (e.g., Sacramento splittail and striped bass) that make little to no use of the upper river (upstream of RM 163). Overall, fish species composition in the lower portion of the Sacramento River is quite similar to that of the upper Sacramento River and includes resident and anadromous cold- and warm-water species. Many fish species that spawn in the Sacramento River and its tributaries depend on river flows to carry their larval and juvenile life stages to downstream nursery habitats. Native and introduced warm-water fish species primarily use the lower river for spawning and rearing, with juvenile anadromous fish species also using the lower river and non-natal tributaries, to some degree, for rearing (City of Roseville 2010).

Over 30 species of fish are known to use the Sacramento River. Anadromous species include Chinook salmon, steelhead, green and white sturgeon (*Acipenser medirostris* and *Acipenser transmontanus*), striped bass, and American shad. Other Sacramento River fishes are considered resident species, which complete their lifecycles entirely within freshwater, often in a localized area. Resident species include rainbow and brown trout, largemouth and smallmouth bass, channel catfish (*Ictalurus punctatus*), sculpin (*Cottus asper*), Sacramento pikeminnow, Sacramento sucker (*Catostomus occidentalis*), hardhead, and common carp (*Cyprinus carpio*) (Moyle 2002).

3.4.3 REGULATORY FRAMEWORK – APPLICABLE LAWS, REGULATIONS, PLANS, AND POLICIES

3.4.3.1 Federal Laws, Regulations, Plans, and Policies

Federal laws and regulations for the protection of biological resources that are applicable to the Proposed Action and its alternatives are summarized below. The federal Clean Water Act, which regulates the placement of fill in the waters of the U.S., is summarized below and described in more detail in **Section 3.10, Hydrology and Water Quality**

Clean Water Act

The Clean Water Act (CWA) is the principal federal law protecting the quality and integrity of the nation's surface waters. The CWA offers a range of mechanisms to reduce pollutant input to waterways, manage polluted runoff, and finance municipal wastewater treatment facilities. Permit review serves as the CWA's principal regulatory tool; CWA regulation operates on the premise that all discharges to jurisdictional waters are unlawful unless specifically authorized by a permit.

Section 404 Discharge into Waters of the U.S.

Under Section 404 of CWA, discharges of dredged or fill material into waters of the U.S. are prohibited without a permit from the USACE. Among other regulatory program requirements, an applicant for a Department of the Army (DA) permit involving a discharge must demonstrate under U.S. EPA's 404(b)(1) guidelines that the proposed activity is the least environmentally damaging practicable alternative that achieves the project's overall purpose.

Section 401 Water Quality Certification

Section 401 of the CWA requires certification from the state to ensure compliance with state water quality standards for any activity that may result in a discharge to a water body. A project that would result in the discharge of any pollutant, including soil, into waters and wetlands requires coordination with the appropriate California Regional Water Quality Control Board to obtain Section 401 certification. Additional information is presented in **Section 3.10, Hydrology and Water Quality**.

Federal Endangered Species Act

The federal ESA protects fish and wildlife species, and their habitats that have been identified as Threatened or Endangered. “Endangered” refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range; “Threatened” refers to those likely to become Endangered in the near future.

The USFWS in the United States Department of the Interior and the National Oceanic and Atmospheric Administration (NOAA) - National Marine Fisheries Service (NMFS) in the United States Department of Commerce share responsibility for administration of the federal ESA. Provisions of Section 7 of the ESA relevant to the Proposed Action and alternatives are summarized below.

Section 7 provides a means for authorizing take of Threatened and Endangered species by federal agencies. “Take” is defined by the ESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Section 7 applies to actions that are conducted, permitted, or funded by a federal agency. Under Section 7, the federal agency conducting, funding, or permitting an action (the federal lead agency) must consult with the USFWS, as appropriate, to ensure that the Proposed Action will not jeopardize Endangered or Threatened species or destroy or adversely modify designated critical habitat. If a Proposed Action “may affect” a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the expected effect. The lead agency can also request concurrence or formal consultation with the USFWS if a Proposed Action “may affect” or is “not likely to adversely affect” listed species or critical habitat. If there is a “likely to adversely affect” determination, the USFWS issues a biological opinion, with a determination that the Proposed Action:

- may jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding); or
- will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The biological opinion may stipulate discretionary “reasonable and prudent” alternatives. If the Proposed Action would not jeopardize a listed species, the USFWS will issue an incidental take statement to authorize incidental take associated with the Proposed Action.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC. 661-667e) provides the basic authority for the USFWS's involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It also requires federal agencies that construct, license or permit water resource development projects to first consult with the USFWS (and the NMFS in some instances) and state fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts.

Vernal Pool Recovery Plan

The project and alternative sites are located within the area covered by the "Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon" prepared by the USFWS (USFWS 2005). The plan is a voluntary guidance program that broadly addresses conservation needs for 20 species of animals and plants listed as Endangered or Threatened so that these species will no longer require protection under the federal ESA. The plan identifies many options and strategies that may contribute to recovery. The recovery plan identifies a number of vernal pool regions throughout California and within each region, designates certain areas as core areas for initial focus of protection measures. The plan notes that while a goal of the recovery plan is to protect the long-term viability of existing populations within each vernal pool region, core areas within each vernal pool region have been identified where recovery actions will be focused. Each core area is further classified as Zone 1, 2, or 3 in order of overall priority for recovery.

Both the project site and the alternative site are located within the Western Placer County core area of the Southeast Sacramento Valley vernal pool region. The Western Placer County core area is ranked as Zone 2. The recovery plan notes that although most species covered in the plan can be recovered primarily through the protection of "Zone 1" core areas, protection of Zone 2 core areas will significantly contribute to the recovery of species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act protects migratory bird species from take. *Take*, under the Act, is defined as the action of, or an attempt to, pursue, hunt, shoot, capture, collect, or kill (50 Code of Federal Regulations [CFR] 10.12). The definition differentiates between "intentional" take (take that is the purpose of the activity in question) and "unintentional" take (take that results from, but is not the purpose of, the activity in question).

Executive Order (EO) 13186 (signed January 10, 2001) directs each federal agency taking actions that would have or would likely have a negative impact on migratory bird populations to work with the USFWS to develop a Memorandum of Understanding (MOU) to 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 federal 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 EO is designed to assist federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA); it does not constitute any legal authorization to take migratory birds.

Executive Order 13112: Prevention and Control of Invasive Species

EO 13112, signed February 3, 1999, directs all federal agencies to prevent and control introduction of invasive species in a cost-effective and environmentally sound manner. It established a National Invasive Species Council (NISC) composed of federal agencies and departments and a supporting Invasive Species Advisory Committee (ISAC) composed of state, local, and private entities. NISC and ISAC prepared a national invasive species management plan that recommends objectives and measures to implement the EO and to prevent the introduction and spread of invasive species (National Invasive Species Council & Invasive Species Advisory Committee 2001). The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

3.4.3.2 State Laws and Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance Threatened or Endangered species and their habitats. CESA mandates that state agencies should not approve projects that jeopardize the continued existence of Threatened or Endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species that is both federally and state-listed, compliance with ESA satisfies CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. CDFW administers CESA and authorizes take of Endangered, Threatened, or candidate species that is incident to an otherwise lawful activity through issuance of Section 2081 permits (except for species designated as fully protected).

Development of the Proposed Action or any of its alternatives could result in direct and indirect effects to state-listed species, or their habitat. The Applicant would be required to consult with CDFW regarding the Proposed Action's effects on species listed as Threatened or Endangered, or proposed for listing as

Threatened or Endangered under CESA. The Applicant would either be required to obtain a 2081 take permit from CDFW prior to conducting activities that result in the potential take of state-listed species (take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.”) or a consistency determination in accordance with Fish and Game Code Section 2080.1.

California Fish and Game Code

Streambed Alteration Agreements (Section 1600 *et seq.*)

Under Section 1602 of the Fish and Game Code, agencies are required to notify CDFW before implementing any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake (Fish and Game Code Section 1602). Preliminary notification and project review generally occur during the environmental review process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable changes to the project to protect the resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project. Development of the Proposed Action or any of the alternatives would likely require a 1602 streambed alteration agreement from CDFW for work in the intermittent streams.

Unlawful Destruction of Nests or Eggs and Birds-of-Prey or their Eggs (Sections 3503 and 3503.5)

Under these sections of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, or to take, possess, or destroy any birds of prey or their nest or eggs. Numerous birds-of-prey have potential to nest within the project site. Mitigation measures are proposed to ensure that active bird-of-prey nests will not be disturbed by the Proposed Action or its alternatives.

California Fully Protected Species

The California Fish and Game Code provides protection from take for a variety of species, referred to as “fully protected species.” Section 5050 lists fully protected amphibians and reptiles; Section 3515 lists fully protected fish; Section 3511 lists fully protected birds; and Section 4700 lists fully protected mammals. Except for take related to scientific research, all take of fully protected species is prohibited. White-tailed kite is the only fully protected species that has a potential to nest on the project site.

California Native Plant Protection Act

The California Native Plant Protection Act (CNPPA) preserves, protects, and enhances Endangered native plants in California. The act gave the California Fish and Game Commission the power to designate native plants as Endangered, Threatened, or Rare, and to require permits for collecting, transporting, or selling such plants. CDFW recommends that species listed in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California be addressed under CEQA. As indicated in **Table 3.4-4**, dwarf downingia is the only special-status plant species that is known to occur within the project site.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board (SWRCB) to regulate state water quality and protect beneficial uses. The SWRCB certifies activities subject to CWA Section 404 permits. The Applicant would be required to obtain a Section 401 water quality certification for the federal wetlands permits.

3.4.4 SIGNIFICANCE THRESHOLDS AND ANALYSIS METHODOLOGY

3.4.4.1 Significance Thresholds

Council on Environmental Quality (CEQ) regulations requires an evaluation of a proposed action's ecological effects such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems (40 CFR 1508.8), as well as effects on Endangered or Threatened species or their habitat (40 CFR 1508.27). NEPA does not specify significance thresholds to evaluate the effects of a proposed action on biological resources.

For purposes of evaluating the effects in this EIS, the USACE has determined that the Proposed Action or its alternatives would result in significant effects on biological resources if the Proposed Action or an alternative would:

- Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a Candidate, Sensitive, Threatened, Endangered, or special-status species, in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- Have a substantial adverse effect on riparian habitat;
- Have a substantial adverse effect on waters of the U.S.; or
- Interfere substantially with the movement of any native, resident, or migratory wildlife species.

The contribution of the Proposed Action or an alternative to a cumulative impact would be considered significant if the Proposed Action or an alternative would:

- Result in a net loss of the waters of the U.S.;
- Result in an unmitigated loss of vernal pool grassland habitat; or
- Result in an unmitigated loss of wildlife foraging and movement habitat.

3.4.4.2 Analysis Methodology

This impact analysis addresses both direct and indirect effects of the Proposed Action and its alternatives on both on-site and off-site biological resources. As noted earlier, the term "on-site" refers to the 397-acre Westbrook project site, whereas the term "off-site" refers to the off-site impact area adjacent to the project site that could be directly or indirectly affected by the Proposed Action.

Direct Effects

With respect to direct effects, the analysis assumes full buildout of the project or alternative site resulting in loss of all habitats within those portions of the site that are designated for development. In addition, the analysis covers off-site areas that would be directly affected by the construction of fill slopes. The following activities would result in direct effects:

- Vegetation clearing (including trees), grading, excavating/trenching, and paving activities during construction;
- Temporary stockpiling and side-casting of soil, construction materials, or other construction wastes;
- Soil compaction, dust, and water runoff from the construction site;
- Short-term construction-related noise (from equipment); and
- Degradation of water quality in on-site drainages and wetlands, resulting from construction runoff containing petroleum products.

Figure 3.4-5, Proposed Action – Waters of the US Impacts, (shown later in this section) presents the direct effects of the Proposed Action on wetlands on the project site and was developed by superimposing the development footprint under the Proposed Action on a map showing the delineated on-site wetlands. To calculate direct effects, the limits of disturbance, including slopes and construction zones, were first determined and mapped. Where disturbance would occur within any part of a vernal pool or seasonal wetland, the entire wetland polygon was presumed to be directly affected. Where the disturbance would occur within linear features, including perennial streams, intermittent streams, ephemeral streams, and wetland swales as well as ponds and emergent marsh, the direct effect was presumed to be the footprint of disturbance within the wetland polygon.

The Proposed Action would preserve approximately 37 acres (15 hectares) on the project site as open space, including both primary open space and secondary open space. Primary open space areas are those portions of the site where no grading or land disturbance would occur. The primary open space areas will be put under conservation easements prior to commencement of construction on the project site and wetlands or other resources present within the primary open space will not be filled or disturbed. With respect to the secondary open space, this is the open space that lies immediately adjacent to the areas to be developed and therefore could be subject to some development-related grading and filling. Secondary open space also includes areas along the two intermittent creeks that would be disturbed to construct the compensatory wetlands and the floodplain expansion area. Once these grading and filling activities are completed, the secondary open space area would be placed under a conservation easement. Because wetlands or other resources present within the secondary open space could be potentially affected, the analysis below assumes that all of these resources will be affected and their acreage is counted in the direct effects of the Proposed Action or an on-site alternative.

Indirect Effects

With respect to indirect effects, the analysis covers the on-site area in the northwestern portion of the project site that would not be developed but would be conserved long term as open space and a 250-foot (76-meter) zone along the project site boundary where sensitive habitat and/or species that are present could be indirectly affected by activities that occur on the project site. The following activities could result in indirect effects:

- Altering light and noise levels;
- Altering hydrology;
- Causing damage through toxicity associated with herbicides, insecticides, and rodenticides;
- Degradation of water quality in off-site drainages and wetlands, resulting from construction runoff containing petroleum products;
- Introducing pet and human disturbance (including trash dumping);
- Increasing habitat for native competitors or predators; and
- Introducing invasive nonnative species.

3.4.5 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

Impact BIO-1 Loss and Degradation of Functions and Services of Waters of the U.S. through Direct Removal, Filling, Hydrological Interruption or Other Means

No Action Alt. *Direct Effects from Placement of Fill*

A total of 12.55 acres (5.08 hectares) of waters of the U.S. have been identified on the project site. In addition, there are about 2.07 acres (0.84 hectare) of waters of the U.S. within 250 feet (76 meters) of the project site boundary.

Under the No Action Alternative, although the project site would be developed, all wetland areas would be avoided and no fill would be placed within the waters of the U.S. Furthermore, the site plan developed for the No Action Alternative also ensures that no grading or other ground disturbance would occur within 100 feet (30 meters) of the on-site and off-site aquatic resources, thereby reducing the likelihood of indirect effects during the construction of new development under this alternative. There would be **no direct or short-term indirect effects** to aquatic resources and no mitigation is required.

Indirect Effects

As the wetland areas would not be fenced or otherwise protected under the No Action Alternative, there would still be potential for **indirect** effects to aquatic resources in the long term associated with illegal dumping of wastes and other discharges into the waters as well as inadvertent intrusions into wetland areas by the residents of the

project site. In addition, impervious surfaces added to the site under this alternative could potentially change the hydrology of the wetlands. However, because of the 100-foot buffers included in the alternative, and the low level of development on the project site under this alternative, the **indirect** effects would be **less than significant**.

**Proposed
Action**

Direct Effects from Placement of Fill

As shown in **Table 3.4-9a, Proposed Action Impacts to Waters of the U.S.**, implementation of the Proposed Action would result in the filling of 9.61 acres (3.89 hectares) of wetlands and “other waters” of the U.S., resulting in the loss of aquatic resource area and functions. This total includes 9.56 acres (3.87 hectares) of on-site impacts and 0.05 acre (0.02 hectare) of off-site impacts and comprises placement of fill in 0.62 acre (0.25 hectare) of seasonal wetlands, 0.87 acre (0.35 hectare) of vernal pools, and 7.00 acres (2.83 hectares) of wetland swales. **Figure 3.4-5** shows the affected aquatic resources on the project site and in the off-site impact area.

Within the project site boundaries, 2.98 acres (1.21 hectares) of on-site vernal pools and other aquatic resources would be preserved and 9.56 acres (3.87 hectares) of the 12.55 acres (5.08 hectares) of waters of the U.S. would be filled. Loss of aquatic resources would occur as a result of grading in preparation for development, construction of roads and utility corridors, and other ground-disturbing activities related to construction. Given that the on-site vernal pools and seasonal wetlands that would be filled are highly disturbed from disking, grazing, and cultivation and the Proposed Action would fill a small acreage of the waters of the U.S., the effect is considered **less than significant**.

To address the filling of the waters of the U.S., the Applicant has put forth a mitigation plan to compensate for the loss of wetlands and other waters of the U.S. that will consist of preservation and creation of aquatic resources on the project site and purchase of constructed vernal pools and other wetlands creation/restoration and preservation credits from an approved conservation bank in western Placer County. The key elements of the conceptual mitigation plan are described below (See **Appendix 3.4** for the Applicant’s conceptual compensatory mitigation plan). **Table 3.4-9b, Proposed Action Impacts and Mitigation Area Summary**, presents acres of wetlands that would be affected under the Proposed Action and acres of wetlands that would be created or preserved under the Applicant’s conceptual compensatory mitigation plan.

On-Site Preservation

The conceptual compensatory mitigation plan proposes preservation of 2.98 acres (1.21 hectares) of wetlands and other waters of the U.S. on the project site in perpetuity and managed to maintain their resource functions and values. These would be preserved within the designated open space on the project site.

On-Site Wetlands Creation

The proposed on-site wetlands creation plan for the Proposed Action is shown in **Figure 3.4-6, Proposed On-Site Wetlands Creation**. The proposed on-site wetland creation has been designed to partially compensate for impacts to seasonal wetlands and swale wetlands.

According to the conceptual compensatory mitigation plan, a total of 3.88 acres (1.57 hectares) of seasonal wetlands would be constructed on the project site. The wetlands to be created would be located on low terraces excavated adjacent to two existing intermittent stream channels in the northwestern portion of the project site. The wetlands to be constructed would be located along the inside of existing stream meanders and along relatively straight reaches so as to avoid being intercepted by the natural meandering of the creek channel.

Off-Site Creation/Restoration

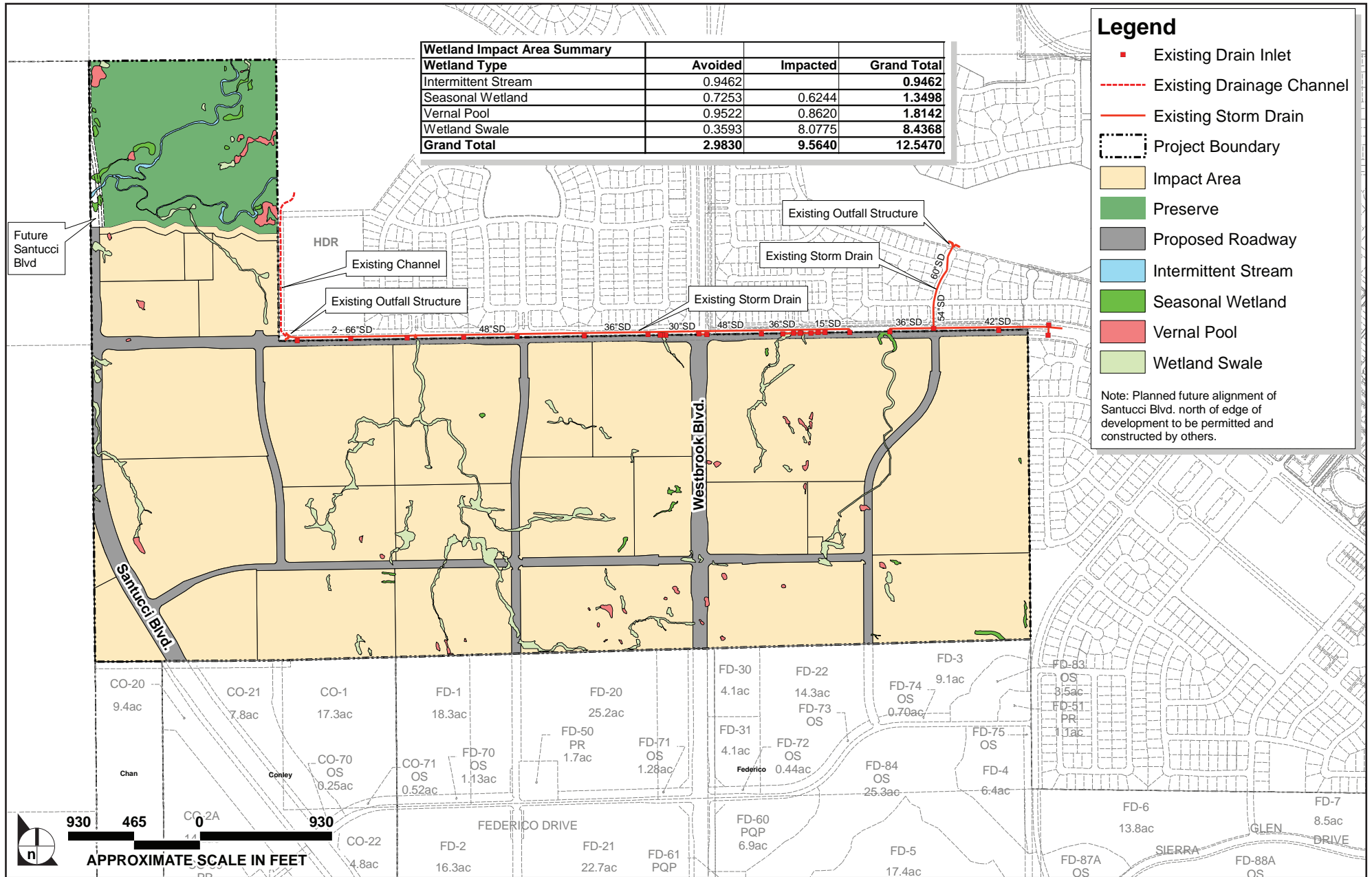
According to the conceptual compensatory mitigation plan, the Applicant proposes to secure 2.40 acres (0.97 hectare) of constructed vernal pool creation/restoration credits and 7.00 acres (2.83 hectares) of constructed seasonal wetland creation credits from an approved mitigation bank in western Placer County within the bank's approved service area.

Off-Site Preservation

According to the proposed conceptual compensatory mitigation plan, the Applicant proposes to secure 5.94 acres (2.40 hectares) of vernal pool preservation credits from an approved conservation bank in western Placer County within the bank's approved service area.

The Applicant also wishes to maintain the option to develop a permittee-sponsored off-site mitigation plan in lieu of the purchase of credits.

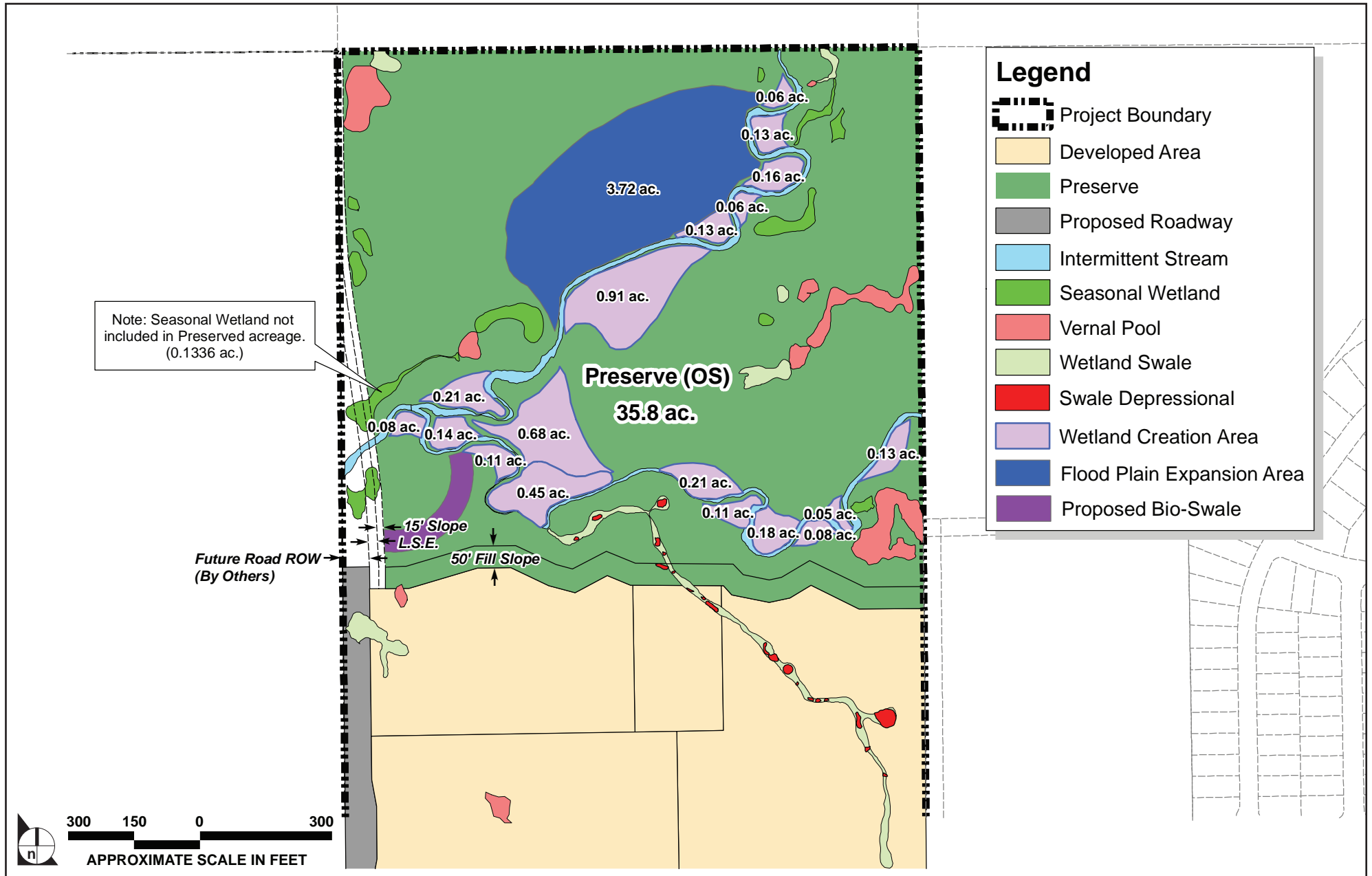
The mitigation plan put forth by the Applicant is conceptual and subject to change. As the USACE does not have a final mitigation plan and does not know specifically what would be constructed, there is uncertainty as to whether constructed wetlands will be functioning before the project site wetlands are filled, and because not all compensatory mitigation would be within the watershed of the impacts, **Mitigation Measure BIO-1a** will be imposed which would ensure that this **direct** effect on the waters of the U.S. would remain **less than significant**.



SOURCE: McKay & Soms, June 20, 2012

FIGURE 3.4-5

Proposed Action – Waters of the US Impacts



SOURCE: Gibson & Skordal, LLC., July 24, 2012

FIGURE 3.4-6

Proposed On-Site Wetlands Creation

Indirect Effects

The northwestern corner of the project site has been designated as open space in the land use plan for the Westbrook project and the Applicant proposes to establish a 35.8-acre (14.49-hectare) open space preserve in this area. This open space preserve encompasses the two intermittent streams that cross the project site and includes moderate concentrations of both vernal pools and seasonal wetlands located in proximity of the drainages. As a result of designating this open space preserve on the project site, 2.98 acres (1.21 hectares) of aquatic resources, which include 0.95 acre of vernal pools, 0.36 acre of wetland swale, 0.72 acre of seasonal wetlands, and 0.95 acre of stream habitat would be preserved within the project site as part of the Proposed Action (Gibson & Skordal 2012b).

Indirect impacts to the preserved aquatic resources within the open space preserve are generally not anticipated in the short term because grading or other ground disturbance in the vicinity of the preserved aquatic resources would be limited to the excavation of the floodplain expansion area and excavation related to new aquatic resources that would be created within the open space area. Nonetheless, there could be inadvertent impacts during grading that occurs near the preserved aquatic resources and **Mitigation Measure BIO-1b** is proposed to avoid such impacts.

Due to their location and measures included in the Proposed Action, indirect effects to preserved aquatic resources are not anticipated in the long term. The preserved aquatic resources would be located in the northwestern portion of the project site within the open space preserve which is flanked to the east, north, and west by existing preserved open space, and therefore would be distant from any on-site or off-site development. The preserved aquatic resources would be located within the portion of the open space preserve that is designated primary open space area, where no grading other than to create new wetlands would occur. This area would be put under conservation easements prior to commencement of construction on the Proposed Action. The portion of the open space preserve that would adjoin the land on the project site that would be developed would be subject to development-related grading and filling. However, once these grading and filling activities are completed, this area would also be placed under conservation easements. The entire open space preserve, including the preserved and created wetlands, would be managed for conservation consistent with the City of Roseville's Open Space Preserve Overarching Management Plan (O&M Plan) that has been approved by the resource agencies. Open space preservation under the Proposed Action is intended to complement regional conservation strategies such as the proposed Placer County Conservation Plan, and coordination with other agencies and conservation efforts would be a guiding principle of the Westbrook's resource management approach. The resource management approach would also be designed for consistency with the Memorandum of Understanding (MOU) between the City and

USFWS with respect to the operation and expansion of the Pleasant Grove Wastewater Treatment Plant (PGWWTP), and, if the USACE issues a DA permit, with the terms and conditions of the permit. Depending on permit terms and conditions, the Applicant expects to conduct the following types of activities in open space areas consistent with the City of Roseville's O&M Plan: maintenance of a 30-foot (9-meter) fire control strip (on the southern portion of the open space only within the secondary open space), maintenance of the trail in the same area, and minimal maintenance of the rest of the preserve. For all of these reasons, indirect effects on preserved aquatic resources would be **less than significant**. To further reduce the potential for **indirect** effects in the long term, **Mitigation Measure BIO-1b** will be imposed.

Table 3.4-9a
Proposed Action Impacts to Waters of the U.S. (in Acres)

Wetland Type	Waters of the U.S. on Project Site	Waters of the U.S. within 250 feet of Project Site Boundary	On-Site Impacts	Off-Site Impacts	Waters of the U.S. Preserved on Project Site
Intermittent Stream	0.95	0.15	0.00	0.00	0.95
Pond	0.00	0.56	0.00	0.00	0.00
Seasonal Wetland	1.35	0.03	0.62	0.00	0.72
Vernal Pool	1.81	0.79	0.86	0.01	0.95
Wetland Swale	7.31	0.48	6.97	0.03	0.36
Swale Depressional	1.12	0.06	1.12	0.01	0.00
Total	12.55	2.07	9.56	0.05	2.98

Source: Gibson & Skordal 2012a and 2012c

Table 3.4-9b
Proposed Action Impacts and Mitigation Area Summary (in Acres)

Wetland Type	On-Site Impacts	Off-Site Impacts	On-Site Preservation	On-Site Creation	Off-Site Preservation	Off-Site Restoration/Creation
Intermittent Stream	0.00	0.00	0.95	0.00	0.00	0.00
Seasonal Wetland	0.62	0.00	0.72	3.88	0.00	7.00
Vernal Pool	0.86	0.01	0.95	0.00	5.94	2.40
Wetland Swale	8.08	0.04	0.36	0.00	0.00	0.00
Total	9.56	0.05	2.98	3.88	5.94	9.40

Source: Gibson & Skordal 2012a and 2012c

**Alts. 1 & 2
(Reduced
Footprint
Increased
Density/Same
Density)**

Direct Effects from Placement of Fill

Alternatives 1 and 2 would have the same development footprint and are therefore evaluated together. Under Alternatives 1 and 2, a total of approximately 130 acres (53 hectares) of open space would be preserved compared to approximately 122 acres (49 hectares) of open space under the No Project Alternative and approximately 37 acres (15 hectares) under the Proposed Action. Because more area on the project site would be preserved as open space compared to the Proposed Action, aquatic resources present in the additional open space areas would not be filled, and compared to the Proposed Action, the direct effect on aquatic resources would be reduced.

As shown in **Table 3.4-10 Alternatives 1 and 2 Impacts to Waters of the U.S.**, these alternatives would result in the filling of 3.08 acres (1.25 hectares) of aquatic resources on the project site and 0.02 acre (0.01 hectare) off-site for a total of 3.10 acres (1.25 hectares). **Figure 3.4-7, Alternatives 1 & 2 – Waters of the US Impacts**, shows the affected waters of the U.S. The effect on wetlands would be reduced compared to the Proposed Action, and the loss of about 3 acres of waters of the U.S. would be **a less than significant direct** effect.

As with the Proposed Action, **Mitigation Measure BIO-1a** would be implemented, which requires the preparation and implementation of a wetland mitigation plan. The mitigation would further ensure that the **direct** effect would remain **less than significant**.

Indirect Effects

Unlike the Proposed Action which would preserve the on-site aquatic resources in the northwestern portion of the project site where they would be distant from development, preserved aquatic resources within the open space areas of Alternatives 1 and 2 would still be in close proximity of developed areas. Even though these aquatic resources would be separated from development by at least 100-foot buffers and would be placed under conservation easements and the conserved open space would be managed under the City's O&M Plan, there would still be potential for **indirect** effects to aquatic resources in the long term associated with illegal dumping of wastes and other discharges into the waters as well as inadvertent intrusions into wetland areas by the residents of the project site, and additional mitigation measures would be required to address this potentially **significant** long-term **indirect** effect. **Mitigation Measure BIO-1b** would be imposed to reduce this indirect effect to **less than significant**.

Table 3.4-10
Alternatives 1 and 2 Impacts to Waters of the U.S. (in Acres)

Wetland Type	Waters of the U.S. on Project Site	Waters of the U.S. within 250 feet of Project Site Boundary	On-Site Impacts	Off-Site Impacts	Waters of the U.S. Preserved on Project Site
Intermittent Stream	0.95	0.15	0.02	0.00	0.93
Pond	0.00	0.56	0.00	0.00	0.00
Seasonal Wetland	1.35	0.03	0.78	0.00	0.57
Vernal Pool	1.81	0.79	0.38	0.01	1.43
Wetland Swale	7.31	0.48	1.65	0.01	5.66
Wetland Depressional	1.12	0.06	0.25	0.00	0.87
Total	12.55	2.07	3.08	0.02	9.47

Source: Gibson & Skordal 2012a and 2012c

Alt. 3 *Direct Effects from Placement of Fill*

(Central Preserve)

Under Alternative 3, a total of 116 acres (47 hectares) of open space would be preserved compared to approximately 122 acres (49 hectares) under the No Project Alternative and 37 acres (15 hectares) under the Proposed Action. Because more area on the project site would be preserved as open space compared to the Proposed Action, aquatic resources present in the additional open space areas would not be filled, and compared to the Proposed Action, the effect on aquatic resources would be reduced.

As shown in **Table 3.4-11, Alternative 3 Impacts to Waters of the U.S.**, this alternative would involve filling 5.03 acres (2.04 hectares) of aquatic resources on the project site and 0.02 acre (0.01 hectare) of wetlands off-site for a total of 5.05 acres (2.04 hectares).

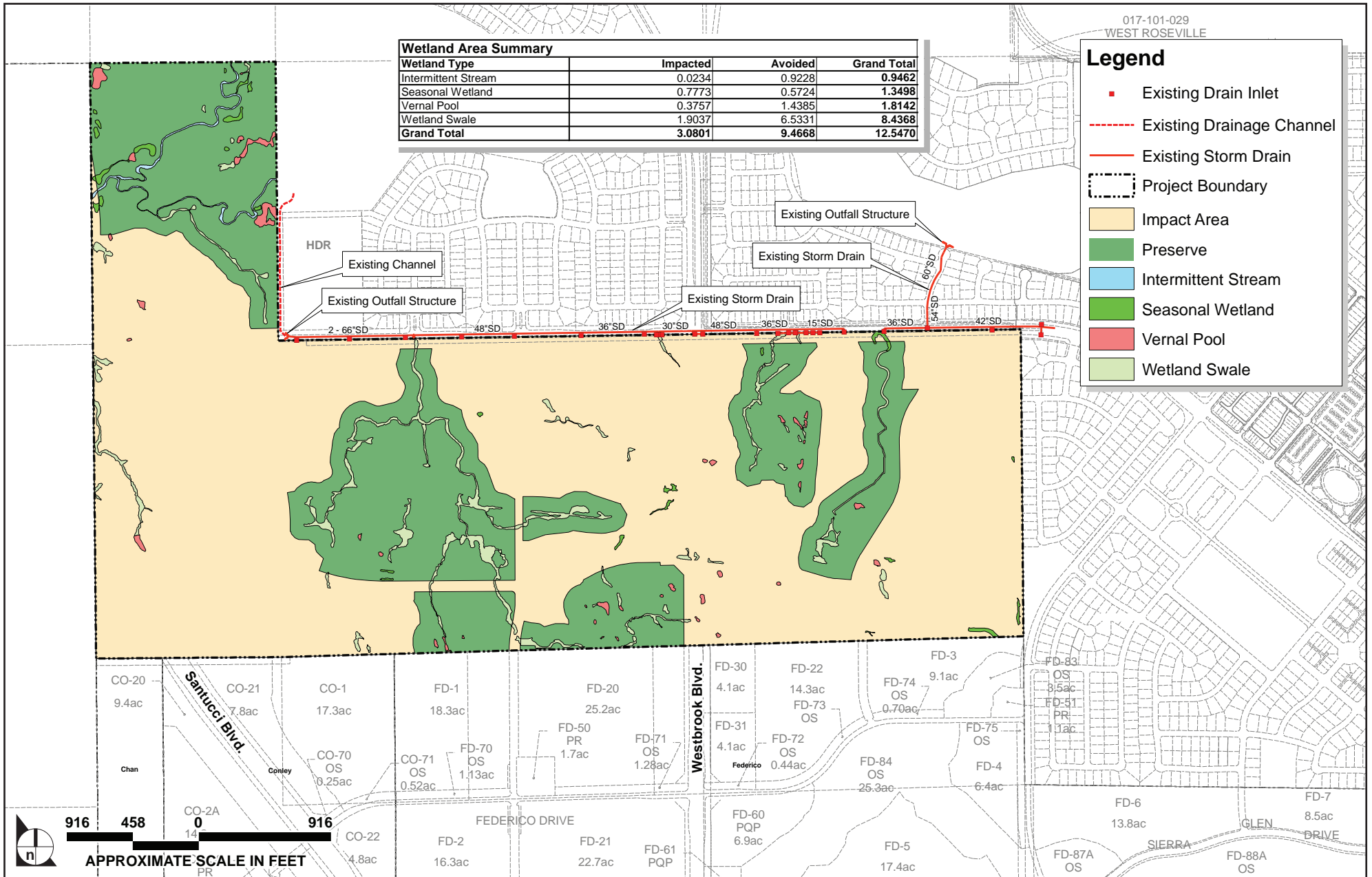
Figure 3.4-8, Alternative 3 – Waters of the US Impacts, shows the affected waters of the U.S. Due to the disturbed nature of the affected resources and the small acreage that would be filled, the loss of these waters of the U.S. would be a **less than significant direct** effect of this alternative.

Nonetheless, as with the Proposed Action and other alternatives, **Mitigation Measure BIO-1a** would be implemented, which requires the preparation and implementation of a wetland mitigation plan. Implementation of this mitigation measure would ensure that direct effects to aquatic resources under Alternative 3 would remain **less than significant**.

Wetland Area Summary			
Wetland Type	Impacted	Avoided	Grand Total
Intermittent Stream	0.0234	0.9228	0.9462
Seasonal Wetland	0.7773	0.5724	1.3498
Vernal Pool	0.3757	1.4385	1.8142
Wetland Swale	1.9037	6.5331	8.4368
Grand Total	3.0801	9.4668	12.5470

Legend

- Existing Drain Inlet
- Existing Drainage Channel
- Existing Storm Drain
- ⬜ Project Boundary
- Impact Area
- Preserve
- Intermittent Stream
- Seasonal Wetland
- Vernal Pool
- Wetland Swale



SOURCE: McKay & Soms, June 19, 2012

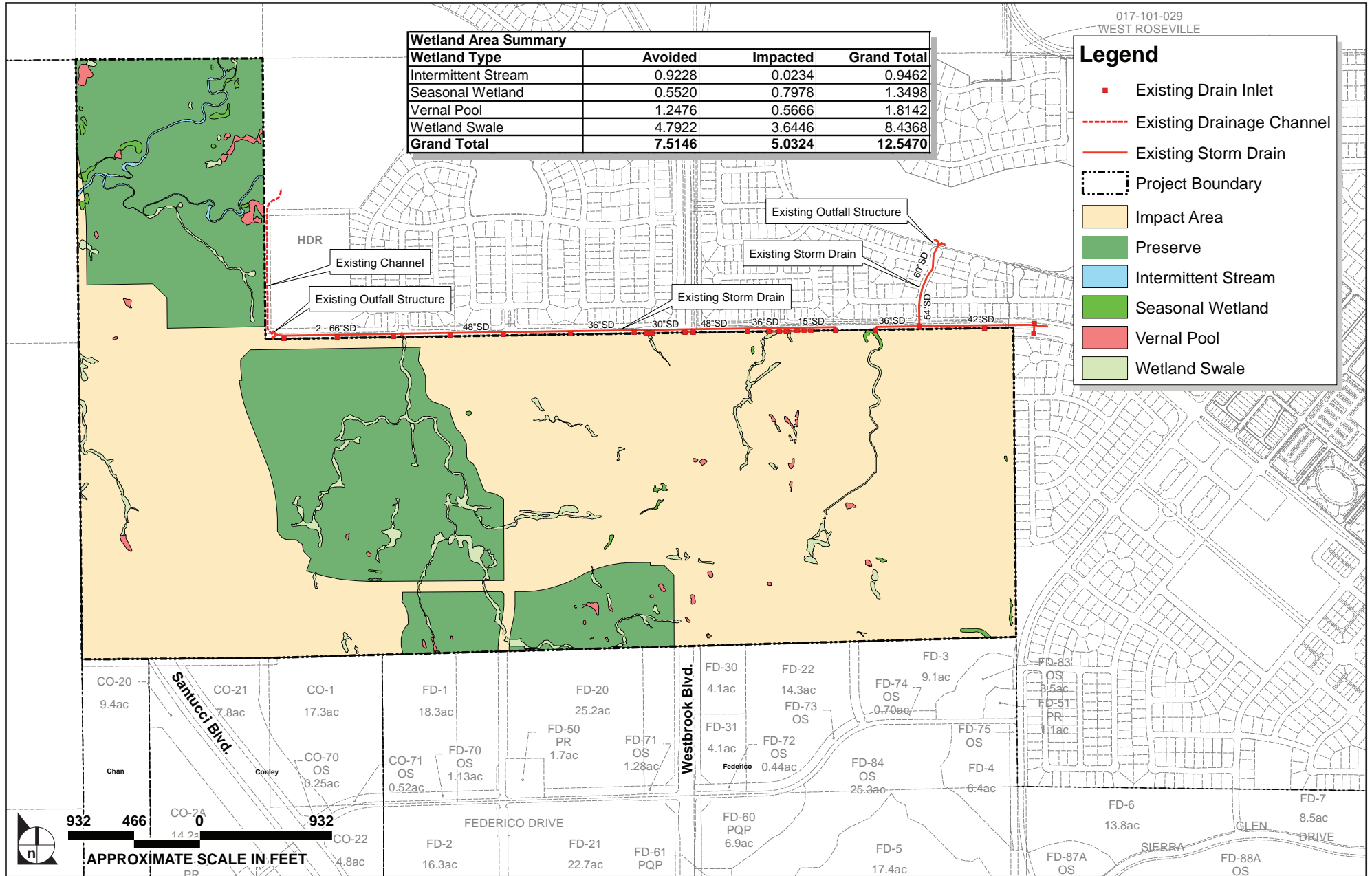
FIGURE 3.4-7

Alternatives 1 & 2 – Waters of the US Impacts

Wetland Area Summary			
Wetland Type	Avoided	Impacted	Grand Total
Intermittent Stream	0.9228	0.0234	0.9462
Seasonal Wetland	0.5520	0.7978	1.3498
Vernal Pool	1.2476	0.5666	1.8142
Wetland Swale	4.7922	3.6446	8.4368
Grand Total	7.5146	5.0324	12.5470

Legend

- Existing Drain Inlet
- Existing Drainage Channel
- Existing Storm Drain
- ⬡ Project Boundary
- Impact Area
- Preserve
- Intermittent Stream
- Seasonal Wetland
- Vernal Pool
- Wetland Swale



SOURCE: McKay & Soms, September 6, 2012

FIGURE 3.4-8

Alternative 3 – Waters of the US Impacts

Indirect Effects

Unlike the Proposed Action which would preserve the on-site aquatic resources in the northwestern portion of the project site where they would be distant from development, preserved aquatic resources within the open space areas of Alternative 3 would be in close proximity of developed areas. Even though these aquatic resources would be separated from development by at least 100-foot buffers and would be placed under conservation easements and the conserved open space would be managed under the City's O&M Plan, there would still be potential for **indirect** effects to aquatic resources in the long term associated with illegal dumping of wastes and other discharges into the waters as well as inadvertent intrusions into wetland areas by the residents of the project site, and additional mitigation measures would be required to address this potentially **significant** long-term **indirect** effect. **Mitigation Measure BIO-1b** would be imposed to reduce this indirect effect to **less than significant**.

Table 3.4-11
Alternative 3 Impacts to Waters of the U.S. (in Acres)

Wetland Type	Waters of the U.S. on Project Site	Waters of the U.S. within 250 feet of Project Site Boundary	On-Site Impacts	Off-Site Impacts	Waters of the U.S. Preserved on Project Site
Intermittent Stream	0.95	0.15	0.02	0.00	0.93
Pond	0.00	0.56	0.00	0.00	0.00
Seasonal Wetland	1.35	0.03	0.80	0.00	0.55
Vernal Pool	1.81	0.79	0.57	0.01	1.24
Wetland Swale	7.31	0.48	3.15	0.01	4.16
Swale Depressional	1.12	0.06	0.49	0.00	0.63
Total	12.55	2.07	5.03	0.02	7.52

Source: Gibson & Skordal 2012a and 2012c

Alt. 4 *Direct Effects from Placement of Fill*

(One Acre Fill)

Under Alternative 4, a total of 161 acres (65 hectares) of open space would be preserved compared to approximately 122 acres (49 hectares) under the No Project Alternative and about 37 acres (15 hectares) under the Proposed Action. Because of the manner in which this alternative site plan has been designed, the filling of the vast majority of wetlands on the site would be avoided and compared to the Proposed Action the effect on wetlands would be substantially reduced.

As shown in **Table 3.4-12 Alternative 4 Impacts to Waters of the U.S.**, this alternative

would involve filling 0.92 acre (0.37 hectare) of aquatic resources on the project site and 0.02 acre (0.01 hectare) of aquatic resources off-site for a total of 0.94 acre (0.38 hectare).

Figure 3.4-9, Alternative 4 – Waters of the US Impacts, shows the affected waters of the U.S. The loss of less than 1 acre of waters of the U.S. would be a **less than significant** effect of this alternative.

With less than 1 acre of fill, the alternative would qualify for consideration by the USACE for authorization under a Letter of Permission (LOP). The LOP process is optional for an applicant. An individual permit can be sought by the applicant instead of an LOP. The USACE Sacramento District has set forth the LOP procedure and requirements for projects in California. As noted in the USACE Sacramento District's LOP guidance, a LOP will be issued only for those activities which meet specific criteria and which have only minor impacts on the aquatic environment. In addition, in accordance with 33 CFR 332 and the District's Mitigation and Monitoring Guidelines, applications for the LOP must include a compensatory mitigation plan that clearly demonstrates impacts to aquatic resources have been and will be avoided and minimized to the maximum extent practicable and there will be a net increase in functions of aquatic resources. If compensatory mitigation is proposed at an approved mitigation bank, the proposed bank and type of credits to be obtained must be identified. According to the District's LOP procedure, the loss of waters of the U.S. would be compensated for at a minimum ratio of 2:1 for permittee-responsible mitigation or through an in lieu fee program and/or the loss of waters of the U.S. would be compensated for at a minimum ratio of 1:1 at a Corps-approved mitigation bank. In addition, any activity authorized by LOP must also meet the LOP general conditions.

Compliance with LOP conditions and implementation of **Mitigation Measure BIO-1a** would further reduce the **less than significant direct** impact of this alternative.

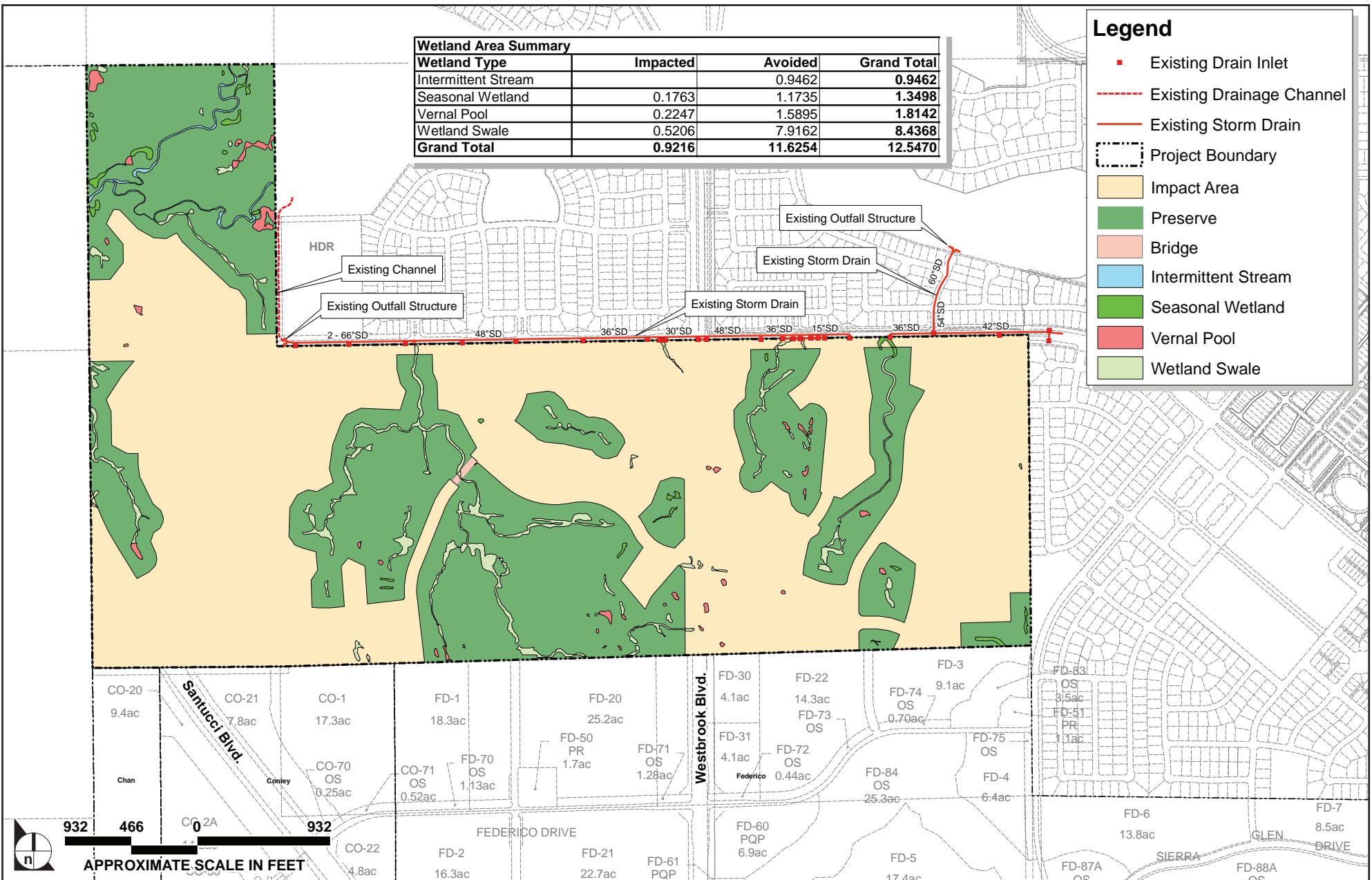
Indirect Effects

Unlike the Proposed Action which would preserve the on-site aquatic resources in the northwestern portion of the project site where they would be distant from development, preserved aquatic resources within the open space areas of Alternative 4 would be in close proximity of developed areas. Even though these aquatic resources would be separated from development by at least 100-foot buffers and would be placed under conservation easements and the conserved open space would be managed under the City's O&M Plan, there would still be potential for **indirect** effects to aquatic resources in the long term associated with illegal dumping of wastes and other discharges into the waters as well as inadvertent intrusions into wetland areas by the residents of the project site, and additional mitigation measures would be required to address this potentially **significant** long term **indirect** effect. **Mitigation Measure BIO-1b** would be imposed to reduce this indirect effect to **less than significant**.

Wetland Area Summary			
Wetland Type	Impacted	Avoided	Grand Total
Intermittent Stream		0.9462	0.9462
Seasonal Wetland	0.1763	1.1735	1.3498
Vernal Pool	0.2247	1.5895	1.8142
Wetland Swale	0.5206	7.9162	8.4368
Grand Total	0.9216	11.6254	12.5470

Legend

- Existing Drain Inlet
- Existing Drainage Channel
- Existing Storm Drain
- Project Boundary
- Impact Area
- Preserve
- Bridge
- Intermittent Stream
- Seasonal Wetland
- Vernal Pool
- Wetland Swale



SOURCE: McKay & Soms, June 20, 2012

FIGURE 3.4-9

Alternative 4 – Waters of the US Impacts

**Table 3.4-12
Alternative 4 Impacts to Waters of the U.S. (in Acres)**

Wetland Type	Waters of the U.S. on Project Site	Waters of the U.S. within 250 feet of Project Site Boundary	On-Site Impacts	Off-Site Impacts	Waters of the U.S. Preserved on Project Site
Intermittent Stream	0.95	0.15	0.00	0.00	0.95
Pond	0.00	0.56	0.00	0.00	0.00
Seasonal Wetland	1.35	0.03	0.18	0.00	1.17
Vernal Pool	1.81	0.79	0.22	0.01	1.59
Wetland Swale	7.31	0.48	0.45	0.01	6.86
Swale Depressional	1.12	0.06	0.07	0.00	1.05
Total	12.55	2.07	0.92	0.02	11.63

Source: Gibson & Skordal 2012a and 2012c

Alt. 5 *Direct Effects from Placement of Fill*

**(Half
Acre Fill)**

Under Alternative 5, a total of 174 acres (70 hectares) of open space would be preserved, compared to approximately 122 acres (49 hectares) under the No Project Alternative and about 37 acres (15 hectares) under the Proposed Action. Because of the manner in which this alternative site plan has been designed, the vast majority of aquatic resources on the site would be avoided, and compared to the Proposed Action the effect on aquatic resources would be substantially reduced.

As shown in **Table 3.4-13 Alternative 4 Impacts to Waters of the U.S.**, this alternative would involve filling 0.47 acre (0.19 hectare) of aquatic resources on the project site (with no filling of any wetlands off-site). **Figure 3.4-10, Alternative 5 – Waters of the US Impacts**, shows the affected waters of the U.S. The loss of less than 0.5 acre (0.2 hectare) of aquatic resources would be a **less than significant** effect of this alternative.

With less than 0.5 acre (0.2 hectare) of fill, the alternative would qualify for consideration by the USACE for authorization under a nationwide permit, assuming all other conditions are met. A nationwide permit would require that the fill impact be mitigated at a ratio calculated by the USACE. In addition, the alternative would also be required to comply with the general conditions in the nationwide permit.

Compliance with the nationwide permit conditions and implementation of **Mitigation Measure BIO-1a** would further reduce the **less than significant direct** impact of this alternative.

Indirect Effects

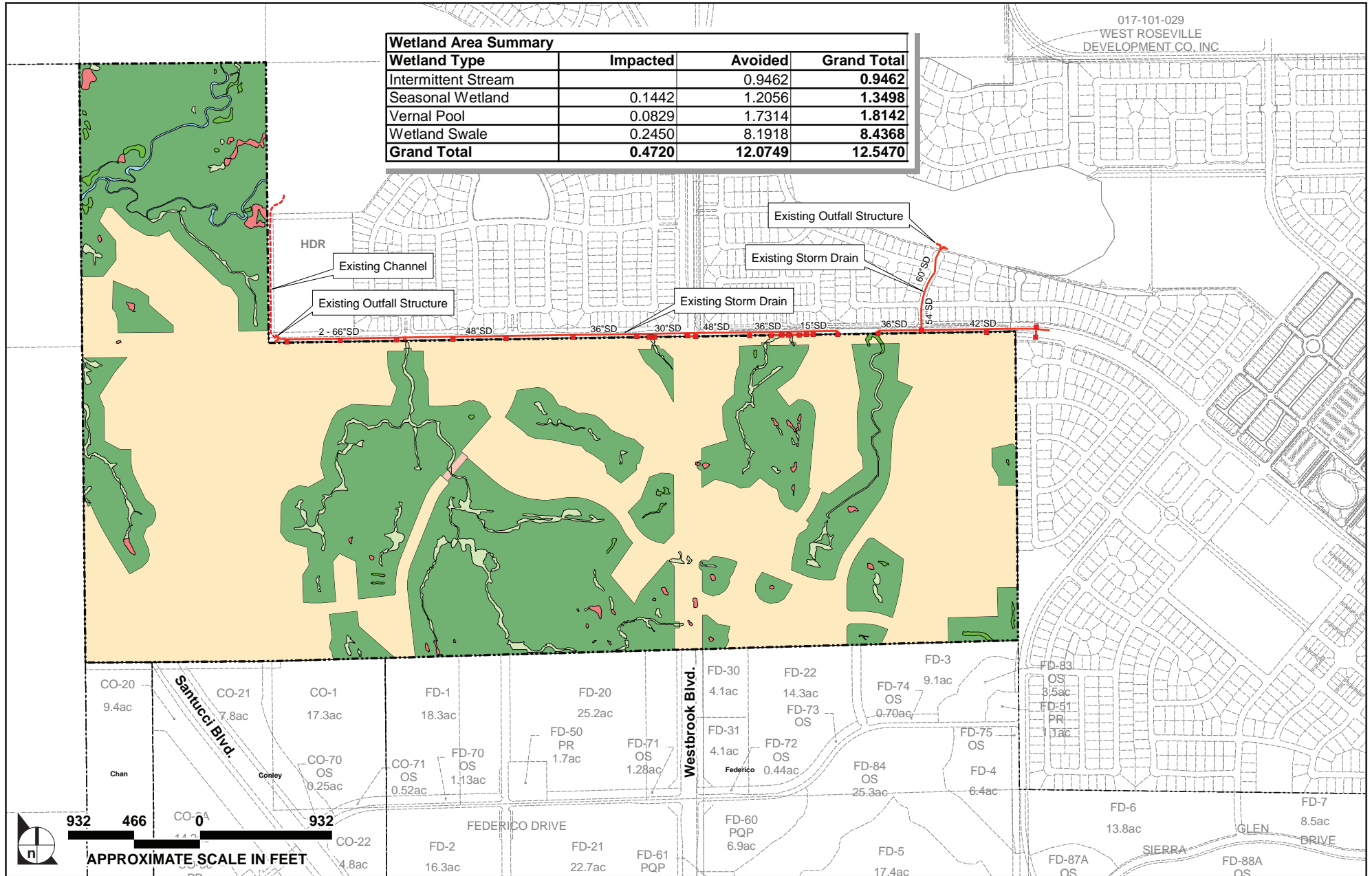
Unlike the Proposed Action which would preserve the on-site aquatic resources in the northwestern portion of the project site where they would be distant from development, preserved aquatic resources within the open space areas of Alternative 5 would be in close proximity of developed areas. Even though these aquatic resources would be separated from development by at least 100-foot buffers and would be placed under conservation easements, and the conserved open space would be managed under the City's O&M Plan, there would still be potential for **indirect** effects to aquatic resources in the long term associated with illegal dumping of wastes and other discharges into the waters as well as inadvertent intrusions into wetland areas by the residents of the project site, and additional mitigation measures would be required to address this potentially **significant** long term **indirect** effect. **Mitigation Measure BIO-1b** would be imposed to reduce this indirect effect to **less than significant**.

Table 3.4-13
Alternative 5 Impacts to Waters of the U.S. (in Acres)

Wetland Type	Waters of the U.S. on Project Site	Waters of the U.S. within 250 feet of Project Site Boundary	On-Site Impacts	Off-Site Impacts	Waters of the U.S. Preserved on Project Site
Intermittent Stream	0.95	0.15	0.00	0.00	0.95
Pond	0.00	0.56	0.00	0.00	0.00
Seasonal Wetland	1.35	0.03	0.14	0.00	1.21
Vernal Pool	1.81	0.79	0.08	0.00	1.73
Wetland Swale	7.31	0.48	0.22	0.00	7.09
Swale Depressional	1.12	0.06	0.03	0.00	1.09
Total	12.55	2.07	0.47	0.00	12.08

Source: Gibson & Skordal 2012a and 2012c

Wetland Area Summary			
Wetland Type	Impacted	Avoided	Grand Total
Intermittent Stream		0.9462	0.9462
Seasonal Wetland	0.1442	1.2056	1.3498
Vernal Pool	0.0829	1.7314	1.8142
Wetland Swale	0.2450	8.1918	8.4368
Grand Total	0.4720	12.0749	12.5470



SOURCE: McKay & Somp, June 20, 2012

FIGURE 3.4-10

Alternative 5 – Waters of the US Impacts

Off-Site Alt. *Direct Effects from Placement of Fill*

Under the Off-Site Alternative, the proposed mixed-use community would be built on the alternative site. As shown in **Table 3.4-14, Off-Site Alternative Impacts to Waters of the U.S.**, this alternative would involve filling of approximately 11.9 acres (4.8 hectares) of aquatic resources on the alternative site, including fill on adjacent off-site lands associated with fill slopes. Construction of off-site improvements associated with this alternative would result in additional discharge of dredged or fill materials into waters of the U.S. along the alignments of the water and wastewater pipelines which is estimated to be about 0.02 acre (0.01 hectare). The loss of approximately 11.92 acres (4.81 hectares) of aquatic resources associated with the development of the Off-Site Alternative is considered a **less than significant** effect.

As with the Proposed Action and other alternatives, **Mitigation Measure BIO-1a** would require the preparation and implementation of a wetland avoidance and mitigation plan. Implementation of this mitigation measure would ensure that direct effects to aquatic resources under the Off-Site Alternative would remain **less than significant**.

Indirect Effects

Similar to the Proposed Action which would preserve the on-site aquatic resources in the northwestern portion of the project site where they would be distant from development, preserved aquatic resources within the open space areas of the Off-Site Alternative would be in the southeastern corner of the alternative site and adequately buffered and separated from development. The potential for **indirect** effects to aquatic resources in the long term would be low and the effect would be **less than significant**. Nonetheless, **Mitigation Measure BIO-1b** would be imposed to further reduce this effect.

Table 3.4-14
Off-Site Alternative Impacts to the Waters of the U.S. (in Acres)

Wetland Type	Waters of the U.S. on Alternative Site	Waters of the U.S. within 250 feet of Alternative Site Boundary	On-Site Impacts	Impacts within 250 feet of Alternative Site Boundary	Waters of the U.S. Preserved on Alternative Site
Intermittent Stream	2.1	0.9	<0.1	0.0	3.0
Seasonal Wetland	4.2	0.1	3.5	0.1	0.7
Vernal Pool	0.2	0.4	0.1	0.4	0.1
Wetland Swale	2.7	5.2	2.5	5.2	0.2
Total	9.2	6.6	6.2	5.7	3.9

Source: Salix Consulting 2012

Mitigation Measure BIO-1a: Restoration and/or Establishment of Wetlands and Other Waters of the U.S.
(Applicability – Proposed Action and All Alternatives except No Action)

Prior to the approval of the Record of Decision for the Proposed Action, in order to mitigate for the unavoidable loss of wetlands and other waters of the U.S., the Applicant shall develop a compensatory mitigation and monitoring plan that will consist of restoration or and establishment of aquatic resources on the project site and purchase of vernal pool and seasonal wetlands creation/restoration credits, and/or provide permittee-responsible restoration at an off-site location. This plan shall be implemented prior to or concurrent with the occurrence of impacts. The mitigation and monitoring plan shall include plans for the restoration or establishment of aquatic habitat to adequately offset and replace the aquatic functions and services that would be lost within the project area, and contain an adequate margin of safety to reflect anticipated success, as well as identify any off-site locations proposed for compensatory mitigation and/or identify the mitigation bank proposed to be used and the credits of each habitat type proposed to be purchased. Any mitigation bank proposed to be used shall be located within Placer County and shall include the project site within its service area. In addition, in order to reduce cumulative impacts within the area, the Applicant shall attempt to identify and utilize a mitigation bank located within the same watershed as the proposed impacts. The submitted mitigation and monitoring plan shall include the mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, and shall be presented in the format of current guidance (e.g., USACE Sacramento District’s “Habitat Mitigation and Monitoring Proposal Guidelines,” dated December 30, 2004, USACE regulations at 33 CFR 332, etc.). The compensatory mitigation plan shall ensure no net loss of wetland functions and services of all aquatic resources that would be removed, lost, and/or degraded as a result of implementing the proposed project or any alternative.

Within the Record of Decision for the Proposed Action, the USACE shall document its determination regarding the appropriate amount and type of restoration or establishment required to ensure no net loss of aquatic resource functions and services, based on a number of factors, including the functions of the resources being impacted, the difficulty of replacing the specific resource, uncertainty and risk of failure, indirect impacts and temporal loss. Any approval of a final mitigation and monitoring plan by the USACE shall include requirements for site protection, the implementation of appropriate financial assurances and monitoring of the creation and/or restoration areas in accordance with applicable regulations and guidance.

Mitigation Measure BIO-1b: Preservation of On-Site and Off-Site Wetlands and Other Waters of the U.S.
(Applicability – Proposed Action and All Alternatives except No Action)

All wetlands and other waters of the U.S. and any vegetated buffers avoided on the project site shall be placed into a separate “preserve” parcel prior to construction activities within waters of the U.S. Prior to the Record of Decision for the Proposed Action, the Applicant shall develop and submit to the USACE, for review and approval, a specific and detailed preserve management plan for the on-site preservation and avoidance areas. The plan shall describe in detail any activities that are proposed within the preserve areas and the long term funding and maintenance and monitoring of each of the preserve areas. The Applicant shall not construct any roads, utility lines, outfalls, trails,

benches, firebreaks or other structure, and shall not conduct any grading, mowing, grazing, planting, discing, pesticide use, burning, or other activities within any on-site or off-site preserve areas without specific, advanced written approval from the USACE. The Applicant shall install temporary fencing around preserved wetlands to avoid inadvertent impacts from ongoing construction near preserved wetlands. No roads, utility lines, outfalls, trails, benches, firebreaks or other structure shall be constructed within the on-site or off-site preserve areas, unless specifically approved by the USACE. Any preserve areas that are located on-site or that are off-site turnkey preservation areas located within the City of Roseville shall be subject to management by the City of Roseville under the City's Open Space Preserve Overarching Management Plan.

Prior to the Record of Decision for the Proposed Action, the Applicant shall develop and submit to the USACE, for review and approval, a specific and detailed preserve management plan for any proposed off-site preservation and on-site avoidance areas. The plan shall describe in detail any activities that are proposed within the preserve areas and the long term funding and maintenance and monitoring of each of the preserve areas.

Within the Record of Decision for the Proposed Action, the USACE shall document its determination on whether any required on-site preservation or any proposed off-site preservation is an appropriate method of compensatory mitigation to offset unavoidable impacts to aquatic resources on the project site. If the USACE determines that preservation of on-site or off-site aquatic resources is appropriate to utilize as compensatory mitigation, the USACE will determine the amount and type of preservation required to ensure no net loss of aquatic resource functions and services, based on a number of factors, including the functions of the resources being impacted, the difficulty of replacing the specific resource, uncertainty and risk of failure, indirect impacts and temporal loss. Any approval of a long-term management plan by the USACE shall include requirements for site protection, the implementation of appropriate financial assurances and monitoring of the preserve areas in accordance with applicable regulations and guidance.

Impact BIO-2 Effects on Listed Vernal Pool Invertebrates and Their Habitat

No Action Alt. Under the No Action Alternative, no aquatic resources would be filled. In addition to avoiding all wetlands, the land use plan for the No Action Alternative would create a 100-foot (30-meter) buffer around all aquatic resources that would further protect the preserved aquatic resources. Therefore, there would be **no direct** impacts to listed vernal pool invertebrates aquatic habitat from development under the No Action Alternative.

However, the No Action Alternative could indirectly affect habitat in that some vernal pools and seasonal wetlands on the project site and adjacent to its boundaries would be located within 250 feet (76 meters) of development, and their habitat value could be adversely affected because construction activities and development would encroach near them. In addition, impervious surfaces added to the site under this alternative could change the hydrology and geomorphology of the wetlands, and the development of the site would substantially fragment the vernal pool habitat. In addition, there could be long term indirect effects associated with illegal dumping of wastes and other discharges into

the waters as well as inadvertent intrusions into habitat areas by the residents of the project site. For all of these reasons, development of the No Action Alternative could result in indirect effects on listed vernal pool invertebrates and their habitat. The effect on listed vernal pool invertebrates or their habitat under the No Action Alternative would be a **significant indirect** effect.

Although **Mitigation Measure BIO-2a** is available to avoid and reduce any indirect impacts of the No Action Alternative on preserved aquatic resources, in the absence of any approval action for the No Action Alternative, the USACE has no jurisdiction to impose this mitigation measure on this alternative. Therefore the indirect effect of this alternative on invertebrate habitat would remain **significant and unavoidable**.

**Proposed
Action**

The Proposed Action would directly and indirectly affect listed vernal pool invertebrates and their habitat. As noted earlier, the project site is located in the Placer County core area (Zone 2) identified by the USFWS for the recovery of vernal pool invertebrate species. Vernal pool fairy shrimp have been observed within two watersheds entirely on the project site and two watersheds that are partially on the project site. Suitable habitat for listed vernal pool invertebrates such as vernal pool fairy shrimp and vernal pool tadpole shrimp is present on the project site. Vernal pool invertebrate aquatic habitat is recognized here as all wetlands with vernal pool hydrology. Because the line between vernal pools and seasonal wetlands is often obscure, it is reasonable to apply a geomorphic standard rather than a vegetation standard to determine whether or not a particular feature could support a breeding population of listed vernal pool invertebrates. Vernal pool hydrology means those wetlands that fill with winter rains and dry by mid spring and do not receive any dry season supplemental water. On the project site, this includes vernal pools, seasonal wetlands, and depressional areas within wetland swales.

The Proposed Action would directly affect listed vernal pool invertebrates and their aquatic habitat by grading and placing fill in vernal pools, seasonal wetlands, and swale depressional areas. Grading activities would result in species mortality and permanent loss of vernal pool habitat. In addition, as noted earlier, should construction activities occur within 250 feet of vernal pools and wetlands, even though those pools and wetlands would not be filled, the habitat value of the pools could decline. **Table 3.4-15, Proposed Action Impacts to Listed Vernal Pool Invertebrate Habitat**, presents the total amount of vernal pool invertebrate aquatic habitat present on the project site and the off-site impact area, acres of habitat directly and indirectly impacted by the Proposed Action on the project site as well as off-site. As the table shows, of the total invertebrate aquatic habitat on the project site and the off-site impact area which is defined to include vernal pools, seasonal wetlands and swale depressional areas only, the Proposed Action would directly remove by filling about 2.31 acres (0.94 hectare) within watersheds where listed vernal pool invertebrates were detected and about 0.31 acre (0.13 hectare) in watersheds where listed vernal pool invertebrates were not detected. In addition, development in the

northwestern portion and the southern portion of the project site would be less than 250 feet (76 meters) of wetlands and vernal pools that are either off-site or within the designated open space area on the project site. Although the Proposed Action would not directly fill these aquatic habitats, the Proposed Action would have the potential to indirectly affect them because urban development would be less than 250 feet (76 meters) of these features. An estimated 0.68 acre (0.28 hectare) of vernal pool invertebrate habitat would be affected indirectly in this manner.

If invertebrate aquatic habitat is defined to include vernal pools, seasonal wetlands and wetland swales, then based on the numbers in **Table 3.4-15**, the Proposed Action would directly affect about 8.5 acres of this habitat and indirectly affect another 0.61 acre.

The impact acreages reported above include about 0.02 acre of direct impacts and about 0.19 acre of indirect impacts which are anticipated to occur off-site on resources present along the project site's southern boundary. The two properties to the south of the project site are part of the Sierra Vista Specific Plan. In the event that that project receives DA permits from the USACE and the two properties to the south begin construction before the Westbrook project is authorized and begins construction, these off-site direct and indirect impacts would not occur in association with the Westbrook project.

Table 3.4-15
Proposed Action Impacts to Listed Vernal Pool Invertebrate Habitat (in Acres)

Type	Total Potential Habitat	Project Site			Off-Site	
		Occurrence Detected Watersheds - Direct Impacts	Occurrence Not Detected Watersheds - Direct Impacts	Occurrence Detected Watersheds - Indirect Impacts	Occurrence Detected Watersheds - Direct Impacts ¹	Occurrence Detected Watersheds - Indirect Impacts ²
Vernal Pools	2.60	0.78	0.10	0.35	0.01	0.11
Seasonal Wetlands	1.38	0.41	0.21	0.12	0.00	0.03
Wetland Swales	7.80	5.53	1.44	0.00	0.03	0.00
Swale Depressional	1.18	1.11	0.00	0.02	0.01	0.05
Total³	5.16	2.30	0.31	0.49	0.02	0.19
Total⁴	11.78	6.72	1.75	0.47	0.04	0.14

Source: Gibson & Skordal 2012a; Impact Sciences 2012

Note: Swale depressional areas are depressions within wetland swales. Wetland swale acreage includes swale depressional acreage.

¹ Off-Site direct impacts are assumed to occur to invertebrate habitat within a 30-foot band of the project site.

² Off-Site indirect impacts are assumed to occur to invertebrate habitat between 30 feet and 250 feet of the project site.

³ Total includes vernal pools, seasonal wetlands, and swale depressional habitat.

⁴ Total includes vernal pools, seasonal wetlands, and wetland swale habitat.

Based on the above, the USACE has determined that the loss of listed vernal pool invertebrates or their habitat as a result of grading, filling, or indirect degradation would

be a **significant direct** and **indirect** effect.

As discussed under **Impact BIO-1** above, **Mitigation Measure BIO-1a** would be implemented to mitigate the impacts of the Proposed Action on waters of the U.S., including vernal pools. This mitigation would also compensate for the loss of invertebrate habitat and mitigate the Proposed Action's **direct** effects on listed vernal pool invertebrates. In addition, **Mitigation Measures BIO-1b** and **2b** would be implemented to mitigate the Proposed Action's **indirect** effects on listed vernal pool invertebrates.

As stated earlier, the Westbrook project designates the northwestern corner of the project site as open space/wetlands preserve, and vernal pool invertebrate habitat present within this open space area would not be directly affected. A pedestrian trail under the Proposed Action would be located along the southern edge of the open space area and would include educational signage at open space boundaries. This would minimize the potential for indirect effects from passive recreational use and human access. However, ground-disturbing activities associated with development of the area to the south of the open space area, as well as ground disturbing activities associated with the construction of created wetlands within the open space area would have the potential to impact the avoided vernal pool invertebrate habitat. In addition changes to hydrological conditions or erosion of adjacent uplands that could result in the deposition of sediment within the avoided wetlands, discharge of urban runoff containing fertilizers, pesticides and herbicides, and an increase in exotic weed species are some of the other potential indirect effects that could occur on the avoided habitat on-site as well vernal pool invertebrate habitat off-site along the project site boundary. Maintenance activities such as firebreak maintenance, weed abatement, and maintenance of the trail, could also degrade habitat. **Mitigation Measure BIO-1b** would avoid and reduce indirect impacts on preserved vernal pools and wetlands from construction. In summary, with mitigation, this would be a **less than significant indirect** effect.

**Alts. 1&2
(Reduced
Footprint
Increased
Density/Same
Density)**

Alternatives 1 and 2 would have the same development footprint and are therefore evaluated together. As shown in **Table 3.4-16**, if suitable habitat is defined to include vernal pools, seasonal wetlands and swale depressional areas only, the alternatives would directly affect about 1.06 acres (0.43 hectare) within watersheds where listed vernal pool invertebrates were detected and about 0.46 acre (0.19 hectare) in watersheds where listed vernal pool invertebrates were not detected for a total direct effect on 1.52 acres (0.62 hectare). As with the Proposed Action, some of the development under Alternatives 1 and 2 would be within 250 feet (76 meters) of invertebrate aquatic habitat that would not be filled by the alternative but could be indirectly degraded. An estimated 1.35 acres (0.55 hectare) of habitat would be affected in this manner.

If suitable aquatic habitat for invertebrates is defined to include vernal pools, seasonal

wetlands and wetland swales, then based on the numbers in **Table 3.4-16**, Alternatives 1 and 2 would directly affect about 2.95 acres and indirectly affect another 1.31 acres of this habitat.

The loss of listed vernal pool invertebrates or their habitat as a result of grading, filling, or indirect degradation under Alternatives 1 and 2 would be a **significant direct and indirect** effect.

Mitigation Measure BIO-1a would reduce direct effects on listed vernal pool invertebrate habitat by providing replacement habitat and preserving wetlands similar to those removed by the alternative. **Mitigation Measures BIO-1b** and **BIO-2b** would also be implemented to avoid or reduce both direct and indirect impacts on vernal pool species habitat within the preserved areas on the project site. With mitigation, the **direct and indirect** effects would be **less than significant**.

Table 3.4-16
Alternatives 1 and 2 Impacts to Listed Vernal Pool Invertebrate Habitat (in Acres)

Type	Total Potential Habitat	Project Site			Off-Site	
		Occurrence Detected Watersheds - Direct Impacts	Occurrence Not Detected Watersheds - Direct Impacts	Occurrence Detected Watersheds - Indirect Impacts	Occurrence Detected Watersheds - Direct Impacts 1	Occurrence Detected Watersheds - Indirect Impacts 2
Vernal Pools	2.60	0.27	0.10	N/A	0.01	0.07
Seasonal Wetlands	1.38	0.58	0.19	N/A	0.00	0.03
Wetland Swales	7.80	0.96	0.84	N/A	0.00	0.00
Swale Depressional	1.18	0.19	0.17 ³	N/A	0.01	0.04
Total⁴	5.16	1.04	0.46	1.21⁶	0.02	0.14
Total⁵	11.78	1.81	1.13	1.21	0.01	0.10

Source: Gibson & Skordal 2012a and 2012c; Impact Sciences 2012

¹ Off-Site direct impacts are assumed to occur to invertebrate habitat within a 30-foot band of the project site.

² Off-Site indirect impacts are assumed to occur to invertebrate habitat between 30 feet and 250 feet of the project site.

³ This number was estimated using the ratio of the acreage of swale depressional found within wetland swales in occurrence-detected watersheds for the Proposed Action.

⁴ Total includes vernal pools, seasonal wetlands, and swale depressional habitat.

⁵ Total includes vernal pools, seasonal wetlands, and wetland swale habitat.

⁶ This acreage is within 250 feet (76 meters) of project site development and therefore will be indirectly affected.

Alt. 3 (Central Preserve) Alternative 3 would focus the area of development on the project site and leave large areas in the center of the site as open space, thus providing a contiguous swath of open space in the central and northwestern portion of the project site. As shown in **Table 3.4-17, Alternative 3 Impacts to Listed Vernal Pool Invertebrate Habitat**, if suitable habitat of invertebrates is defined to include vernal pools, seasonal wetlands and swale depressional

areas only, the alternative would directly affect about 1.95 acres (0.79 hectare) of invertebrate aquatic habitat within watersheds where listed vernal pool invertebrates were detected and about 0.56 acre (0.23 hectare) in watersheds where listed vernal pool invertebrates were not detected for a total direct effect on 2.51 acres (1.02 hectares). In addition, development under this alternative would have the potential to indirectly affect about 0.31 acre (0.13 hectare) of invertebrate aquatic habitat.

If suitable invertebrate aquatic habitat is defined to include vernal pools, seasonal wetlands and wetland swales, then based on the numbers in **Table 3.4-17**, Alternative 3 would directly affect about 5.26 acres and indirectly affect another 0.27 acre of this habitat.

The loss of listed vernal pool invertebrates or their habitat as a result of grading, filling, or indirect degradation would be a **significant direct** and **indirect** effect of the alternative.

Mitigation Measure BIO-1a would reduce impacts on listed vernal pool invertebrate habitat by providing replacement habitat and preserving wetlands similar to those removed by the alternative. **Mitigation Measures BIO-1b** and **BIO-2b** would also be implemented to avoid or reduce both direct and indirect impacts on vernal pool species habitat within the preserved areas on the project site. The **direct** and **indirect** effect would be **less than significant** with mitigation.

Table 3.4-17
Alternative 3 Impacts to Listed Vernal Pool Invertebrate Habitat (in Acres)

Type	Total Potential Habitat	Project Site			Off-Site	
		Occurrence Detected Watersheds - Direct Impacts	Occurrence Not Detected Watersheds - Direct Impacts	Occurrence Detected Watersheds - Indirect Impacts	Occurrence Detected Watersheds - Direct Impacts 1	Occurrence Detected Watersheds - Indirect Impacts 2
Vernal Pools	2.60	1.15	0.10	N/A	0.01	0.07
Seasonal Wetlands	1.38	0.34	0.21	N/A	0.00	0.03
Wetland Swales	7.80	2.20	1.25	N/A	0.00	0.00
Swale Depressional	1.18	0.44	0.25 ³	N/A	0.01	0.04
Total ⁴	5.16	1.93	0.56	0.17 ⁶	0.02	0.14
Total ⁵	11.78	3.69	1.56	0.17	0.01	0.10

Source: Gibson & Skordal 2012a and 2012c; Impact Sciences 2012

¹ Off-Site direct impacts are assumed to occur to invertebrate habitat within a 30-foot band of the project site.

² Off-Site indirect impacts are assumed to occur to invertebrate habitat between 30 feet and 250 feet of the project site.

³ This number was estimated using the ratio of the acreage of swale depressional found within wetland swales in occurrence-detected watersheds for the Proposed Action.

⁴ Total includes vernal pools, seasonal wetlands, and swale depressional habitat.

⁵ Total includes vernal pools, seasonal wetlands and wetland swales.

⁶ This acreage is within 250 feet (76 meters) of development and therefore will be indirectly affected.

Alt. 4 (One Acre Fill) Alternative 4 would avoid filling of the vast majority of wetlands on the project site such that the alternative would involve only approximately 1 acre of fill. As a result, direct impacts to listed vernal pool invertebrate habitat would be substantially reduced.

As shown in **Table 3.4-18, Alternative 4 Impacts to Listed Vernal Pool Invertebrate Habitat**, if suitable habitat for invertebrates is defined to include vernal pools, seasonal wetlands and swale depressional areas only, the alternative would directly affect about 0.48 acre (0.20 hectare) of invertebrate aquatic habitat within watersheds where listed vernal pool invertebrates were detected and about 0.04 acre (<0.02 hectare) in watersheds where listed vernal pool invertebrates were not detected for a total direct effect on 0.52 acre (0.21 hectare). The alternative would also have the potential to indirectly affect about 2.27 acres (0.92 hectare) of invertebrate aquatic habitat.

If invertebrate aquatic habitat is defined to include vernal pools, seasonal wetlands and wetland swales, then based on the numbers in **Table 3.4-18**, Alternative 4 would directly affect about 0.92 acre and indirectly affect another 2.23 acres of this habitat.

Given the small number of acres of habitat affected directly or indirectly, the impact on listed vernal pool invertebrates or their habitat as a result of grading, filling, or indirect degradation would be a **less than significant direct** and **indirect** effect of the alternative.

As discussed under **Impact BIO-1**, as the wetland fill under this alternative would be less than 1 acre (0.4 hectare), the USACE would consider authorization of this alternative under the LOP process. As noted earlier, a LOP will be issued only for those activities which meet specific criteria and which have only minor impacts on the aquatic environment. In addition, in accordance with 33 CFR 332 and the District's Mitigation and Monitoring Guidelines, applications for the LOP must include a compensatory mitigation plan that clearly demonstrates impacts to aquatic resources have been and will be avoided and minimized to the maximum extent practicable and there will be a net increase in functions of aquatic resources. In addition, any activity authorized by LOP must also meet the LOP general conditions.

Mitigation provided pursuant to the LOP would further reduce the impact of Alternative 4 on vernal pool invertebrate aquatic habitat.

Table 3.4-18
Alternative 4 Impacts to Listed Vernal Pool Invertebrate Habitat (in Acres)

Type	Total Potential Habitat	Project Site			Off-Site	
		Occurrence Detected Watersheds - Direct Impacts	Occurrence Not Detected Watersheds - Direct Impacts	Occurrence Detected Watersheds - Indirect Impacts	Occurrence Detected Watersheds - Direct Impacts 1	Occurrence Detected Watersheds - Indirect Impacts 2
Vernal Pools	2.60	0.22	0.00	N/A	0.01	0.07
Seasonal Wetlands	1.38	0.18	0.00	N/A	0.00	0.03
Wetland Swales	7.80	0.32	0.20	N/A	0.00	0.00
Swale Depressional	1.18	0.06	0.04 ³	N/A	0.01	0.04
Total ⁴	5.16	0.46	0.04	2.13 ⁶	0.02	0.14
Total ⁵	11.78	0.72	0.20	2.13	0.01	0.10

Source: Gibson & Skordal 2012a and 2012c; Impact Sciences 2012

¹ Off-Site direct impacts are considered to be invertebrate habitat within a 30-foot band of the project site.

² Off-Site indirect impacts are considered to be invertebrate habitat between 30 feet and 250 feet of the project site.

³ This number was estimated using the ratio of the acreage of swale depressional found within wetland swales in occurrence-detected watersheds for the Proposed Action.

⁴ Total includes vernal pools, seasonal wetlands, and swale depressional habitat

⁵ Total includes vernal pools, seasonal wetlands, and wetland swale habitat

⁶ This acreage is within 250 feet (76 meters) of development and therefore will be indirectly affected.

Alt. 5 (Half Acre Fill) Alternative 5 would avoid filling of wetlands on the project site such that it would fill only about 0.5 acre (0.2 hectare) of jurisdictional wetlands. As a result, it would also substantially avoid the direct filling of invertebrate aquatic habitat on the project site and result in substantially reduced indirect effects on invertebrate habitat.

As shown in **Table 3.4-19, Alternative 3 Impacts to Listed Vernal Pool Invertebrate Habitat**, if suitable habitat for invertebrates is defined to include vernal pools, seasonal wetlands and swale depressional areas only, the alternative would directly affect about 0.27 acre (0.11 hectare) and indirectly affect 2.35 acres (0.95 hectare) within watersheds where listed vernal pool invertebrates were detected on the project site. The alternative would not affect watersheds where listed vernal pool invertebrates were not detected on the project site. In addition, this alternative would not directly or indirectly affect off-site habitat.

If invertebrate aquatic habitat is defined to include vernal pools, seasonal wetlands and wetland swales, then based on the numbers in **Table 3.4-19**, Alternative 5 would directly affect about 0.47 acre (0.19 hectare) and indirectly affect 2.35 acres (0.95 hectare) of this habitat.

Given the small number of acres of habitat affected directly or indirectly, the impact on

listed vernal pool invertebrates or their habitat as a result of grading, filling, or indirect degradation associated with Alternative 5 would be a **less than significant direct and indirect** effect.

As discussed under **Impact BIO-1**, as the wetland fill would be less than 0.5 acre (0.2 hectare), the USACE would consider authorization of this alternative under a nationwide permit. A nationwide permit would require that the fill impact be mitigated at a minimum ratio of 1:1 or at a ratio calculated through the use of the District's Mitigation Ratio Checklist. In addition, the alternative would also be required to comply with the general conditions in the nationwide permit.

Mitigation provided pursuant to the nationwide permit would further reduce the impact of Alternative 5 on vernal pool invertebrate aquatic habitat.

Table 3.4-19
Alternative 5 Impacts to Listed Vernal Pool Invertebrate Habitat (in Acres)

Type	Total Potential Habitat	Project Site			Off-Site	
		Occurrence Detected Watersheds - Direct Impacts	Occurrence Not Detected Watersheds - Direct Impacts	Occurrence Detected Watersheds - Indirect Impacts	Occurrence Detected Watersheds - Direct Impacts ¹	Occurrence Detected Watersheds - Indirect Impacts ²
Vernal Pools	2.60	0.08	0.00	N/A	0.00	0.00
Seasonal Wetlands	1.38	0.14	0.00	N/A	0.00	0.00
Wetland Swales	7.80	0.13	0.12	N/A	0.00	0.00
Swale Depressional	1.18	0.03	0.02 ³	N/A	0.00	0.00
Total ⁴	5.16	0.25	0.02	2.35⁶	0.00	0.00
Total ⁵	11.78	0.35	0.12	2.35	0.00	0.00

Source: Gibson & Skordal 2012a and 2012c; Impact Sciences 2012

¹ Off-Site direct impacts are considered to be invertebrate habitat within a 30-foot band of the project site.

² Off-Site indirect impacts are considered to be invertebrate habitat between 30 feet and 250 feet of the project site.

³ This number was estimated using the ratio of the acreage of swale depressional found within wetland swales in occurrence-detected watersheds for the Proposed Action.

⁴ Total includes vernal pools, seasonal wetlands, and swale depressional habitat.

⁵ Total includes vernal pools, seasonal wetlands, and wetland swale habitat.

⁶ This acreage is within 250 feet (76 meters) of development and therefore will be indirectly affected.

Off-Site Alt. Suitable habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp occurs on the alternative site in association with vernal pools, seasonal wetlands, and swales embedded within annual grassland and located throughout the site. As shown in **Table 3.4-20, Off-Site Alternative Approximate Impacts to Listed Vernal Pool Invertebrate Habitat**, this alternative would involve direct impacts to approximately 11.8 acres (4.8 hectares) of listed vernal pool invertebrate aquatic habitat. Impacts within the 250-foot buffer are reported to

be direct. Additional impacts to vernal pool invertebrate habitat (0.02 acre or 0.01 hectare) would result from off-site improvements associated with this alternative as portions of those improvements traverse annual grassland habitat that contains seasonal wetlands and vernal pools. Direct loss and indirect degradation of this habitat as a result of the development of Off-Site Alternative would be a **significant direct** and **indirect** impact.

Mitigation Measure BIO-1a would reduce direct effects on listed vernal pool crustacean habitat by providing replacement habitat and preserving wetlands similar to those removed by the alternative. **Mitigation Measures BIO-1b** and **BIO-2b** would also be implemented to avoid or reduce both direct and indirect impacts on vernal pool species within the preserved areas on the alternative site. With mitigation, the effect would be **less than significant**.

Table 3.4-20
Off-Site Alternative Approximate Impacts to Listed Invertebrate Habitat¹ (in Acres)

Type	Total Potential Habitat	On-Site Direct Impacts	Off-Site Direct Impacts ²
Vernal Pools	0.6	0.1	0.4
Seasonal Wetlands	4.3	3.5	0.1
Wetland Swale	7.9	2.5	5.2
Total	12.8	6.1	5.7

Source: Salix Consulting 2012

¹ These acreages are approximate and are not based on wetland delineations. The acreages do not include off-site infrastructure impacts.

² Off-Site impacts are assumed to occur to invertebrate habitat within the 250-foot buffer around the site.

Mitigation Measure BIO-2a: **Secure Take Authorization for Federally Listed Vernal Pool Invertebrates**
(Applicability – No Action)

No project construction shall proceed in areas supporting potential habitat for federally listed vernal pool invertebrates or within adequate buffer areas (generally 250-feet from habitat) until a biological opinion (BO) and incidental take permit has been issued by the USFWS.

Mitigation Measure BIO-2b: **Secure Take Authorization for Federally Listed Vernal Pool Invertebrates and Implement Permit Conditions**
(Applicability – Proposed Action, Alternatives 1 through 3, and Off-Site Alternative)

No project construction shall proceed in areas supporting potential habitat for federally listed vernal pool invertebrates or within adequate buffer areas (generally 250-feet from habitat) until a biological opinion (BO) and incidental take statement has been issued by the USFWS. The USACE will consult with the USFWS under Section 7 of the Endangered Species Act and if the USACE determines DA permits will be issued for impacts to habitat on the project site or alternative site, the BO conditions shall be incorporated into the terms and conditions of the DA

permits. The Applicant shall abide by permit conditions (including conservation and minimization measures) intended to be completed before on-site construction.

The Applicant will not be required to complete this mitigation measure for direct or indirect impacts that have already been mitigated to the satisfaction of the USFWS through another BO or mitigation plan.

Impact BIO-3 Effects on Federally Listed Plant Species

No Action Alt. Vernal pools on the project site represent potential habitat for federally listed plant species. Conditions that could support other listed plant species do not exist on the project site. Although focused special-status plant surveys were conducted during the blooming period for all special-status plant species likely to occur in the area, none of the federally listed plant species were observed on the project site or in the off-site impact area. Furthermore, as discussed in **Subsection 3.4.2.8**, it is unlikely that federally listed vernal pool plant species would occur on the project site because the habitat on the site is marginal and there are no known occurrences of the federally listed plant species in Placer County. Specifically, the federally listed slender orcutt grass and Sacramento Valley orcutt grass species are unlikely to occur at the project site because the species prefer larger, deeper vernal pools than those that occur within the project site. As there are no federally listed plant species known to or likely to occur on the project site, implementation of the No Action Alternative would not affect federally listed plant species. The **direct** effect would be **less than significant**. No mitigation is required. **No indirect** effect would occur.

Proposed Action, Alts. 1 through 5 As there are no federally listed plant species known to or likely to occur on the project site, implementation of the Proposed Action and Alternatives 1 through 5 would not affect federally listed plant species. The **direct** effect would be **less than significant**. No mitigation is required. **No indirect** effect would occur.

Off-Site Alt. The alternative site contains potential habitat for special-status plant species. As discussed in **Subsection 3.4.2.14**, although focused plant surveys on the site were not conducted due to lack of access, it is unlikely that federally listed vernal pool plant species such as Sacramento Valley orcutt grass and slender orcutt grass would occur on the site because the habitat on the site is marginal and there are no known occurrences of these species in Placer County. In addition, no federally listed plant species are known to or likely to occur along the off-site infrastructure corridor. As there are no federally listed plant species known to or are likely to occur the areas that would be developed or disturbed in conjunction with the Off-Site Alternative, implementation of the Off-Site Alternative would not affect federally listed plant species. The **direct** effect would be **less than significant**. No mitigation is required. **No indirect** effect would occur.

Impact BIO-4 Effects on Federally Listed Amphibian and Reptile Species

No Action Alt. As discussed in **Subsection 3.4.2.8**, the site is within the CTS range and suitable habitat exists on the site. However, because the species was not observed during branchiopod surveys of the on-site wetlands and the species is not known to occur in Placer County, CTS is unlikely to occur on the project site. Implementation of the No Action Alternative would have a **less than significant direct** effect on CTS. **No indirect** effects would occur.

Similarly, although the site is in the historic range of the CRLF, because the species was not observed during branchiopod surveys of the project site, the nearest known occurrence of the species is about 35 miles (56 kilometers) from the project site, and no suitable habitat is present on the site, CRLF is unlikely to occur on the project site. Implementation of the No Action Alternative would have a **less than significant direct** effect on CRLF.

The project site is within giant garter snake historic range. There are no documented occurrences of giant garter snakes in western Placer County and the nearest occurrence is 5 miles (8 kilometers) from the project site in the Natomas Basin. The two intermittent streams in the northwestern portion of the project site provide marginal habitat for the species and they are hydrologically connected to the Natomas Basin. Consequently, there is a low potential for the species to occur on the project site. However, no construction activities associated with the No Action Alternative would occur in or near the intermittent streams. Therefore, the No Action Alternative is not likely to adversely affect giant garter snake. The **direct** effect would be **less than significant**. No mitigation is required. **No indirect** effects would occur.

Proposed Action, Alts. 1 through 5 For the same reasons presented above for the No Action Alternative, the **direct** effect of the Proposed Action and Alternatives 1 through 5 on CTS and CRLF would be **less than significant**.

With respect to giant garter snake, as noted above, marginal habitat for the species occurs in the two intermittent streams in the northwestern portion of the project site. No development is proposed under the Proposed Action or Alternatives 1 through 5 in or around the intermittent streams as the area would be preserved as open space. However, the wetlands compensatory mitigation plan put forth by the Applicant for the Proposed Action would involve grading and excavation in uplands adjacent to the streams in order to construct new wetlands and a floodplain expansion area. Although the potential to encounter giant garter snake in this area exists, the limited grading activities in this area are unlikely to adversely affect the species. The **direct** effect would be **less than significant**. No mitigation is required. **No indirect** effect

would occur.

Off-Site Alt. As discussed above in **Subsection 2.4.2.14**, the alternative site does not support CTS, CRLF, or giant garter snake. However, marginally suitable habitat for the giant garter snake is located along Pleasant Grove Creek, and construction activities associated with the off-site infrastructure could result in take of the species. Therefore, the **direct** effect on giant garter snake would be potentially **significant**. **Mitigation Measure BIO-4** would ensure that giant garter snakes, if encountered during construction, are not adversely affected. With mitigation, the **direct** effect would be **less than significant**. **No indirect** effect would occur.

Mitigation Measure BIO-4: Giant Garter Snake Impact Mitigation
(Applicability – Off-Site Alternative)

No project construction shall proceed in areas containing potential habitat for giant garter snake until a biological opinion (BO) and an incidental take permit has been issued by the USFWS. The USACE will consult with the USFWS under Section 7 of the Endangered Species Act and the BO conditions shall be incorporated into the terms and conditions of the DA permit. The Applicant shall abide by permit conditions (including conservation and minimization measures) intended to be completed before construction.

Impact BIO-5 Effects on Valley Elderberry Longhorn Beetle

No Action Alt., Proposed Action, Alts. 1 through 5 Numerous field surveys conducted on the project site did not detect any elderberry shrubs which provide habitat for the valley elderberry longhorn beetle (VELB), a federally listed species. Therefore, implementation of the No Action Alternative, Proposed Action, and Alternatives 1 through 5 will not adversely affect this species. The **direct** and **indirect** effect on VELB would be **less than significant**. No mitigation is required.

Off-Site Alt. Elderberry shrubs were not observed on the alternative site during the reconnaissance survey. Furthermore, the nearest known occurrences are to the northeast and east along the Bear River near Wheatland and from the Rocklin area. However, the absence of elderberry shrubs could not be conclusively established for the alternative site during the August 2012 reconnaissance survey. Therefore, elderberry shrubs could occur in some portions of the site. To the extent that these occur outside of riparian areas, they are less likely to support VELB. However, elderberry shrubs within riparian area of the intermittent stream would be more likely to support VELB and all elderberry shrubs are considered potential habitat. In addition, the construction of the off-site infrastructure would involve crossing Pleasant Grove Creek and thus could impact elderberry shrubs. Development of the alternative site and the off-site infrastructure corridor, therefore, has the potential to result in a **significant direct** and **indirect** effect on VELB and its habitat. **Mitigation Measure**

BIO-5 would mitigate this effect to **less than significant**.

Mitigation Measure BIO-5: Valley Elderberry Longhorn Beetle (VELB)
(Applicability – Off-Site Alternative)

Prior to any ground disturbing or construction activities on the alternative site, the Applicant shall conduct pre-construction surveys of the entire property for the presence of elderberry shrubs and submit the results to the USACE and USFWS for review. For any impacts within 100 feet (30 meters) of an identified elderberry shrub, the Applicant shall consult with the USFWS. The Applicant shall install and maintain a 4-foot-high construction fence around the perimeter of the elderberry shrub. No grading or any other ground disturbing activities shall be conducted within the fenced protected area without prior verification that the requirements of the USFWS have been satisfied, including the issuance of any necessary permits.

The Applicant shall avoid and protect the VELB habitat (elderberry stalks 1 inch in diameter or greater) where feasible. Where avoidance is infeasible, the Applicant shall develop and implement a VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to Section 7 of the Federal Endangered Species Act. The mitigation plan shall include, but might not be limited to, relocation of elderberry shrubs, planting of elderberry shrubs, and monitoring of relocated and planted elderberry shrubs.

Impact BIO-6 Effects on State Special-Status Wildlife Species

No Action Alt. As discussed in **Subsection 3.4.2.8**, no aquatic habitat appropriate for the western pond turtle is located on the project site. Although the western spadefoot toad was not observed on the project site during surveys, there is a potential that it is present on the site. Western spadefoot has been detected in the past in the vicinity of the project site (West Roseville EIR 2004). Furthermore, the project site contains suitable habitat for this species, which includes vernal pools and seasonal wetlands that are used by the species for breeding. As the No Action Alternative would not directly affect vernal pools or seasonal wetlands, it would not affect western spadefoot toad or its breeding habitat. Although the No Action Alternative would develop upland areas that may be used by the species, the amount of development on the site would be limited. The **direct** effect on the species would be **less than significant**. There would be **no indirect** effect.

Proposed Action As noted above, the project site does contain habitat for western spadefoot, including vernal pools, seasonal wetlands, and adjacent upland habitat. The Proposed Action would directly affect vernal pools and seasonal wetlands, and it would develop the upland areas with urban uses. In addition, the Proposed Action could indirectly affect western spadefoot habitat in the long term by adding impervious surfaces that could change the hydrology and geomorphology of the wetted areas. This would be a **significant direct** effect. There would be **no indirect** effect.

Mitigation Measure BIO-6 would minimize the potential for loss of individuals during site grading activities. In compliance with this mitigation measure, prior to earth moving, measures would be implemented to capture any adult or larval western spadefoot toads, or western spadefoot egg masses, and relocate them to suitable habitat. Additionally, implementation of the mitigation plan for loss of wetlands described under **Mitigation Measures BIO-1a** and **BIO2b**, which require preservation and protection of existing vernal pools, would protect individual western spadefoot toads by avoiding impacts on areas that are designated open space. **Mitigation Measure BIO-1a** would also require creation and preservation of wetlands both on-site and off-site. Ensuring no net loss of wetlands would provide protection of potential habitat for western spadefoot by preserving or enhancing and protecting habitat that is capable of supporting this species. Furthermore, pursuant to mitigation measures incorporated in the Proposed Action to address impacts to Swainson's hawk foraging habitat, more than 1,300 acres (526 hectares) of grassland habitat would be preserved. All of these measures would reduce potential **direct** effects to this species to **less than significant**.

Alts. 1 through 5 Similar to the No Action Alternative and the Proposed Action, Alternatives 1 through 5 would result in similar direct and indirect impacts on western spadefoot as described above for the Proposed Action. Based on the significance criteria and for the reasons presented above, the effect on western spadefoot would be **significant**. The same mitigation measures (**Mitigation Measure BIO-6**, **Mitigation Measure BIO-1a**, **Mitigation Measure BIO-2b**, and mitigation for Swainson's hawk habitat impacts) would mitigate the effect. With mitigation, the **direct** effects would be **less than significant**.

Off-Site Alt. The Off-Site Alternative and construction of the off-site infrastructure corridor would result in a similar **significant direct** effect on western spadefoot as described above for the Proposed Action. The same mitigation measures (**Mitigation Measure BIO-6**, **as well as Mitigation Measures BIO-1a and BIO-2b**) would be implemented to mitigate the effects. With mitigation, the **direct** effects would be **less than significant**. There would be **no indirect** effect.

Mitigation Measure BIO-6: Relocate Western Spadefoot Toad
(Applicability – Proposed Action and All Alternatives)³

The location of pools that are occupied by western spadefoot toad shall be determined through surveys conducted during the appropriate season (generally February) by a qualified biologist. Those pools that are found to support western spadefoot toad shall be avoided if feasible. If avoidance is not feasible, the CDFW shall be consulted for its recommendation with respect to an adult or larval or egg masses capture and relocation plan.

³ This measure is substantially the same as Mitigation Measure 4.8-2 in the Sierra Vista Specific Plan EIR and was adopted by the City of Roseville at the time of project approval and will be enforced by the City.

Impact BIO-7 Effects on Protected Raptor Species and Other Nesting Birds

No Action Alt. Ground disturbing activities and tree removal under the No Action Alternative would affect potential nesting habitat of protected bird species. Construction disturbance as part of the project site development could result in active nest abandonment, removal of an active nest, or otherwise injure a raptor or nesting birds. This would be a **significant direct** effect. However, with mitigation, the effect would be **less than significant**. **No indirect** effect would occur.

Grassland and trees within the project site provide suitable foraging habitat and nesting sites for several protected raptor species. Special-status species surveys in the project site (2006–2009) documented the presence of several protected raptor species, including Swainson’s hawk, burrowing owl, white-tailed kite, and northern harrier in the project vicinity, although only one nest site, a red-tailed hawk nest, was observed in the northwestern portion of the project site adjacent to the intermittent stream. Disturbance resulting in active nest abandonment or removal of an active nest or otherwise injuring, pursuing, or killing a protected raptor is prohibited under the Federal Migratory Bird Treaty Act, the California Endangered Species Act, and/or the California Fish and Game Code. The potential effects on nesting birds are presented below.

Swainson’s hawk

Development of the No Action Alternative would eliminate approximately 275 acres (111 hectares) of grassland foraging habitat for this species. CDFW recommends that projects that result in the loss of potential habitat for Swainson’s hawk (which includes grasslands) within 10 miles (16 kilometers) of an active nest site provide mitigation for that loss. As part of the CEQA review process for the Proposed Action and in compliance with California Fish and Game Code, the Applicant has committed to mitigate the loss of Swainson’s hawk foraging habitat by preserving grassland habitat at the CDFW-specified ratios. Although the USACE cannot enforce the measure, the USACE assumes that the City of Roseville will impose the same mitigation measure (**Mitigation Measure BIO-7**) on the No Action Alternative to address the potentially **significant direct** impact to this species. With mitigation, this would be a **less than significant direct** effect. No additional mitigation is required. **No indirect** effect would occur.

Other Raptors

As noted above, a red-tailed hawk nest was observed within the project site and three red-tailed hawk nests were observed nearby. In addition, one great-horned owl nest was observed adjacent to the project site. While these species are relatively common throughout their ranges, disturbances and habitat loss could cause permanent nest abandonment that could affect a portion of the local populations. Several adult northern harriers were observed foraging in the project site during the survey. Although few ground squirrel burrows are present, the entire project site is otherwise considered suitable for the ground-nesting burrowing owls, and may be occasionally used for foraging by the species. Ground disturbing activities and tree removal associated with

the No Action Alternative would affect potential nesting habitat of these raptors species. Construction disturbance as part of the project site development could result in active nest abandonment, removal of an active nest, or otherwise injure a raptor. This would be a **significant direct** effect. **No indirect** effect would occur.

Other Nesting Birds

Tri-colored black birds were not observed on-site and are unlikely to nest on the project site because there is no marsh habitat present that is typically used by the species to nest. There are no known occurrences of California black rail on the project site or in its vicinity. Given the restricted range of the rail and given the absence of marsh habitat on the site, it is unlikely that this species occurs in the project site. No heron rookeries are present within the project site. Although the cluster of cottonwood trees in the northwestern portion of the project site could support rookeries, due to lack of suitable foraging habitat around the trees, rookeries are unlikely to establish in the area. Therefore, it is unlikely that tree removal associated with the No Action Alternative would affect these nesting birds. This would be a **less than significant direct** effect. No mitigation is required. **No indirect** effect would occur.

To ensure that protected bird species are not taken during project construction, **Mitigation Measure BIO-7** would require that, when feasible, tree removals or excavation near potential burrowing owl burrows occur during the period when these species are not nesting (September through February). If removal of trees or excavation near potential burrowing owl burrows during the nesting season is unavoidable, pre-construction surveys shall be conducted to determine whether or not active nests are present. In the event that active nests are present, construction will cease within the vicinity of the nest and appropriate protocols shall be followed in consultation with CDFW during the removal and relocations of those nests. Although the USACE cannot enforce the measure, the USACE assumes that the City of Roseville would impose **Mitigation Measure BIO-7**, which is substantially the same as Mitigation Measure 4.8-3 in the Sierra Vista Specific Plan (SVSP) EIR, on the No Action Alternative to address this effect. With mitigation, the **direct** effect would be **less than significant**.

- Proposed Action, Alts. 1 through 5** For the same reasons presented above for the No Action Alternative, ground disturbing activities and tree removal for the development of the Proposed Action and Alternatives 1 through 5 would affect potential nesting habitat of protected bird species. This would be a **significant direct** effect. **Mitigation Measure BIO-7** would require avoidance and protection of active nest sites. With mitigation, the **direct** effect would be **less than significant**. **No indirect** effect would occur.
- Off-Site Alt.** Development of the Off-Site Alternative and construction of associated off-site infrastructure would also involve ground disturbing activities and tree removal that could affect potential nesting habitat of protected bird species at the alternate site and within the infrastructure corridor. This would be considered a **significant direct** effect. **Mitigation Measure BIO-7** would require avoidance and protection of active nest sites.

With mitigation, the **direct** effect would be **less than significant**. No **indirect** effect would occur.

Mitigation Measure BIO-7:**Protection of Nesting Sites**

(Applicability – No Action, Proposed Action, and All Alternatives)⁴

To ensure that fully protected bird and raptor species are not injured or disturbed by construction in the vicinity of nesting habitat, the Applicant shall implement the following measures:

- a) *If a nest of a legally protected species is located in a tree designated for removal, the removal shall occur between August 30th and February 15th or until the adults and young of the year are no longer dependent on the nest site as determined by a qualified biologist.*
- b) *When feasible, all tree removal shall occur outside the nesting season to avoid the breeding season of any raptor species that could be using the area, and to discourage hawks from nesting in the vicinity of an upcoming construction area.*
- c) *For Swainson's hawk, if avoidance of tree removal outside the breeding season is not feasible, and an active nest is present, the Applicant shall obtain a 2081 permit from CDFW to mitigate for potential "take" under CESA. If no active nesting is occurring, a take permit would not be required.*
- d) *Prior to the beginning of mass grading, including grading for major infrastructure improvements, during the period between February 15th and August 30th, all trees and potential burrowing owl habitat within 350 feet (107 meters) of any grading or earthmoving activity shall be surveyed for active raptor nests or burrows by a qualified biologist no more than 30 days prior to disturbance. If active raptor nests or burrows are found, and the nest or burrow is within 350 feet (107 meters) of potential construction activity, a highly visible temporary fence shall be erected around the tree or burrow(s) at a distance of up to 350 feet (107 meters), depending on the species, from the edge of the canopy to prevent construction disturbance and intrusions on the nest area.*
- e) *Preconstruction and non-breeding season burrowing owl exclusion measures shall be developed in consultation with CDFW, and shall preclude burrowing owl occupation of the portions of the project site subject to disturbance such as grading.*
- f) *No construction vehicles shall be permitted within restricted areas (i.e., raptor protection zones) unless directly related to the management or protection of the legally protected species.*

⁴ This measure is substantially the same as Mitigation Measure 4.8-3 in the Sierra Vista Specific Plan EIR and was adopted by the City of Roseville at the time of project approval and will be enforced by the City.

Impact BIO-8 Effects on State Special-Status Bats

No Action Alt. Proposed The No Action Alternative, Proposed Action, and Alternatives 1 through 5 would result in **less than significant direct** and **indirect** effects on special-status bat species.

Action, Alts. 1 through 5 Three bats potentially occur in the project site, including pallid bat, Townsend's big-eared bat, and Yuma myotis, which are all state species of special concern. Pallid bat occurs primarily in shrubland, woodlands, and forested habitats, but can also occur in grasslands. Townsend's bat occurs in a variety of woodland and open habitats, and the Yuma bat occurs primarily in forests and woodlands. All three species roost in mines, caves, large hollow trees, and occasionally in large open buildings that are usually abandoned or infrequently inhabited. While the project site may support suitable foraging habitat for the bats, there is no suitable habitat that would support roosting or maternity sites. There are no rocky areas, mines, caves, or other features such as built structures (buildings, bridges, etc.) that could support bat roosts. Because of the absence of roosting habitat, the development of the project site with a mixed-use community under the No Action Alternative, Proposed Action, or Alternatives 1 through 5 would result in **less than significant direct** and **indirect** effects on special-status bat species. No mitigation is required.

Off-Site Alt. Similar to the project site, the alternative site provides foraging habitat for bat species but does not contain features that would support roosts. Similarly, while the off-site infrastructure corridor contains foraging habitat for bat species, it also does not contain features that would support roosts. Therefore, the development of the alternative site with a mixed-use community and construction of the off-site infrastructure would result in **less than significant direct** and **indirect** effects on special-status bat species. No mitigation is required.

Impact BIO-9 Effects on Wildlife Movement

No Action Alt. Wildlife movement activities generally fall into one of three movement categories: (1) dispersal (e.g., of juvenile animals from natal areas or individuals extending range distributions), (2) seasonal migration, and (3) movement related to home range activities (foraging for food or water, defending territories, or searching for mates, breeding areas, or cover).

Wildlife corridors link areas of suitable wildlife habitat that are otherwise separated by changes in vegetation or human disturbance. The fragmentation of open space areas by urbanization creates isolated islands of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, some wildlife species, especially the larger and more mobile mammals, would not likely persist over time because fragmentation prohibits the infusion of new individuals and genetic information. Corridors mitigate the effects of this fragmentation by (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be

replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events, and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, and other needs.

The site plan under the No Action Alternative designates substantial acreage of land adjacent to the intermittent creeks in the northwestern portion of the site as open space. This open space would be contiguous with the designated open space within the West Roseville Specific Plan Area and wildlife movement along the creek corridors is not expected to be affected. The open space area along the intermittent creeks would not be developed with roads or bridges and therefore there would be no potential for obstructing wildlife movement within this area.

The development of the mixed-use community in the remainder of the site would have the potential to obstruct wildlife movement. Although the No Action Alternative includes numerous patches of open space in several parts of the project site, these spaces are largely discontinuous and would provide very limited wildlife movement areas within the project site.

In the short term, the area to the north of the project site is already approved for development, but the area to the south has not been authorized for development by the USACE. The No Action Alternative would impact wildlife movement from the south through the existing grassland on the site. Creek and drainage corridors are used more often by wildlife to provide migration paths, shelter, and foraging habitat, than open grasslands. Under this alternative, while upland areas would be developed, the streams and swales would continue to provide for a wildlife movement corridor through the property. Habitat that is of value for wildlife movement would be preserved resulting in an effect that would be **less than significant**.

In the long term, because the area to the east of the project site is already developed, the area to the north of the project site is already approved for development, and the area to the south is planned for development, these open space areas are unlikely to serve as wildlife movement corridors. Also given the pattern of existing and planned urban development in the area, maintenance of wildlife movement through the project site would not be meaningful. Therefore, although wildlife movement through the majority of the project site would no longer be available, the effect of the No Action Alternative on wildlife movement would be **less than significant**. No mitigation is required.

**Proposed
Action**

Similar to the No Action Alternative, the site plan for the Proposed Action designates substantial acreage of land adjacent to the intermittent creeks in the northwestern portion of the site as open space and therefore wildlife movement along the creek corridors is not expected to be affected. The open space area along the intermittent creeks would not be developed with roads or bridges and therefore there would not be a potential for obstructing wildlife movement within this area. The project site open space would adjoin the open space area of the Westpark development and would provide an east-west movement corridor in the broader project area.

As with the No Action Alternative, the development of the mixed-use community in the remainder of the site would have the potential to obstruct wildlife movement. As described above, in the short term the Proposed Action would obstruct wildlife movement from the area to the south through the project site to the north, but the riparian corridor in the northwestern corner is more likely to be used by wildlife than the open grassland. Therefore, the more valuable habitat to wildlife movement would be preserved and the effect would be **less than significant**.

In the long term, as explained above, because the area to the north of the project site is already approved for development, and the area to the south is also planned for development, and the area to the east of the site is already developed, maintenance of wildlife movement through the project site would not be meaningful. Therefore, the effect of the Proposed Action on wildlife movement would be **less than significant**. No mitigation is required.

**Alts. 1
through 5**

Alternatives 1 through 5 would also incorporate corridors for wildlife movement in the northwestern portion of the project site and would maintain the intermittent creek corridors. Alternatives 1 and 2 involve the same reduced footprint of development and in addition to the open space area in the northwest these alternatives would maintain large areas in the central portions of the site as open space. These substantial open space areas would be effective wildlife corridors. However, because in the long term, these areas would not connect to any designated open space to the north or south and would be also fragmented by a number of on-site roadways, they would not be effective wildlife movement corridors. Similarly, although Alternative 3 (Central Preserve Alternative) would provide a substantial swath of contiguous open space that would extend from the project site's southern boundary to the northwestern boundary, this open space area would not connect to any designated open space area to the south and within the project site, this open space area would be fragmented by on-site roads. Similarly, Alternatives 4 and 5 (One Acre and Half Acre Fill Alternatives) would provide additional open space areas on the project site but these areas would not connect to designated open space to the north or south and would be also fragmented by a number of on-site roadways, they would not be effective wildlife movement corridors. Therefore all of the alternatives would essentially provide an effective wildlife movement area only in the northwestern portion of the site, and would be generally similar to the No Action Alternative and the Proposed Action with respect to the remainder of the site. For reasons presented above, the effect of all of the

alternatives on wildlife movement in the short term and in the long term would be **less than significant**.

Off-Site Alt. The Off-Site Alternative site plan designates substantial acreage of land adjacent to the intermittent creek in the southeastern portion of the site as open space and therefore wildlife movement along the creek corridor is not expected to be affected under this alternative. The open space area along the intermittent creek would not be developed with roads or bridges and therefore there would not be a potential for obstructing wildlife movement within this area. The development of the mixed-use community in the remainder of the site would have the potential to obstruct wildlife movement. However, because the corridor along the intermittent creek would be preserved and the lands to the east and south are either developed or planned for development, the development of the alternative site would not substantially affect wildlife movement.

The installation of the off-site infrastructure corridor could temporarily block movement during construction but no permanent obstruction would occur over the long term as the utility lines would be placed underground. In addition, the portion of the off-site infrastructure corridor that passes along Pleasant Grove Creek would be located on the edge of the creek corridor and thus would not have the potential to block movement along the main portion of the creek corridor.

For the reasons listed above, the Off-Site Alternative and its associated off-site infrastructure would not substantially affect wildlife movement, and this impact is **less than significant**. No mitigation is required.

Impact BIO-10 Loss of Riparian Habitat

No Action Alt. The No Action Alternative would not result in any direct removal of riparian habitat as no riparian habitat is present on the site and no activities that would affect waters of the U.S. would occur under this alternative. **No direct or indirect** effects would occur.

Proposed Action, Alts. 1 through 5 Under the Proposed Action and Alternatives 1 through 5, there would be no effects on riparian habitat as no riparian areas are present on the project site, including the intermittent streams in the northwestern portion of the site. Therefore, **no direct or indirect** effects on riparian habitat would occur.

Off-Site Alt. Riparian habitat occurs only along the intermittent creek in the southeastern portion of the alternative site. This area will be designated open space and no bridges or culverts would be constructed in this portion of the alternative site. Furthermore, the open space area along the intermittent creek would be in the southeastern corner of the alternative site, at a distance from the areas that would be developed with urban uses and therefore the potential for human intrusion in this area would be low. The off-site infrastructure corridor would cross Pleasant Grove Creek in the vicinity of the Pleasant Grove Wastewater Treatment Plant and thus would have the potential to affect riparian habitat if it exists along this section of the corridor. Therefore, the **direct** effect of this alternative

on riparian habitat would be **significant**. **Mitigation Measure BIO-10** would be implemented to reduce this effect to a **less than significant** level. Although the USACE cannot enforce the measure, Section 1602 of the California Fish and Game Code is required by law. Therefore, there is reasonable certainty that it will be implemented. **No indirect** effect would occur.

**Mitigation Measure BIO-10: Mitigation for Riparian Habitat Impact
(Applicability – Off-Site Alternative)**

In compliance with Section 1602 of the Fish and Game Code, the Applicant will enter into a Streambed Alteration Agreement which will require that any riparian habitat disturbed during construction of the sewer line will be restored and revegetated.

Impact BIO-11 Effects on On-Site Fish Species

No Action Alt., Proposed Action, Alts. 1 through 5 The intermittent streams in the northwestern portion of the project site are relatively small drainages which are shallow and do not contain sufficient depths of water to support fish for most of the year. The streams historically have been dry during the summer months. Anadromous fish species, such as Central Valley spring and winter-run Chinook salmon and steelhead, do not occur within the streams. Therefore, **direct** and **indirect** impacts on fish species would be **less than significant**. No mitigation is required.

Off-Site Alt. The intermittent stream along the eastern boundary of the alternative site is expected to support only resident warm-water fish species during the wet season. No anadromous fish species occur within the stream. There would be no impacts to the resident fish species in the intermittent stream because the intermittent stream is located within an open space preserve on the alternative site and no project-related activities would occur in this area. While anadromous fish species occur with Pleasant Grove Creek, the segment of the off-site infrastructure corridor that passes along Pleasant Grove Creek would be located on the edge of the creek corridor and thus would not affect fish species. Therefore, **direct** and **indirect** impacts on fish species would be **less than significant**. No mitigation is required.

Impact BIO-12 Effects on Fish Habitat from Water Diversions

No Action Alt., Proposed Action, Alts. 1 through 5 As described in **Section 3.15, Utilities and Service Systems**, water demands from the No Action Alternative, in addition to City buildout demands, would result in the total surface water supply need of approximately 63,455 acre-feet per year (afy) (7,827 hectare-meter per year [hmy]) in 2025. This amount would be offset by the projected use of recycled water in the City, so the net demand for water in 2025 would be 58,993 afy (7,265 hmy). The Proposed Action and Alternative 1 through 5, in addition to City buildout demands, would demand a volume of surface water ranging

from 63,345 afy (7,814 hmy) to 63,629 afy (7,849 hmy) in 2025. The difference in water demand between the Proposed Action and Alternative 1 through 5, as compared to the No Action Alternative is not significant. In addition, the Proposed Action has the largest water demand, which has already been approved by the City of Roseville, as explained in **Section 3.15, Utilities and Service Systems**. Therefore, the smaller water demand from the other on-site alternatives would be fully met by the City's water supply.

The diversion of 58,900 afy (7,265 hmy) from the American River could result in effects on fisheries resources and aquatic habitat by changing the existing hydrologic conditions. The environmental effects from this diversion were analyzed under the Water Forum Proposal EIR certified in 1999. Because the Water Forum Proposal (WFP) EIR is more than 10 years old, the City of Roseville conducted an additional analysis to confirm or update the American River and Delta related impacts that would result from the City of Roseville diverting 58,900 afy (7,265 hmy) from the American River. The new analysis (referred to as Technical Memorandum prepared by RBI and HDR in 2009) is based on current regional water supply issues and conditions that have changed since publication of the WFP EIR in 1999. As documented in this study, these changed conditions include Central Valley Project operational changes implemented since the publication of the WFP EIR as well as other reasonably foreseeable actions that may impact Central Valley Project/State Water Project operations (RBI and HDR 2009). The Proposed Action's water supply need is part of the City of Roseville's overall American River water supply previously assessed under the WFP EIR. The Technical Memorandum is included in **Appendix 3.4**.

In all cases, the Technical Memorandum confirmed that the analysis and conclusions in the WFP EIR are still valid under the changed conditions and that no new or substantially more severe significant impacts to fisheries would occur. The mitigation measures identified in the WFP EIR for these impacts are still valid. The mitigation requires the implementation of the Lower American River Habitat Management Element, which includes measures for dry year flow augmentation, control of flow fluctuations at Folsom and Nimbus Dams, restoration of wetland/slough complexes, selective incorporation of instream woody debris, and improvements to Chinook salmon spawning habitat. These measures are further discussed below. A summary of the impacts and mitigation measures in the WFP EIR are also included in **Appendix 3.4**.

In general, the WFP EIR concluded that increased surface water diversions could result in impacts to water quality by lowering reservoir storage and river flows. Lower volumes of water in both Folsom Reservoir and the Lower American and Sacramento rivers would provide less dilution for existing levels of nutrient, pathogen, total dissolved solids, total organic carbon, and priority pollutant loadings. Similarly, reduced Delta inflows could affect various Delta water quality parameters. The effects on fisheries resources and aquatic habitat from the diversions are summarized below.

Folsom Reservoir and Lake Natoma

As analyzed in the WFP EIR and the Technical Memorandum, the changes in storage levels anticipated in the Folsom Reservoir would not adversely affect the habitat quality, quantity or prey availability for cold-water species. The impact to cold-water species would be less than significant and no mitigation would be required (WFP EIR Impact 4.5-1). Folsom Reservoir under the WFP would frequently reduce reservoir storage (and thus water levels) during the critical spawning and rearing period (i.e., March through September), which could reduce the availability of littoral (nearshore) habitat containing vegetation. Reduced littoral habitat availability would be a potentially significant impact to Folsom Reservoir warm-water fisheries because it could result in increased predation on young warm-water fishes (WFP Impact 4.5-2). Implementation of the adopted mitigation measure, which would require plantings and related activities to encourage existing willow and terrestrial vegetative communities to become established at lower reservoir elevations, and provide artificial habitat structures to compensate for loss of littoral habitat, would enhance spawning and rearing conditions for warm-water fish.

The WFP EIR found the impacts to cold-water and warm-water fish populations in Lake Natoma to be less than significant because changes to the lake parameters would be minor (WFP EIR Impact 4.5-3). The impacts to operations and fish production of the Nimbus Fish Hatchery were also determined to be less than significant (WFP EIR Impact 4.5-4).

Lower American River

The WFP EIR presented flow- and temperature-related impacts separately by species and life stage.

The WFP EIR found the impacts to fall-run Chinook salmon to be potentially significant, primarily as a result of frequent reductions in lower American River (LAR) flows during October through December (WFP EIR Impact 4.5-5). Mitigation included dry year flow augmentation, restoration, and maintenance of the wetland/slough complex, instream cover, and habitat management.

The WFP EIR found that the combination of temperature and flow changes under the Water Forum Agreement would not be expected to adversely affect the long-term population trends of steelhead in the Lower American River. This would be a less than significant impact (WFP EIR Impact 4.5-6). The WFP EIR found flow-related impacts to splittail to be potentially significant as a result of reductions in inundated riparian spawning habitat in the LAR during the February through May period (WFP EIR Impact 4.5-7). Mitigation included flow fluctuation criteria and habitat management. The WFP EIR found the impacts to shad and striped bass to be less than significant (WFP EIR Impacts 4.5-8 and 4.5-9).

Other CVP Reservoir Storage

The WFP EIR found the impacts to cold-water and warm-water fisheries in Shasta

Reservoir (WFP EIR Impacts 4.5-10 and 4.5-11), Trinity Reservoir (WFP EIR Impacts 4.5-12 and 4.5-13), and Keswick Reservoir (WFP EIR Impact 4.5-14) to be less than significant.

Sacramento River

The WFP EIR found the flow-related impacts to fisheries resources in the upper and lower Sacramento River to be less than significant (WFP EIR Impact 4.5-15) and the temperature-related impacts to fish resources in the lower Sacramento River to be less than significant (WFP EIR Impact 4.5-16).

Delta

The WFP EIR found the impacts to Delta fish resources to be less than significant (WFP EIR Impact 4.5-17).

As explained in the Technical Memorandum, all of the mitigation measures identified in the WFP EIR are still valid and no new or more significant impacts would occur as a result of changes since the WFP EIR was published.

The USACE independently evaluated the information provided in these previous analyses and also concluded that the diversion of surface water up to the amount of the City's current Water Forum Agreement wet year water supply entitlement of 58,900 afy (7,265 hmy), from the American River and Folsom Reservoir to serve the water supply needs of the No Action Alternative, Proposed Action, or Alternatives 1 through 5, in conjunction with other development in the service area of the City of Roseville will result in effects on fisheries that are **less than significant** or would be reduced to **less than significant** with previously identified mitigation measures. No additional mitigation is required.

Off-Site Alt.

As described in **Section 3.15, Utilities and Service Systems**, the Off-Site Alternative would be served by the Placer County Water Agency (PCWA) and would demand 966 afy (119 hmy) of water. The PCWA projects that 262,838 afy (32,421 hmy) of water supplies will be available to western Placer County in 2035. Total cumulative water demand in 2035 for western Placer County (Zones 1 and 5) served by the PCWA, including the water needed to serve the Off-Site Alternative, is estimated at 215,921 afy (26,633 hmy). As the data shows, there would be adequate supply to serve the cumulative demand, including the demand associated with the Off-Site Alternative. Development of the Off-Site Alternative, along with other foreseeable future development within Placer County, including current demands on PCWA contracted water, would not exceed the PCWA's existing currently contracted surface water supplies and additional diversion of water from surface sources would not be required. Furthermore, the PCWA conducted an evaluation of potential effects to riverine fisheries from the diversion of surface waters in the American River Pump Station EIS/EIR (PCWA 2002). That evaluation shows that all impacts on fish species in the lower American River and the Sacramento River would be less than significant. In summary, all effects would be **less than significant** and no mitigation is required.

3.4.6 RESIDUAL SIGNIFICANT IMPACTS

All of the impacts on biological resources would either be less than significant or would be reduced to less than significant with mitigation.

3.4.7 CUMULATIVE IMPACTS

The analysis presented above addresses the Proposed Action's impacts on wetlands, other sensitive natural communities, special-status plant and wildlife species, and wildlife corridors. The Proposed Action would result in the filling of waters of the U.S. and direct and indirect effects on vernal pool crustacean habitat. Given past and reasonably foreseeable losses of wetlands and vernal pool invertebrate habitat in the region, the effects of the Proposed Action would have the potential to cumulate with other losses in the region. In addition, the Proposed Action would affect wildlife movement by fragmenting open space habitat. The obstruction of wildlife habitat throughout the region could also result in cumulative effects on wildlife. Additionally, the Proposed Action would remove grassland habitat which is used for foraging by protected raptors and other birds, including Swainson's hawk.

Other biological resource impacts of the Proposed Action would not have the potential to cumulate and result in substantial adverse cumulative impacts. For instance, impacts to western spadefoot toad would be limited to potential construction-phase losses that would be minimized by **Mitigation Measure BIO-6**. Similarly, due to absence of suitable habitat, minimal impacts on protected raptor species and nesting birds are anticipated which would be further minimized by the implementation of **Mitigation Measure BIO-7**. The Proposed Action would not have the potential to affect the California red-legged frog, California tiger salamander, giant garter snake, Valley Elderberry longhorn beetle, special-status bats, or fish species. As these impacts would not have the potential to cumulate, they are not analyzed below.

3.4.7.1 Current Status of the Resource

As vernal pools, seasonal wetlands and associated grasslands are the primary habitats on the project site that would be affected by the Proposed Action and alternatives, the current status of the resources in the cumulative study area as well as in the wider Central Valley region is described below to provide the context for the evaluation of cumulative impacts, especially to vernal pool invertebrates and their habitat. For the definition of the cumulative study area, please see **Subsection 3.0.3**.

Central Valley Vernal Pools

The Central Valley of California encompasses an area of more than 13 million acres (5 million hectares). According to Holland, the Central Valley encompassed up to 7 million acres (3 million hectares) of vernal pool landscapes⁵ in the early 1800s (Holland 2009). However, according to a study by Frayer, the seasonal wetlands of the Central Valley totaled about 4 million acres (2 million hectares) in the 1850s (Frayer et al.

⁵ Vernal pool landscapes refer to vernal pool wetlands and the surrounding grassland matrix within which vernal pools typically occur.

1989). Through the 1800s, these landscapes were destroyed or fragmented by conversion to agriculture, mineral extraction, and water conveyance and storage projects. Between the 1930s and 1970s, agricultural conversion and urbanization of the landscape further reduced the habitat (Fraye et al. 1989).

Based on aerial photographs of the Central Valley taken over a period from 1976 to 1995, with most taken between 1982 and 1992, Holland noted that only 995,000 acres (403,000 hectares) of vernal pool landscape was left in the Central Valley in 1997. This represents an 87 percent reduction in the original landscape acreage (Holland 2009).

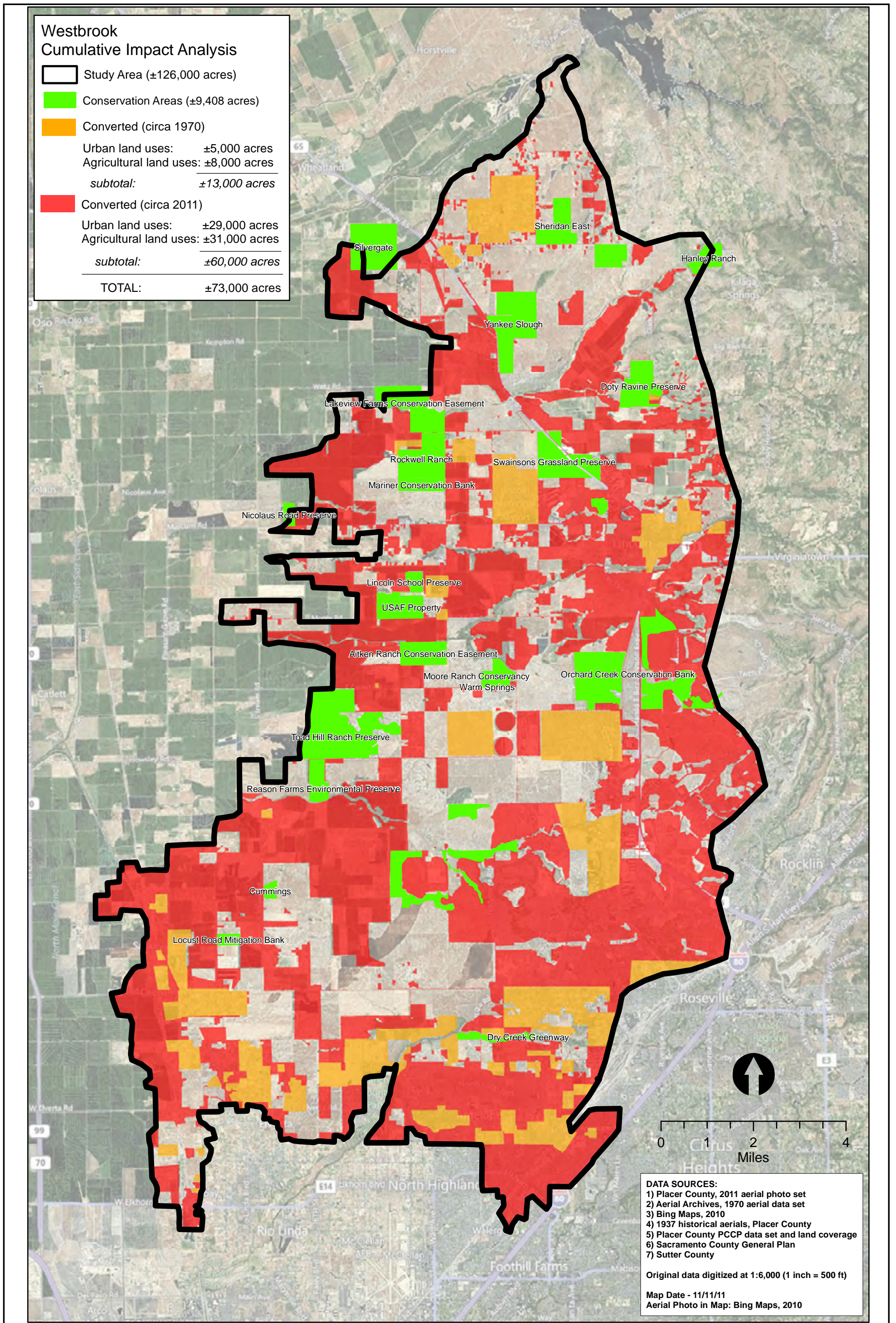
According to the USFWS, from 1992 to 1998, 125,591 acres (50,824 hectares) of grazing land were converted to other agricultural uses in the Central Valley (USFWS 2005). It is likely that much of this land supported vernal pools.

Conversion of vernal pool landscape to intensive agricultural uses continues to contribute to the decline of vernal pools. In recent years, the habitats have also been destroyed as a result of urban development, including residential, commercial, and industrial projects, and infrastructure associated with urbanization (USFWS 2005). As of 2005, the vernal pool landscape in the Central Valley was reduced further to 896,000 acres (363,000 hectares) (Holland 2009). The amount of loss over this period of time was not distributed evenly across Central Valley. For example, Merced County lost 6,100 acres (2,500 hectares) between 1986 and 1997, and an additional 18,000 acres (7,300 hectares) of habitat between 1997 and 2005. Placer County lost 10,440 acres (4,225 hectares) between 1994 and 1997, and an additional 6,600 acres (2,670 hectares) of vernal pool landscape between 1997 and 2005. On the other hand, Mariposa County did not have any vernal pool landscape losses in this timeframe (Holland 2009).

According to Holland, the majority (81 percent) of vernal pool grasslands were lost because of conversion of range land to agricultural land, which is typically outside of the normal regulatory processes that apply to other land use conversions (urban, commercial, infrastructure, and industrial) under both federal and state laws. Therefore, the vernal pool grassland losses associated with converting grazing land to agricultural land are mostly unmitigated (AECOM 2009). Little to no vernal pool landscape has been created or preserved to compensate for these losses due to agricultural conversions (Holland 2009).

Study Area Vernal Pool Habitat and Wetlands

As noted earlier, according to Holland, Placer County lost 10,440 acres (4,224 hectares) between 1994 and 1997 and an additional 6,600 acres (2,670 hectares) of vernal pool landscape between 1997 and 2005 (Holland 2009). The change in vernal pool grassland habitat within the study area is shown on **Figure 3.4-11, Converted Vernal Pool Grassland in Cumulative Study Area Circa 2011**. The graphic shows the vernal pool grassland areas that had been converted by 1970, with about 8,000 acres (3,000 hectares) (62 percent) converted by agricultural uses and about 5,000 acres (2,000 hectares) (38 percent) due to urban development. The graphic also shows vernal pool grassland areas that were converted between 1970 and 2011, with about 31,000 acres (13,000 hectares) due to agricultural conversions and about 29,000 acres (12,000 hectares) due to urban development. During this timeframe, approximately 9,400 acres (3,800 hectares) of vernal pool grassland within the study area was placed in preserves or conservation areas.



SOURCE: Salix Consulting – 2011

FIGURE 3.4-11

Converted Vernal Pool Grassland in Cumulative Study Area Circa 2011

Between approximately 1990 and 2010, 252 projects were permitted by the USACE in the study area. Of these permitted projects, 230 permits contained complete data regarding wetland impacts and mitigation that the USACE used to estimate the magnitude of impact to the waters of the U.S. within the study area (see **Appendix 3.4** which presents details of the permits that were reviewed to develop the data reported below). The 230 permits included 27 standard permits, 190 nationwide permits, one regional general permit, and eight letters of permission. **Table 3.4-21, Waters of the U.S. Impacts and Mitigation (in Acres) based on Recent Permits Issued by the USACE in the Cumulative Study Area**, below, presents the acres of waters filled as a result of development authorized by these permits, as well as the mitigation required by the permits to compensate for the filling of wetlands and other waters. The permits authorized the fill of about 438.93 acres (177.63 hectares). This included approximately 148 acres (60 hectares) (44 percent of total) of vernal pools and 291 acres (118 hectares) (66 percent) of other waters of the U.S. The projects authorized by the permits provided various forms of mitigation, which included on-site preservation, creation, and restoration, payment towards the National Fish and Wildlife Fund, purchase of mitigation credits in study area mitigation banks, and purchase of mitigation credits in mitigation banks outside the study area. As **Table 3.4-21** shows, a total of about 1,254 acres (507 hectares) of mitigation were required under the permits issued. In general, the USACE required mitigation, which includes creation, restoration/enhancement as well as preservation, for vernal pool losses at an average rate of 3.15 acres (1.27 hectares) for every acre filled whereas losses of other waters of the U.S. were compensated at an average rate of about 2.71 acres (1.1 hectares) for every acre filled. However, if the approved fill is compared only to mitigation provided in the form of creation, restoration or enhancement of wetlands, vernal pool losses in the study area were compensated at an average rate of 1.41 acres (0.57 hectare) for every acre filled and losses of other waters of the U.S. were compensated at an average rate of about 1.46 acres (0.59 hectare) for every acre filled.

Of the 1,254 acres (507 hectares) of required compensatory mitigation, 1,163 acres (471 hectares) or 93 percent was required to be located within the study area, with the remaining 91 acres (37 hectares) or 7 percent located outside of the study area. The compensatory mitigation located within the study area has created 604 acres (224 hectares) and preserved 545 acres (221 hectares) of waters of the U.S.

It is noted that the numbers reported above are based on a review of permits issued by the USACE. These do not take into account the rates of success or failure of wetlands mitigation.⁶

⁶ In a study of Section 401 permit files and permit-related mitigation projects throughout the state of California, the State Water Resources Control Board (SWRCB) found that of the 143 permits that were evaluated, the Board authorized approximately 217 acres (87.8 hectares) of impacts (including temporary impacts) and required that 445 acres (180.1 hectares) of mitigation be provided. The analyses showed that 417 acres (168.8 hectares) of actual mitigation acreage was obtained, resulting in an overall mitigation ratio of 1.9:1. When considering permanent impacts (true losses) to creation and restoration mitigation (true gains), the results showed that “no net loss” of acreage was being achieved overall although in the case of about 39 percent of individual files, net acreage losses were identified. The study suggested that permittees were, for the most part, meeting their mitigation obligations, but the ecological condition of the resulting mitigation projects was not optimal and that a net loss of wetland function did occur for the wetlands included in this study (SWRCB 2007).

Table 3.4-21
Waters of the U.S. Impacts and Mitigation (in Acres)
based on Recent Permits Issued by the USACE in the Cumulative Study Area

Wetland Type	Total Impact	Total Mitigation	On-Site Mitigation			Mitigation Banks within Study Area		Mitigation Banks Outside of Study Area ^a	
			Creation	Restored/Enhanced	Preserved	Creation	Preservation	Creation	Preservation
Vernal Pools	147.55 ^b	465.24	71.33	0	76.41	121.05	132.09	16.35	48.01
Other Waters of U.S.	291.38 ^c	788.69	180.30	13.95 ^d	296.36	231.68	39.95	26.45	0
Total	438.93	1,253.93	251.63	13.95	372.77	352.73	172.04	42.8	48.01
Total Delineated	1,099.51								

Note:

^a Includes mitigation sites that are in unknown locations

^b Total impact does not include 0.87 acre of temporary impact to vernal pools.

^c Total impact does not include 13.79 acres of temporary impact to other waters of the U.S.

^d Includes 11.9 acres of restored and 2.05 acres of enhanced wetlands

Other Present and Reasonably Foreseeable Future Actions and Projects

Based on the permit applications that are on file with the USACE and information on the development projects that have received approval from the local jurisdictions, the projects listed in **Table 3.4-22, Present and Reasonably Foreseeable Actions in the Study Area**, are considered present and reasonably foreseeable future actions and projects within the cumulative study area for biological resources.

**Table 3.4-22
Present and Reasonably Foreseeable Actions in the Study Area**

Project	Total Vernal Pools and Other Waters of the U.S. * (acres)	Estimated Impacts** (acres)
Fiddymment Road Widening ^a	0.44	0.44
Amoruso Specific Plan	38.63	ND
Creekview Specific Plan ^b	33.83	14.17
Regional University Specific Plan ^c	85.28	18.00
Placer Vineyards Specific Plan ^d	177.00	119.00
Riolo Vineyards Specific Plan ^e	12.58	1.17
Placer Parkway Alternative 5 ^f	152.00	ND
Reason Farms Retentions ^g	71.44	0.75
Sierra Vista Specific Plan ^h	36.07	24.81
Elverta Specific Plan ⁱ	36.40	~36.40
Lincoln 270 ^j	30.37	10.56
Sutter Pointe Specific Plan ^k	70.00	ND
Village 7 Specific Plan ^l	30.63	6.87
TOTAL	736.04	~225.3

Note: ND – not determined

^a Department of the Army Permit SPK-2010-00735. August 5, 2011. (note: these impacts are permitted for fill)

^b Granite Bay Development II, LLC. 30 November 2010. Biological Resources Assessment for the 560-Acre Creekview Specific Plan. Prepared by North Fork Associates.

^c Placer County. December 2007. Draft EIR Regional University Specific Plan. Prepared by PBS&J.

^d ECORP Consulting, 2012.

^e Placer County. January 2008. Draft EIR Riolo Vineyards Specific Plan. Prepared by URS.

^f Placer County. June 2007. Draft EIR Placer Parkway. Prepared by URS. (note: Alternative 5 was determined to be the preferred alternative)

^g City of Roseville. 16 October 2002. Draft EIR for the City of Roseville Retention Basin Project. Prepared by URS.

^h Gibson and Skordal. 2012. Memorandum. May 18.

ⁱ Sacramento County. 2007. Elverta Specific Plan Final EIR.

^j Department of Army Permit for Lincoln 270.

^k Measure M Group. 10 September 2007. Wetland Delineation for Sutter Pointe Specific Plan. Prepared by ECORP.

^l City of Lincoln. June 2009. Draft EIR Village 7 Specific Plan Project. Prepared by PBS&J.

* Jurisdictional waters of the U.S.

** On-Site impacts, not yet approved by the USACE

Placer County's population is expected to increase by 270,837 people from 2005 to reach a total of 570,709 by 2035 (SACOG 2008) and increase by 484,000 people from 2007 to reach a total of 811,000 by 2060 (Hausrath Economics Group 2008). Most of this growth is expected to occur in the cities and unincorporated areas of western Placer County. The majority of the population and employment growth requires land for urban/suburban residential, commercial, office and industrial uses, and associated infrastructure and public support facilities (e.g., wastewater treatment plants, libraries, landfills, etc.). Based on plans and proposals for development in the cities and the unincorporated areas and on planning level assumptions about development density, an estimated 68,000 acres (28,000 hectares) of land conversion would accommodate this growth, of which 57,000 acres (23,000 hectares) would be in unincorporated Placer County and Lincoln. The remainder would be in the cities of Auburn, Loomis, Rocklin, and Roseville (TRA Environmental Sciences 2011). According to the draft Placer County Conservation Plan (PCCP), the far western portions of Placer County are expected to be preserved.

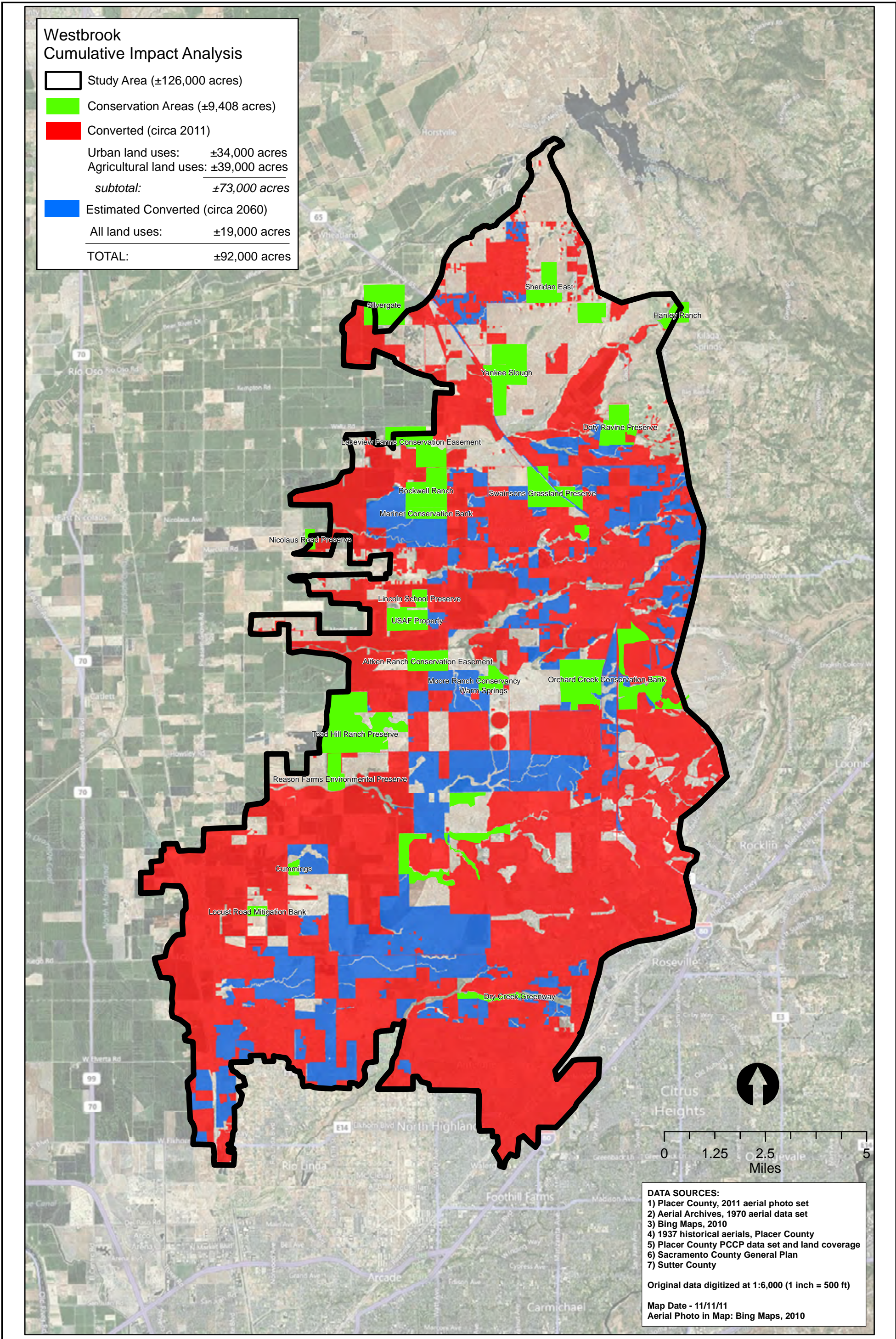
As explained above, the Sacramento County 2030 General Plan identifies some growth areas to the south of the Placer County southern boundary, within the study area. The area identified for growth is designated for low-density residential uses. The remaining areas within the Sacramento County portion of the study area are designated for agricultural uses, so would not likely be developed.

The study area also includes a portion of Sutter County. With respect to the Sutter County portion of the study area, the County General Plan designates most of the area for agricultural and open space uses and a portion of it for development of a new town under the Sutter Pointe Specific Plan.

Figure 3.4-12, Converted Vernal Pool Grassland in Cumulative Study Area Circa 2060, shows the additional areas of vernal pool grassland habitat within the study area that are anticipated to be converted between 2010 and 2060 based on the projected growth in the area as reported in the draft PCCP, the relevant general plans, and other information. As shown in this figure, approximately 19,000 acres (7,700 hectares) of additional potential habitat would be converted if the projected growth occurs in the study area.

Cumulative Impact BIO-1 Loss of Aquatic Resources

No Action As discussed above, agricultural practices and conversions, urban development, and
Alt. infrastructure development have resulted in a cumulative loss of aquatic resources, including vernal pools, in the study area. Future growth is anticipated to further add to this cumulative impact. The No Action Alternative would not result in filling of any aquatic resources on the project site because filling of the waters of the U.S. would be avoided by design. Therefore, this alternative would not contribute to the cumulative impact. The alternative's impact would be **less than significant**, and no mitigation is required.



**Westbrook
Cumulative Impact Analysis**

	Study Area (±126,000 acres)
	Conservation Areas (±9,408 acres)
	Converted (circa 2011)
	Urban land uses: ±34,000 acres
	Agricultural land uses: ±39,000 acres
	<i>subtotal:</i> ±73,000 acres
	Estimated Converted (circa 2060)
	All land uses: ±19,000 acres
	TOTAL: ±92,000 acres

DATA SOURCES:
 1) Placer County, 2011 aerial photo set
 2) Aerial Archives, 1970 aerial data set
 3) Bing Maps, 2010
 4) 1937 historical aerials, Placer County
 5) Placer County PCCP data set and land coverage
 6) Sacramento County General Plan
 7) Sutter County

Original data digitized at 1:6,000 (1 inch = 500 ft)

Map Date - 11/11/11
 Aerial Photo in Map: Bing Maps, 2010

SOURCE: Salix Consulting – 2011

FIGURE 3.4-12

Converted Vernal Pool Grassland in Cumulative Study Area Circa 2060

**Proposed
Action**

Agricultural practices and conversions, urban development, and infrastructure development have resulted in a cumulative loss of wetlands, including vernal pools, in the study area. Future growth is anticipated to further add to this cumulative impact and the Proposed Action would make a small contribution to this impact by filling about 9.61 acres of vernal pools and other waters of the U.S. Compliance with the USACE's regulatory requirements will further reduce the Proposed Action's contribution to the cumulative impact to less than significant.

As noted earlier, conversion of grasslands with embedded vernal pools to intensive agricultural uses has contributed to the decline of vernal pools and other aquatic resources in the study area. The total amount of wetland fill that has occurred in the study area is not available because data on acreages filled by ongoing agricultural activities are not available. However, data on fills permitted by the USACE are available and as noted above, based on DA permits issued by the USACE between 1990 and 2010, the USACE authorized the filling of about 438.93 acres (177.63 hectares) of aquatic resources in the study area. This included approximately 148 acres (60 hectares) (44 percent of the total acreage filled in the study area) of vernal pools and 291 acres (118 hectares) (66 percent) of other waters of the U.S. As noted above, the projects authorized by the permits provided various forms of mitigation. Of the 1,254 acres (507 hectares) of required compensatory mitigation, 1,163 acres (471 hectares) or 93 percent was required to be located within the study area, with the remaining 91 acres (37 hectares) or 7 percent located outside of the study area. The compensatory mitigation located within the study area has offset the loss of about 439 acres of aquatic resources by creating 604 acres (224 hectares) and preserving 545 acres (221 hectares) of waters of the U.S.

Future growth in the study area is anticipated to result in additional filling of aquatic resources. As shown in **Table 3.4-22**, foreseeable projects subject to the USACE regulatory program, if approved as proposed, could potentially result in the filling of approximately 225 acres (91 hectares) of waters of the U.S. The Proposed Action would also contribute to the cumulative loss in the study area by filling approximately 9.61 acres (3.89 hectares) of waters of the U.S., including vernal pools, seasonal wetlands and seasonal wetland swales, as shown in **Table 3.4-23, Impacts to Waters of the U.S.**

Table 3.4-23
Impacts to the Waters of the U.S. (Acres)

Alternative	Total Impacts¹
No Action Alternative	0.00
Proposed Project	9.61
Alternatives 1 and 2	3.10
Alternative 3	5.05
Alternative 4	0.94
Alternative 5	0.47
Off-Site Alternative	11.9

Source: Gibson & Skordal 2012a and 2012c; Salix Consulting 2012

¹ *This includes on- and off-site impacts*

All new urban and infrastructure development projects that would result in impacts to the waters of the U.S. would be subject to the regulatory and permitting requirements of the USACE, the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and the Regional Water Quality Control Board. In compliance with the no net loss policy of the federal government, these projects would be required to demonstrate that after avoidance and minimization, any compensatory mitigation put forth by the project proponents for loss of wetland habitats would result in no net loss of wetland functions and values and that adverse impacts to special-status species that might be affected by filling of wetland habitat are avoided, minimized or mitigated. As noted earlier, the USACE's compensatory mitigation program requires mitigation in kind and in amounts (ratios) that take into account temporal loss as well as risk of failure. Therefore, if a proposed project, after avoidance and minimization, provides mitigation that meets the USACE's requirements for compensatory mitigation, it is presumed that such a project would not result in a net loss of wetlands and would not make a substantial contribution to a cumulative impact on wetlands. Because all development projects, including the Proposed Action, are required by law to comply with the no net loss policy and provide compensatory mitigation that meets USACE requirements, the projects are generally not expected to result in a significant cumulative loss of wetlands and other waters of the U.S. in the study area.

However, the USACE has not received DA permit applications as yet for some of the reasonably foreseeable development and infrastructure projects in the study area, and in some instances where it has received DA permit applications, it has not yet received detailed mitigation plans and therefore cannot determine whether or not the reasonably foreseeable development and infrastructure projects will adequately mitigate all losses of wetlands. Therefore conservatively, the USACE concludes that there could be a

significant cumulative impact on wetlands in the study area.

The Proposed Action would result in the filling of a small acreage of aquatic resources, and in order to comply with the regulatory requirements, as described under **Impact BIO-1**, the Applicant has put forth a conceptual mitigation plan that provides for preservation of 2.98 acres (1.21 hectares) of wetlands and other waters of the U.S. and creation/restoration of 3.88 acres (1.57 hectares) of wetlands on the project site. In addition, the Applicant has proposed to construct or secure creation/restoration credits for 2.40 acres (0.97 hectare) of constructed vernal pools and for 7.00 acres (2.83 hectares) of constructed seasonal wetland creation credits from an approved mitigation bank in western Placer County within the bank's approved service area. (The mitigation plan also includes securing 5.94 acres (2.40 hectares) of vernal pool preservation credits.) Based on the Applicant's proposed mitigation, the vernal pool compensatory mitigation ratio, excluding preservation, for the Proposed Action would be 2.75:1 and for other waters of the U.S., the mitigation ratio would be 1.24:1. Including preservation, the ratios would be 10.7:1 for vernal pools and 1.5:1 for other waters of the U.S. Furthermore, the Applicant would be required to implement **Mitigation Measure BIO-1a** to ensure that the project's impact on aquatic resources remains less than significant and to ensure no net loss. Therefore, the contribution of the Proposed Action to the cumulative effect on aquatic resources would be **less than significant**.

Alts. 1 through 5

Although the acreage of wetlands filled under each alternative varies, as shown in **Table 3.4-23**, Alternatives 1 through 5 would result in a smaller loss of wetlands and vernal pools than the Proposed Action. Therefore, the alternatives would make a smaller contribution to the cumulative impact on aquatic resources in the study area. As with the Proposed Action, development under any of the alternatives would be required to comply with the federal and State regulatory programs for the protection of the waters of the U.S. and would implement **Mitigation Measure BIO-1a** to provide compensatory mitigation at ratios acceptable to the USACE. Therefore, the contribution of any of the alternatives to any cumulative effect on aquatic resources would be **less than significant**.

Off-Site Alt.

The Off-Site Alternative would result in the filling of about 11.9 acres (4.8 hectares) of vernal pools and other waters of the U.S., as shown in **Table 3.4-23**, and would thereby make a greater contribution to the cumulative impact on the waters of the U.S. As with the Proposed Action, development under this alternative would be required to comply with the federal and State regulatory programs for the protection of wetlands and would implement **Mitigation Measure BIO-1a** to provide compensatory mitigation at ratios acceptable to the USACE for impacts to the waters of the U.S. Therefore, the contribution of the alternative to the cumulative effect on aquatic resources would be **less than significant**.

Cumulative Impact BIO-2 Loss of Vernal Pool Grassland Habitat

No Action Alt. As described above, substantial amount of vernal pool grassland habitat in the study area has already been removed in conjunction with past agricultural practices, urban development, and infrastructure projects. As of 2011, approximately 73,000 acres (30,000 hectares) of potential vernal pool grassland habitat in the study area had been converted although about 9,400 acres (3,800 hectares) of this habitat was put in preserves within the study area between 1970 and 2011. Based on growth projected for the City of Lincoln and unincorporated western Placer County over the next 50 years, urban and rural development and major infrastructure projects are expected to result in the elimination, loss, or modification of approximately 12,000 acres (4,900 hectares) of vernal pool habitat (TRA Environmental Sciences 2011). In addition, reasonably foreseeable future development within the City of Roseville and its sphere of influence and in the Sutter and Sacramento County portions of the study area is anticipated to result in additional losses. **Figure 3.4-12** shows the vernal pool grassland habitat conversions projected to occur through 2060 based on projected growth in the study area. The figure is a generalized representation of the resource and is largely based on the projections of land conversions developed for western Placer County and Lincoln under the PCCP, supplemented with other data for the City of Roseville, as well as with available data for portions of the study area that are in Sutter and Sacramento counties. As the graphic shows, an estimated 19,000 acres (7,700 hectares) of vernal pool grassland areas are anticipated to be converted over the next 50 years. This includes approximately 397 acres (161 hectares) of vernal pool grassland habitat that exists on the project site.

The No Action Alternative has been developed to avoid the filling of all waters of the U.S. on the project site. In addition to avoiding all wetlands, the land use plan for the No Action Alternative provides a 50-foot buffer around all wetlands that would further protect the preserved wetlands. Consequently, this alternative would not result in filling of any wetlands on the project site and therefore would avoid the direct take of vernal pool crustacean species. However, the No Action Alternative would indirectly affect the quality of vernal pool habitat by removing the grassland areas and developing upland areas that discharge into vernal pools and wetlands. Therefore, the alternative would contribute to the cumulative loss of vernal pool grassland habitat in the study area by developing approximately 375 acres of upland habitat on the project site. Absent the need for a DA permit from the USACE, impacts to vernal pool crustaceans and their habitat under this alternative would require authorization under Section 10 of the federal ESA (**Mitigation Measure BIO-2a**). Although the USACE cannot enforce the measure, compliance with Section 10 is required by law. Therefore, there is reasonable certainty that it will be implemented. Compliance with Section 10 requirements will render the No Action Alternative's contribution to the cumulative impact on vernal pool grassland habitat **less than significant**.

**Proposed
Action**

As discussed above, cumulative development in the study area has resulted in the conversion of a substantial amount of vernal pool grassland habitat to agricultural, rural residential, urban and infrastructure land uses. Future growth is anticipated to further add to this cumulative impact and the Proposed Action would contribute to this impact by developing about 397 acres (161 hectares) of vernal pool grassland habitat with embedded vernal pools. However with mitigation, the Proposed Action's contribution to this cumulative impact would be rendered **less than significant**.

Based on the historical losses of vernal pool grassland habitat and the fact that vernal pool grassland habitat losses due to agricultural conversions would continue unmitigated, the USACE has determined that the cumulative impact on vernal pool habitat within the study area would be significant. By converting about 361 acres (146 hectares) of grassland habitat, including about 2.5 to 3 acres (1 to 1.2 hectares) of crustacean aquatic habitat, the Proposed Action would contribute to this impact.

As stated above, all new development, including the Proposed Action, would be subject to the regulatory and permitting requirements of the USACE, USFWS, CDFW, and the Regional Water Quality Control Board. Projects subject to these requirements must demonstrate that mitigation for loss of wetland habitats would result in no net loss of wetland functions and values and that mitigation would be sufficient to ensure that adverse impacts to special-status species that might be affected by filling of wetland habitat would be avoided or mitigated. Specifically, **Mitigation Measures BIO-1a, BIO-1b, and BIO-2b** would reduce the Proposed Action's direct and indirect effects on waters of the U.S., including vernal pools and the effects on listed crustacean aquatic habitat to **less than significant**. Furthermore, as part of the mitigation for impacts to the waters of the U.S. and to address the Proposed Action's impact on state special-status species foraging habitat, the Applicant will be required to conserve an equivalent acreage of grazing land or farmland elsewhere in the County, which would also help preserve vernal pool grasslands within the study area. With the implementation of these mitigation measures, the Proposed Action's contribution to the cumulative impact on vernal pool grassland habitat would be rendered **less than significant**.

**Alts. 1
through 5**

Although the acreage of open space preserved on the site varies under each on-site alternative, in all instances, the acreage designated open space would be greater than the Proposed Action. Alternatives 1 through 5 would, nonetheless, develop portions of the project site and would result in the loss of vernal pool grassland habitat. Therefore, the alternatives would contribute to a **significant** cumulative impact on vernal pool grassland habitat. However, the effects of the alternatives would be reduced to **less than significant** by the same mitigation measures listed above under the Proposed Action.

Off-Site Alt. The Off-Site Alternative would also result in the loss of vernal pool grassland habitat and would contribute to a **significant** cumulative impact on vernal pool grassland habitat. The effects of the Off-Site Alternative would be reduced to **less than significant** by the same mitigation measures listed above under the Proposed Action.

Cumulative Impact BIO-3 Effects on Wildlife Foraging and Movement Habitat

No Action Alt. Cumulative development has resulted in the conversion and fragmentation of a substantial amount of natural habitat in the study area. As a result, areas available to wildlife for foraging and movement have been reduced and fragmented. Future growth, including the No Action Alternative, is anticipated to further add to this cumulative impact. Mitigation is proposed in this Draft EIS to reduce the No Action Alternative's contribution to **less than significant**.

As noted in **Cumulative Impact BIO-2** above, approximately 12,000 acres (4,900 hectares) of habitat would be lost due to future development within the Placer County portion of the study area. Additional losses, estimated at about 7,000 acres (3,000 hectares) of habitat, would occur in association with future projects in Sutter and Sacramento County portions of the study area and with future projects within the City of Roseville or its sphere of influence.

The No Action Alternative would develop the project site with urban uses and infrastructure and in conjunction with that development remove about 275 acres (111 hectares) of foraging and movement habitat for wildlife species. Currently, the area to the north of the project site is already approved for development, but the area to the south has not been authorized for development by the USACE. Therefore, the No Action Alternative would impact wildlife movement from the south through the existing grassland on the site but would protect the riparian habitat, which is a higher value migration corridor than grasslands. In addition to the developed area to the east of the project site, the approved development area to the north of the project site, the area to the south is planned for development. Consequently areas for wildlife migration would continue to diminish. Therefore, the combined effect of past, current and future projects, including the No Action Alternative, on wildlife foraging and movement habitat is considered a **significant** cumulative effect.

However, the loss of foraging habitat on the project site (which also represents Swainson's hawk foraging habitat) would be compensated by preserving grassland habitat at the CDFW-specified ratios. Therefore, with preservation of grassland habitat off-site, the No Action Alternative's contribution to the cumulative impact on foraging would be rendered **less than significant**.

It is reasonable to assume that other future projects would also be required to reduce

their individual impacts as part of their environmental review process and permitting. However, despite these measures, some reduction in wildlife habitat would still occur as a result of cumulative development. Through its permitting program, the USACE will work with study area cities and counties to focus and concentrate growth in certain portions of the study area, minimize future losses of wetlands and vernal pool grassland habitat within the study area, and compensate for unavoidable losses. These efforts would minimize further fragmentation of and reductions in wildlife movement habitat in the study area and would concentrate the habitat preservation efforts in certain portions of western Placer County that would lead to the preservation of large tracts of land that are contiguous and provide wildlife movement opportunities. Therefore, the cumulative impact would be reduced to **less than significant**.

- Proposed Action, Alts. 1 through 5** The Proposed Action and Alternatives 1 through 5, like the No Action Alternative, would result in the loss of grassland areas and movement habitat on the project site and thereby contribute to the cumulative impact. **Mitigation Measure BIO-1a** is proposed in this Draft EIS to reduce the contribution of Proposed Action and Alternatives 1 through 5 to **less than significant**.
- Off-Site Alt.** The Off-Site Alternative, like the No Action Alternative, would result in the loss of a comparable acreage of grassland areas and movement habitat on the alternative site and thereby contribute to the cumulative impact. The same mitigation measures, including the mitigation measure described under the Proposed Action, would reduce the effect to **less than significant**.

3.4.8 REFERENCES

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