
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 but not limited to the following sources:

- Revised U.S. Fish and Wildlife Service Biological Assessment to Support Section 7 Consultation for the Placer Vineyards Specific Plan Project, Placer County, California, prepared by ECORP Consulting, March 27, 2013 (see document titled Applicant's Submittal in Support of a Biological Assessment, U.S. Fish and Wildlife Service in **Appendix 3.4**);
- Revised National Marine Fisheries Service Endangered Species Act Consultation, Biological Assessment for Placer Vineyards Specific Plan Project, Placer County, California, prepared by ECORP Consulting, March 27, 2013 (see document titled Applicant's Submittal in Support of a Biological Assessment, National Marine Fisheries Service in **Appendix 3.4**);
- Placer Vineyards Specific Plan Environmental Impact Report, certified by Placer County, October 2006; and
- Placer Vineyards Mitigation Strategy, prepared by ECORP Consulting/Cox Castle Nicholson, November 2012 (see **Appendix 2.0**).

3.4.2 AFFECTED ENVIRONMENT

3.4.2.1 Key Terms Used in this Section

As described in **Chapter 1**, the Placer Vineyards Specific Plan (PVSP) includes development of a 5,230-acre (2,117-hectare) site with a mix of land uses, predominantly residential use with some commercial and office uses, public and quasi-public uses, parks, and open space, and the infrastructure improvements to support these uses. The U.S. Army Corps of Engineers (USACE) has 23 active DA permit applications to develop up to 3,746 acres (1,516 hectares) of land within the PVSP area (project site) and an application for the development of backbone infrastructure. The owners of the remaining properties, comprising 505 acres (204 hectares) within the PVSP area, are not applying for DA permits at this time. In addition, limited to no development is envisioned in the western 979 acres (396 hectares) of the project site, an area that is designated a Special Planning Area (SPA) by the County. However, for reasons presented in **Chapter 1**, for purposes of this EIS, the Proposed Action encompasses the development of the entire PVSP site consistent with the County-approved PVSP. The term "Project Site" in this section refers to the entire 5,230-acre (2,117-hectare) site. All resources, activities, and impacts within the 5,230-acre (2,117-hectare) project site are described in this section as being "on the project site" or "on-site."

Given that DA permits are not being sought at this time for some portions of the project site, the on-site resources and impacts are presented in this section separately for "Properties with Active DA Permit Applications" and "Properties with No DA Permit Applications."

The Proposed Action also includes infrastructure improvements (two sewer lines, a potable water line, a recycled water line, and road improvements) that would be constructed outside of the project site. The alignments of the infrastructure improvements are referred to as “off-site” throughout this section.

3.4.2.2 Regional Setting

For 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 project 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 Location and Setting

The project site consists of flat to gently rolling topography with elevations ranging from approximately 40 to 100 feet (12 to 30 meters) above mean sea level. Current land uses within the project site include active agriculture (pasturelands and farmlands), rural residences, transmission line corridors, and paved and unpaved roadways. The project site contains a variety of habitat types, and is dominated by a mixture of non-native annual grassland (grazed and non-grazed) and cultivated agricultural land, with scattered seasonal wetlands, including vernal pools, stock ponds, and ephemeral (and formerly ephemeral) streams. Runoff from the irrigated pastures and rice fields has altered the hydrology of the site, as several historically ephemeral stream features are currently intermittently, or even perennially, wet. Where changed, these watercourses typically support emergent marsh vegetation and scattered stands of scrub riparian habitat. A mature riparian corridor occurs along the southeastern edge of the project site adjacent to Dry Creek. Two stands of blue oak woodland and several scattered individual oak trees represent the majority of the upland trees on the project site. Non-native landscaping dominates the rural residential portions of the project site (ECORP 2012b).

Land uses near the alignments of the off-site infrastructure improvements are typical of the project area and include active agriculture (pasturelands and farmlands), rural residences, transmission line corridors, and developed and undeveloped roadways. Habitat types along the alignments include annual grassland, riparian woodland, oak woodland, seasonal wetland and vernal pool complexes, and landscaped areas associated with industrial, commercial, rural, and residential development.

The climate in the project area 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 (usually in winter) is approximately 20 inches (51 centimeters).

As described in more detail in **Section 3.8**, the site is underlain by strata of the Riverbank Formation, strata of the Turlock Lake Formation, and a small portion is underlain with Quaternary Period Alluvium (Placer County 2006). These geological formations are not known to support soil-specific special-status plant species that occur primarily in the Sierra Nevada foothills. In addition, most of the soils mapped on the project site are categorized as Alfisols, which have a dense clay layer or have a hardpan that restricts the percolation of water. As such, these soils tend to become inundated in swales and depressions during the wet season. Several of these soils are known to support vernal pools and swales in this part of the Central Valley.

Similar to the project site, the areas to the north and west of the project site consist of mostly grazed annual grasslands with dispersed vernal pools and cultivated agricultural uses. The area to the east and northeast is urbanized with residential developments and roadways.

3.4.2.4 Surveys Conducted for the Proposed Action

Waters of the United States

Wetland delineations have been conducted for each of the properties with active DA permit applications, and with the exception of one property, all wetland delineations have been verified by the USACE. The Placer Vineyards C property (#6) wetlands jurisdictional determination has not been verified. Aquatic features within the properties with no active DA permit applications, and off-site area for infrastructure improvements were visually assessed through aerial photograph interpretation. Delineations for infrastructure improvements will be conducted by the Applicants and submitted to the USACE for verification as access rights are secured.

Plant Surveys

Surveys for federally listed, proposed, and/or candidate plants were conducted in 2004, 2005, and 2006 within the properties with active DA permit applications and have been completed on approximately 3,502 acres (1,417 hectares). To date, no federally listed plants species have been identified on-site.

Wildlife Species Surveys

Wet and/or dry season surveys for vernal pool branchiopods have been completed on approximately 2,521 acres of the project site. Full-protocol wet season surveys were conducted on 16 of the 22 properties with active DA permit applications during the 2004 through 2008 seasons and assessment surveys were conducted on one property which focused on a specific subset of potential habitat and terminated after positive results were obtained. Vernal pool fairy shrimp (*Branchinecta lynchi*) was identified on five of the properties surveyed and vernal pool tadpole shrimp (*Lepidurus packardii*) was identified on one of the properties.

Valley Elderberry Longhorn Beetle surveys have been conducted for parcels totaling approximately 934 acres (378 hectares). To date, no elderberry shrubs have been observed on the project site.

3.4.2.5 Project Site Habitat Types

Figure 3.4-1, **Project Site Habitat Types**, presents the on-site biological communities and Table 3.4-1, **Project Site Habitat Types**, presents the acreage of each biological community on the site. Figure 3.4-1 identifies properties with active DA permit applications and those without active DA permit applications. The latter areas have not been completely surveyed for wildlife and plant species because neither the Applicants nor the USACE has access to them. The acres of habitat types for both types of properties are summarized in Table 3.4-1 and described below. Wetland habitats are described further in Subsection 3.4.2.7, **Waters of the United States**, below.

**Table 3.4-1
Project Site Habitat Types (acres)**

Habitat Type	Properties with Active DA Permit Applications	Properties without Active DA Permit Applications (including SPA)	Total
Seasonal Wetlands	81.5	0.6	82.1
Vernal Pools	32.5	8.6	41.1
Stream/Pond	49.3	1.5	50.8
Marsh/Riparian	39.1	3.5	42.6
Oak Woodland/Oak Savannah	65.5	1.8	67.3
Annual Grassland	2,123.7	1,349.2	3,472.9
Agricultural Land	1,330.3	117.4	1,447.7
Roads/Other Surfaces	22.0	5.3	27.3
Total	3,743.9¹	1,486.4	5,231.8²

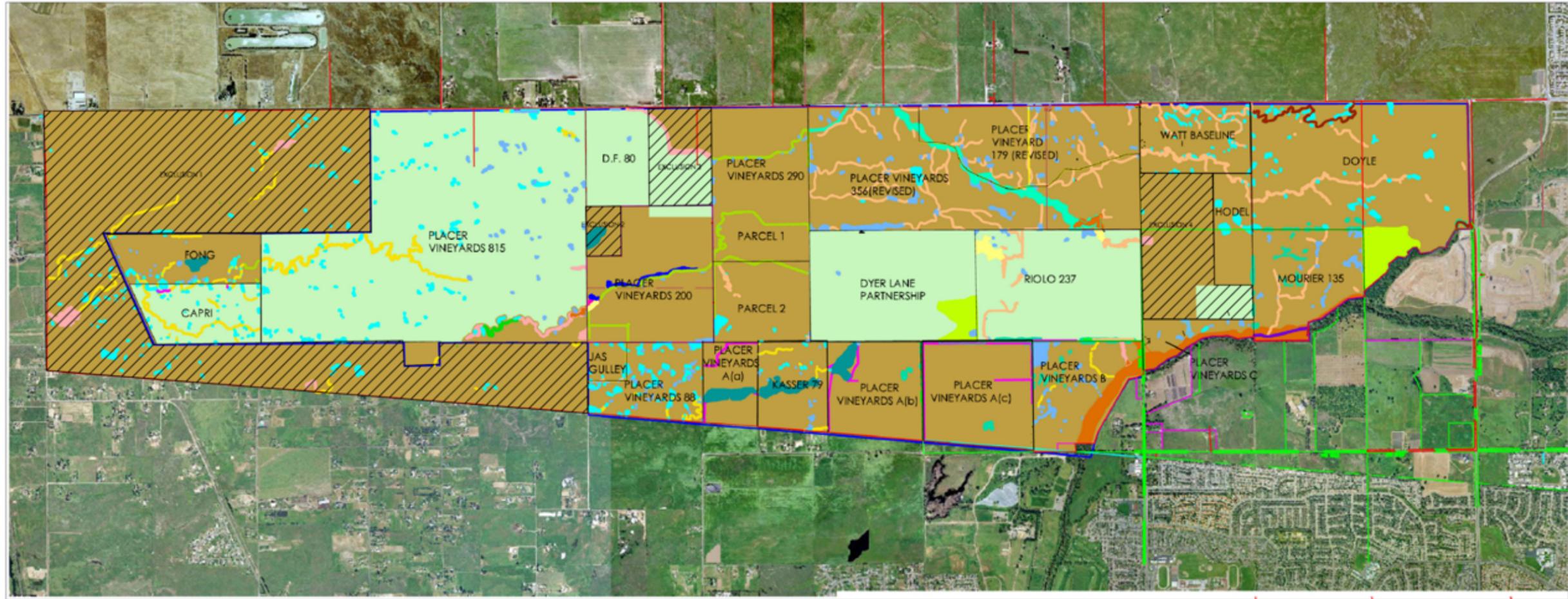
Source: ECORP, 2012b; Placer County, 2006.

¹ This number represents the acreage for the 3,746-acre development area. Surveyed boundary data overlap results in minor acreage discrepancy.

² This number is slightly greater (1.8 acres) than the total area of the project site due to survey boundary data overlap error.

Annual Grassland

Annual grassland is the dominant habitat type on the project site. It occurs throughout the region and is used for grazing (or lies fallow). This herbaceous vegetation community is dominated by non-native grasses and forbs, such as those found in the agricultural land described below. Plant species found in this community include Fitch's tarweed (*Hemizonia fitchii*) and soft chess (*Bromus hordeaceus*). The project site contains approximately 3,473 acres (1,405 hectares) of grassland, of which approximately 2,124 acres (860 hectares) occur within the areas with active DA permit applications.



SOURCE: ECorp Consulting, Inc./Quad Knopf - 2005

FIGURE 3.4-1

Project Site Habitat Types

Wildlife species observed in this habitat type include American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), and western meadowlark (*Sturnella neglecta*). Additional species expected to occur here include house finch (*Carpodacus mexicanus*), savannah sparrow (*Passerculus sandwichensis*), western kingbird (*Tyrannus verticalis*), and California ground squirrel (*Spermophilus beecheyi*). Seasonal wetlands within the region are associated with the non-native grassland habitats. Wildlife species expected to occur in seasonal wetlands are similar to those observed or expected to occur in the non-native grasslands.

Riparian Habitat

When water remains in an intermittent stream long enough, emergent vegetation can become established. Mature riparian habitat occurs along the southeastern edge of the project site adjacent to Dry Creek. Another small, sparse stand of riparian habitat occurs in association with an intermittent stream in the southwestern portion of the project site. Riparian trees such as arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix goodingii*), and Fremont's cottonwood (*Populus fremontii*) occur in these areas. The associated understory consists of woody and herbaceous plant species such as Himalayan blackberry (*Rubus discolor*), dallis grass (*Paspalum dilatatum*), and Johnson grass (*Sorghum halepense*). Just upstream to the east, across Palladay Road, there is a 0.6-acre (0.2-hectare) stand of eucalyptus planted around a stock pond (mapped as riparian non-native).

Riparian areas provide habitat for a variety of wildlife. Bird species expected to occur in the riparian habitat in association with the on-site intermittent stream include northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), northern flicker (*Colaptes auratus*), white-crowned sparrow (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), black phoebe (*Sayornis nigricans*), yellow-rumped warbler (*Dendroica coronata*), spotted towhee (*Pipilo maculatus*), and American goldfinch (*Carduelis tristis*). Common mammal species expected to occur in this habitat type include raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*). Opossum (*Didelphis marsupialis*) is also commonly observed in riparian habitats.

Oak Woodland/Oak Savannah

Two stands of blue oak woodland totaling approximately 44.3 acres (17.9 hectares) occur within the project site. The blue oak woodland is dominated by blue oaks (*Quercus douglasii*) with a non-native herbaceous understory typical of non-native grassland habitat. The savannah is an open community with several scattered oaks. Approximately 19.4 acres (7.9 hectares) of oak savannah habitat have been identified on properties with active DA permit applications.

Blue oak woodlands provide cover, foraging and roosting opportunities for a wide range of avian species. Species observed in this habitat type include northern flicker, dark-eyed junco (*Junco hyemalis*), white-breasted nuthatch (*Sitta carolinensis*), acorn woodpecker (*Melanerpes formicivorus*), house finch (*Carpodacus mexicanus*), mourning dove (*Zenaida macroura*), and western scrub jay (*Aphelocoma californica*).

Agricultural Land

Cultivated agricultural land makes up a large portion of land use throughout the region. Typically, these areas are actively maintained (disked or tilled) throughout the year for cultivated grain crops such as wheat. Other areas are leveled and flooded for rice production, or irrigated for cattle grazing. Upland herbaceous vegetation primarily consists of non-native grass species such as wild oats (*Avena sp.*), foxtail (*Hordeum murinum*), annual ryegrass (*Lolium multiflorum*), and annual bluegrass (*Poa annua*). Additional weedy herbaceous species include yellow star-thistle (*Centaurea solstitialis*), filaree (*Erodium sp.*), and wild radish (*Raphanus sativus*). The project site contains approximately 1,448 acres (586 hectares) of agricultural lands of which 1,330 acres (538 hectares) are within the areas with active DA permit applications.

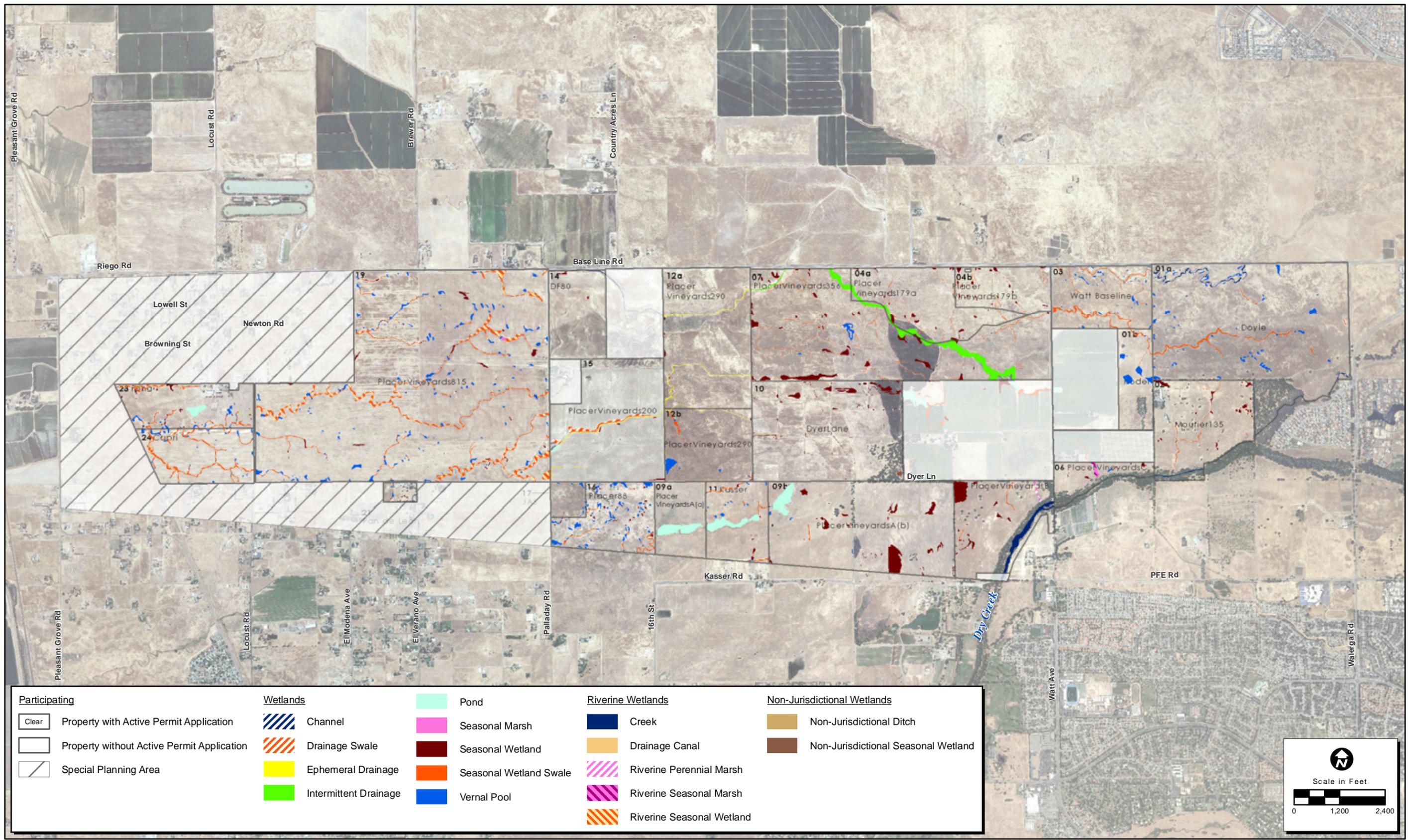
Agricultural land provides food and cover for small mammals, which in turn provide a prey base for raptors. Wildlife species observed in this habitat type include birds of prey such as Swainson's hawk (*Buteo swainsoni*), loggerhead shrike (*Lanius ludovicianus*), American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), turkey vulture (*Cathartes aura*), and white-tailed kite (*Elanus leucurus*). Additional species observed include white-crowned sparrow (*Zonotrichia leucophrys*), Brewer's blackbird (*Euphagus cyanocephalus*), western meadowlark (*Sturnella neglecta*), and European starling (*Sturnus vulgaris*).

3.4.2.6 Habitats Present in the Off-Site Infrastructure Area

Vegetation communities mapped within the off-site infrastructure area include annual grassland, riparian woodland, oak woodland, seasonal wetland and vernal pool complexes, and landscaped areas associated with industrial, commercial, rural, and residential development. In addition, there are other water bodies such as creek and small stream crossings. Aquatic features in the off-site infrastructure area have been estimated based on aerial photograph interpretation, since access to these off-site areas could not be secured. Furthermore, the upland resources have not been quantified, since construction-related disturbances to these resources are expected to be temporary and minor in nature.

3.4.2.7 Project Site Waters of the United States

The project site contains approximately 177 acres (72 hectares) of the waters of the U.S. The wetlands are dispersed throughout the project site with higher concentrations in the northeastern, southern, and western portions of the site. The types of wetlands within the project site are identified in **Table 3.4-2, Project Site Waters of the U.S.** and shown in **Figure 3.4-2, Project Site Waters of the U.S.** The surveyed portion of the project site contains the following depressional wetlands: vernal pools, seasonal wetlands, seasonal wetland swales, seasonal marshes, pond, and drainage swales. The project site also contains the following riverine wetlands: canals, creeks, ephemeral streams, intermittent streams, channels, riverine seasonal wetlands, riverine seasonal marshes, and riverine perennial marshes. Information about these waters is based on multiple wetland delineations that were combined and presented to the USACE by ECORP. Except for one property, all of the wetland delineations for properties with active DA permit applications have been verified by the USACE.



SOURCE: ECORP Consulting, Inc., May 2012

FIGURE 3.4-2

Project Site Waters of the U.S.

**Table 3.4-2
Project Site Waters of the U.S.**

Waters of the U.S.	Properties with Active DA Permit Applications	Properties without Active DA Permit Applications (including SPA)	Total
Depressional Wetlands			
Vernal Pool	32.5	0.1	32.6
Seasonal Wetland	41.4	1.4	42.8
Seasonal Wetland Swale	12.7	3.4	16.1
Seasonal Marsh	0.2	0.0	0.2
Pond	18.5	5.4	23.9
Drainage Swale	2.1	0.0	2.1
Riverine Wetlands			
Canal/Ditch	1.5	0.6	2.1
Creek	6.0	1.0	7.0
Ephemeral Stream	4.1	0.0	4.1
Intermittent Stream	17.8	0.0	17.8
Channel	1.5	0.0	1.5
Riverine Seasonal Wetlands	25.3	0.0	25.3
Riverine Seasonal Marsh	0.6	0.0	0.6
Riverine Perennial Marsh	0.6	0.0	0.6
Total	164.7	12.0	176.7

Source: ECORP, 2012b.

Vernal Pools

Vernal pools are shallow depressions underlain by a hardpan layer that causes them to inundate. Vernal pools typically flood to a depth of 2 inches (5 centimeters) to over 1 foot (30 centimeters) 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. The project site contains approximately 32.5 acres (13.2 hectares) of vernal pools; all of these are located on properties for which DA permit applications have been filed.

The project site vernal pools support typical vernal pool plants species found in the Sacramento Valley. Plant species observed in these habitats include Vasey's coyote-thistle (*Eryngium vaseyi*), popcorn flower (*Plagiobothrys stipitatus*), tricolored monkeyflower (*Mimulus tricolor*), and downingia (*Downingia* spp.). The invertebrate species that potentially occur in vernal pools include common species such as clam shrimp (*Cyzicus* or *Lynceus* sp.), seed shrimp species, and several aquatic insects such as predaceous diving beetles (*Family Dytiscidae*), crawling water beetles (*Family Haliplidae*), back swimmers (*Family Notonectidae*), and water fleas (*Daphnia* sp.). Listed species that have been observed in the project site vernal pools include vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*).

Seasonal Wetlands

Seasonal wetlands (defined here to include seasonal wetlands, seasonal wetland swales, drainage swales, and riverine seasonal wetlands) occur throughout the project site. Seasonal wetlands are typically associated with shallow streams, swales or other depressions, and typically support wetland vegetation including grasses such as Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), perennial ryegrass (*Lolium perenne*), curly dock (*Rumex crispis*), annual bluegrass (*Poa annua*), and annual rabbits-foot grass (*Polypogon monspeliensis*). The project site contains approximately 84.8 acres (34.3 hectares) of seasonal wetlands, 81.5 acres (33.0 hectares) of which are located on properties with active DA permit applications. This acreage is subject to change following verification of wetlands on the properties for which no DA permit applications have been filed at this time.

Streams and Ponds

There are approximately 31.2 acres (12.6 hectares) of streams mapped within the project site, 30.8 acres (12.5 hectares) of which are located on properties with active DA permit applications. Several stream types are mapped within the project site. These include canal/ditch, perennial creek, ephemeral streams, intermittent stream, and channel. These features typically have a defined bed and bank, and are mostly devoid of vegetation. There are three types of stream channels that occur within the project area: perennial streams, intermittent streams, and ephemeral streams. Most of these streams remain dry most of the time, carrying water only during and/or shortly after rain events. However, Dry Creek along the southeastern boundary is a perennial creek. Curry Creek, which is located in the northeastern portion of the project site, although previously an intermittent creek has changed to more of a perennial condition through the addition of irrigation runoff from upstream development (North Fork Associates 2009).

There are approximately 18.5 acres (7.5 hectares) of ponds and stock ponds on the project site. The ponds and stock ponds on the project site support a narrow fringe of perennial vegetation dominated by cattail (*Typha latifolia*), bulrush (*Scirpus acutus*), and common rush (*Juncus effusus*). The remainder of pond surface acreage is open water.

Dry Creek is the only feature on the site known to support a variety of fish species. Although the on-site ponds could support warm water species such as sunfishes, these do not provide habitats for listed species, such as Chinook salmon (*Oncorhynchus tshawytscha*) or steelhead (*Oncorhynchus mykiss*). Listed and other special-status fish species are discussed later in this section under **Special-Status Species**.

Riverine Marsh

The project site contains approximately 0.6 acre (0.2 hectare) of riverine seasonal marsh and 0.6 acre (0.2 hectare) of riverine perennial marsh. This acreage is subject to change following verification on the properties for which no DA permit applications have been filed at this time.

3.4.2.8 Off-site Infrastructure Area – Waters of the United States

As described in **Section 3.4.2.1**, the Proposed Action also includes infrastructure improvements that would be constructed outside of the project site. Since some of these off-site infrastructure improvements would cross streams in the vicinity of the project site and pass through areas containing wetlands including vernal pools, wetland swales, seasonal wetlands, perennial marsh, these off-site improvements that are part of the Proposed Action would also fill approximately 4.2 acres (1.7 hectares) of jurisdictional wetlands and would have the potential to affect fish species present in the streams crossed by the improvements, including Dry Creek, Curry Creek, and Steelhead Creek.¹

3.4.2.9 Quality of Project Site Wetlands

The quality of project site wetlands was evaluated by ECORP Consulting using the California Rapid Assessment Method (CRAM). CRAM is a standardized, tool for assessing the health of wetlands and riparian habitats. The purpose of the assessment was to document the existing conditions of the wetlands and to compare wetlands across the site.

The CRAM methodology assesses four attributes of wetlands – buffer and landscape context, hydrology, physical structure, and biotic structure. Each of the four attributes is further subdivided into metrics. The metrics are defined by narrative descriptive conditions that are assessed in the field and each narrative condition correlates to a numeric value. The numeric values are lower for wetlands in a poor or degraded condition and higher for wetlands in a good or relatively undegraded condition. The numeric values are then used to derive an overall CRAM score that can range from a low of 25 to a high of 100.

A total of 54 CRAM assessment areas (AAs) in various locations on the project site were selected for evaluation. The AAs selected for evaluation were approved by the USACE, U.S. Environmental Protection Agency (USEPA), and U.S. Fish and Wildlife Service (USFWS). An assessment area can comprise a single wetland feature or a group/system. Fourteen of the AAs were vernal pool systems, 14 AAs were individual vernal pools, and 26 AAs comprised individual depressional wetland features. The results of the CRAM analysis are shown in **Figure 3.4-3, California Rapid Assessment Method Analysis Results**. Representatives from USACE, USEPA, and USFWS were present during the initial scoring and field-verified the results. The average AA score of the evaluated features was 69.1. The AA

¹ This does not include off-site water supply infrastructure improvements that would be constructed by PCWA or any transmission line improvements that would be constructed by the utility companies. As and when those improvements are proposed, PCWA or the utility companies will complete an environmental review and if the improvements have a potential to fill waters of the U.S., PCWA or the utility company will obtain necessary permits from the USACE.

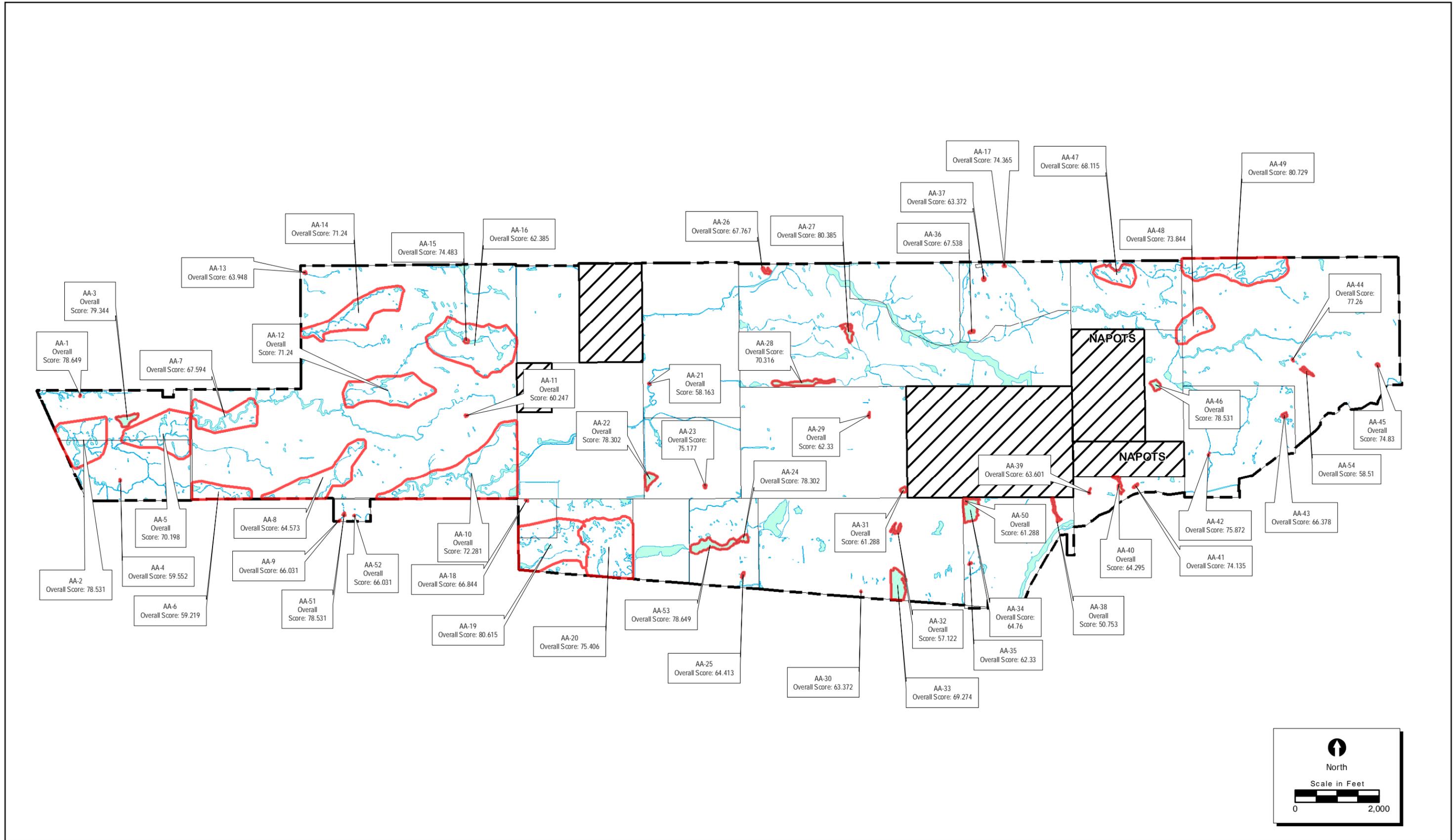
scores range from a low of 50.8 to a high of 80.7 indicating that there is a fair amount of variability in the condition of the resource on the project site, and project site wetlands in some portions of the project site have been affected by past and present agricultural practices such as disking, irrigated agriculture (for rice, row crops and pasture), and dry farming.

3.4.2.10 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 consideration under the National Environmental Policy Act (NEPA). Special-status plants and animals 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 Wildlife Code, Section 1900 et seq.)
- Animals listed on California Department of Fish and Wildlife's Special Animals List (California Fish and Wildlife 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 identifies six special-status plants and 23 special-status wildlife species for the project region. Of the six plant species and 23 wildlife species, three plants and 22 wildlife species either occur within the project site or have some potential to occur because the project site and area of off-site improvements has some areas of suitable or marginally suitable habitat or the species are known from nearby locations.



SOURCE: ECorp Consulting, Inc., September 2009

FIGURE 3.4-3

California Rapid Assessment Method Analysis Results

Special-Status Plants

Special-status plant species that have the potential to occur at or near the project site and in the vicinity of off-site infrastructure improvements are presented in **Table 3.4-3, Special-Status Plants with Potential to occur on the Project Site or in the Off-Site Infrastructure Areas**, below. Of these, five species are federally listed special-status plants or species of concern. Most of the plant species typically occur in vernal pool habitats (i.e., Boggs Lake hedge-hyssop, Sacramento Valley Orcutt grass, slender Orcutt grass, Ahart's dwarf rush, and Henderson's bentgrass). However, due to either their shallow depth or disturbed nature (due to either historical or active cultivation) and the lack of on-site survey sightings, their potential for occurrence in vernal pools on the project site has been determined to be low. These species could, however, occur in pools within the off-site infrastructure areas.

**Table 3.4-3
Special-Status Plants with Potential to occur on the Project Site or in the Off-Site Infrastructure Areas**

Name	Federal Status	State Status	Habitat	Likelihood of Occurrence on Project Site
Boggs's Lake hedge-hyssop <i>Gratiola heterosepala</i>	-	E	Vernal Pools	Marginal habitat is present.
Sacramento Valley Orcutt grass <i>Orcuttia viscida</i>	E	E	Vernal Pools	No suitable habitat present.
Slender Orcutt grass <i>Orcuttia tenuis</i>	T	E	Vernal Pools	No suitable habitat present.
Henderson's bentgrass <i>Agrostis hendersonii</i>	SC	--	Vernal pools	Marginal habitat present.
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	SC	--	Vernal pools	Marginal habitat present.
Hartweg's golden sunburst <i>Pseudobahia bahiaefolia</i>	E	E	Foothills, woodlands, clay grasslands	No suitable habitat present.

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
- SC = species of concern

State

- = No status
- E = Listed as "endangered" under the California Endangered Species Act
- R = Listed as "rare" under the California Endangered Species Act

Critical habitat for vernal pool species including slender Orcutt grass and Sacramento Orcutt grass was designated in August 2003 by the USFWS (2003a) and revised in 2005 (USFWS 2005b) and 2006 (USFWS

2006a). The nearest Critical Habitat Unit for slender Orcutt grass is located approximately 13 miles (21 kilometers) southeast of the project site near Mather Air Force Base and the nearest Critical Habitat Unit for Sacramento Orcutt grass is approximately 7 miles (11 kilometers) southeast of the project site within the Phoenix Field vernal pool complex. There is no critical habitat designation for Hartweg's golden sunburst, nor has any been proposed. However, a recovery plan for southern Sierran foothill plants, which addresses this species, is currently under development by the USFWS (ECORP 2012b).

Special-Status Wildlife

Table 3.4-4, Special-Status Wildlife Species with Potential to Occur on the Project Site or in the Off-Site Infrastructure Areas, below, presents wildlife species that were observed on the project site during field surveys or have some potential to occur because the project site and the off-site infrastructure areas have 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 or in the
Off-Site Infrastructure Areas**

Name	Federal Status	State Status	Habitat	Likelihood of Occurrence on Project Site
Invertebrates				
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	E	-	Vernal pools, swales, seasonal wetlands	Marginal habitat present. Not observed on site. Known to occur in the project region.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	E	-	Vernal pools, some seasonal wetlands	Present on project site.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T	-	Vernal pools, some seasonal wetlands	Present on project site.
California linderiella <i>Linderiella occidentalis</i>	SC	-	Vernal pools, some seasonal wetlands	Suitable habitat present.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T	-	Elderberry shrubs	Suitable habitat present. Not observed in portion of the project site surveyed.
Amphibians and Reptiles				
Western spadefoot <i>Spea hammondi</i>	--	SSC	Grasslands with seasonal breeding pools	Suitable habitat present.
California tiger salamander <i>Ambystoma californiense</i>	T	SSC	Valley-foothill grasslands with suitable breeding pools	Marginal habitat present.
Western pond turtle <i>Actinemys marmorata</i>	-	SSC	Permanent water bodies with basking sites such as logs and rocks	Suitable habitat present.
California red-legged frog <i>Rana aurora draytonii</i>	T	SSC	Deeper pools and streams with emergent or overhanging vegetation	Marginal habitat present.

Name	Federal Status	State Status	Habitat	Likelihood of Occurrence on Project Site
Giant garter snake <i>Thamnophis couchi gigas</i>	T	T	Perennial water bodies with sufficient cover vegetation	Marginal habitat present.
Birds				
Grasshopper sparrow <i>Ammodramus savannarum</i>	-	SSC	Short to middle-height, moderately open grasslands with scattered shrubs. Upland meadows, pastures, hayfields.	Suitable habitat present in off-site utility corridor.
Northern harrier <i>Circus cyaneus</i>	-	SSC	Grasslands, seasonal wetlands, agricultural lands	Suitable habitat present. Observed foraging.
White-tailed kite <i>Elanus leucurus</i>	-	FP	Open grassland, and farmlands. Nests in tall trees near foraging areas	Suitable habitat present.
Western burrowing owl <i>Athene cunicularia</i>	-	SSC	Grasslands with friable soils for burrowing	Suitable habitat present.
Swainson's hawk <i>Buteo swainsoni</i>	-	T	Large trees, riparian woodlands and open grasslands/agricultural fields for foraging	Suitable nesting and foraging habitat present.
Greater sandhill crane <i>Grus canadensis tabida</i>	-	T	Seasonal wetlands, irrigated pastures, alfalfa and corn fields	Marginal foraging habitat present. No nesting habitat.
Loggerhead shrike <i>Lanius ludovicianus</i>	-	SSC	Grasslands, pastures, agricultural lands	Suitable foraging habitat present. Observed foraging. Marginal nesting habitat.
California black rail <i>Laterallus jamaicensis</i>	-	T	Shallow, perennial freshwater marshes	Marginal habitat present.
Tricolored blackbird <i>Agelaius tricolor</i>	-	SSC	Open water areas with tall emergent vegetation or in willow and blackberry thickets	Suitable habitat present.
Western yellow-billed cuckoo <i>Coccyzus americanus</i>	SC	-	Large blocks of riparian habitats, particularly woodlands with cottonwoods and willows	No suitable habitat present.
Bats				
Pallid bat <i>Antrozous pallidus</i>	-	SSC	Shrublands, grasslands, woodlands, forests; rocky areas, caves, hollow trees	Suitable foraging habitat present. Marginal roosting habitat present.
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	-	SSC	Most low to mid elevation habitats; caves, mines, and buildings for roosting	Suitable foraging habitat present. Marginal roosting habitat present.

Name	Federal Status	State Status	Habitat	Likelihood of Occurrence on Project Site
Yuma myotis <i>Myotis yumanensis</i>	-	SSC	Forests and woodlands; caves, mines, and buildings for roosting	Suitable foraging habitat present. Marginal roosting habitat present.
Fish				
Delta smelt	T	T	Sacramento Delta	Not present in Dry Creek watershed
Central Valley steelhead	T	-	Sacramento River and its perennial tributaries	Occurs on-site within Dry Creek
Central Valley Chinook Salmon (spring-run)	T	T	Sacramento River and its perennial tributaries	Not present in Dry Creek watershed
Sacramento River Chinook salmon (winter-run)	E	E	Sacramento River and its perennial tributaries below Shasta Dam	Not present in Dry Creek watershed
Sacramento River Chinook salmon (fall/late fall-run)	SC	-	Sacramento River and its perennial tributaries below Keswick Dam	Occurs on-site within Dry Creek

Status explanations:

Federal

E = listed as endangered under the federal Endangered Species Act

T = listed as threatened under the federal Endangered Species Act

SC = species of concern; species for which the 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

Federal Special-Status Wildlife Species

Vernal Pool Invertebrates

Four special-status invertebrates have a potential to occur in seasonal wetland habitats on the project site: Conservancy fairy shrimp (*Branchinecta conservatio*) and vernal pool tadpole shrimp (*Lepidurus packardii*), both federally listed as Endangered species, vernal pool fairy shrimp (*Branchinecta lynchi*), federally listed as a Threatened species, and California linderiella (*Linderiella occidentalis*), federally listed as a species of concern. 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.

The USFWS has produced a Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (Recovery Plan), which includes efforts for vernal pool fairy shrimp and vernal pool tadpole shrimp conservation (USFWS 2005a). Portions of western Placer County, including portions of the project site, are situated within the Southeastern Sacramento Vernal Pool Region (as identified within the Recovery Plan), which is a "Priority 2" core area for vernal pool fairy shrimp and vernal pool tadpole

shrimp. The Recovery Plan recommends the protection of 85 percent of suitable habitat within the core area, but it does not specify regulatory limits or requirements (USFWS 2005a).

Conservancy fairy shrimp is federally listed as Endangered. The species is endemic to California, and is found in grasslands in the northern two-thirds of the Central Valley. The historic distribution of Conservancy fairy shrimp is not known. Only one occurrence of the species is known from Placer County. Marginal habitat for the species is present on the project site. However, determinate surveys for vernal pool branchiopods did not document Conservancy fairy shrimp occurrence on the project site (ECORP 2012b). Based on a review of USFWS data, there is no critical habitat for Conservancy fairy shrimp within the vicinity of the project site (USFWS 2005b). The Vernal Pool Recovery Plan does not include western Placer County as a core area for the Conservancy fairy shrimp conservation (USFWS 2005a).

Vernal pool tadpole shrimp is federally listed as Endangered. The species is associated with low-alkalinity seasonal pools in grasslands throughout the northern and eastern portions of the Central Valley. Determinate surveys for vernal pool branchiopods have documented vernal pool tadpole shrimp occurrence on the project site (ECORP 2012b). No Critical Habitat Units for vernal pool tadpole shrimp are located within the project site or areas that would be affected by the off-site infrastructure improvements. The nearest Critical Habitat Unit for vernal pool tadpole shrimp is located approximately 11 miles (18 kilometers) southeast of the project site near Mather Air Force Base (USFWS 2005b). A portion of the project site is within the western Placer County core area for the recovery of this species (USFWS 2005a).

Vernal pool fairy shrimp is federally listed as Threatened. The species is adapted to seasonally inundated features such as vernal pools, seasonal wetlands, and seasonal wetland swales. Based on determinate surveys for vernal pool branchiopods, vernal pool fairy shrimp have been documented to occur on the project site (ECORP 2012b). No Critical Habitat Units for vernal pool fairy shrimp are located within the project site or areas that would be affected by the off-site infrastructure improvements. The nearest Critical Habitat Unit for vernal pool fairy shrimp is approximately 9 miles (14 kilometers) north of the project site (USFWS 2005b). A portion of the project site is within the western Placer County core area for the recovery of this species (USFWS 2005a).

California linderiella is a federal species of concern. It is the most common fairy shrimp in the Central Valley. It has been documented at elevations as high as 3,770 feet (1,149 meters) on most landforms, geologic formations, and soil types supporting vernal pools in California. California linderiella was considered for listing in 1995 but the listing was rejected. It remains on the federal candidate list. Suitable habitat is present on the project site. A portion of the project site is within the western Placer County core area for the conservation of this species (USFWS 2005a).

Other Federally listed Wildlife Species

Valley elderberry longhorn beetle (VELB) is federally listed as Threatened and occurs in association with elderberry shrubs, where it completes its life cycle. Elderberry shrubs were not observed on the project site but could occur in unsurveyed areas of the project site such as the Dry Creek riparian area or

in the off-site infrastructure areas where suitable habitat exists. Elderberry shrubs are widely distributed throughout the region and are known from many locations near the project site. The nearest Critical Habitat Unit designated for the Valley elderberry longhorn beetle is approximately 8 miles (13 kilometers) southeast, along the American River (CDFG 2003).

California tiger salamander (CTS) is federally listed as Threatened and state-listed as a species of special concern. It is found in vernal pools and seasonal ponds, including stock ponds, in grassland, from sea level to about 1,500 feet (457 meters) in central California. The project site is outside the range of previously recorded observations for this species. There are no documented occurrences of CTS on the project site or its vicinity and it is well established that this species does not currently occur in Placer County. The nearest documented occurrence of CTS is approximately 20 miles (32 kilometers) southwest of the project site near Davis, in Yolo County. Critical habitat was designated for the Central Population of CTS by USFWS in 2005 and the nearest Critical Habitat Unit is located approximately 28 miles (45 kilometers) southeast of the project site. The project site and infrastructure improvements do not fall within CTS critical habitat. The project site contains habitat components that CTS could inhabit. However, the habitat is marginal. And because CTS is not known from the area, it is highly unlikely to occur on the project site.

California red-legged frog (CRLF) is federally listed as Threatened and state-listed as a species of special concern. Once common, most of the remaining populations occur in the Coast Ranges. The project site is outside the range of previously recorded observations of CRLF. In addition, reproducing populations of CRLF have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated. The nearest documented occurrence of this species is approximately 13 miles (21 kilometers) east of the site. There are no documented occurrences of CRLF on the project site or its vicinity. Although both Curry Creek and Dry Creek provide marginal habitat, predators including bullfrogs were detected within both creeks which further diminishes the likelihood that CRLF is present within the creeks. Critical habitat has been designated for the species (USFWS 2006b). The project site and off-site improvements do not fall within any Critical Habitat units and the nearest Critical Habitat Unit is located approximately 35 miles (56 kilometers) east of the project site (PLA-1) in the Sierra Nevada.

Giant garter snake is state- and federally listed as a Threatened species. The historic range of giant garter snake extended from the vicinity of Sacramento and Contra Costa Counties southward to Buena Vista Lake, near Bakersfield in Kern County (Federal Register 1999). Currently, the range of this species is restricted to rice production zones of Sacramento, Sutter, Butte, Colusa, and Glenn Counties, portions of Yolo County, and along the eastern fringes of the Sacramento-San Joaquin River delta (USFWS 1993). The majority of the project site is outside the range of previously recorded observations for giant garter snake, and none have been found within the project site. The nearest documented occurrences of giant garter snake is approximately 1.2 miles (1.9 kilometers) west of the project site. The species has not been observed on the project site, and it is unlikely that it does occur there. However, there are areas of marginal habitat that are hydrologically connected to populated areas to the west, and therefore, the project site cannot be completely excluded from potential occupancy.

In addition, the species could occur in marginally suitable habitat present in the area of some off-site infrastructure improvements. No critical habitat has been designated for the giant garter snake.

Western yellow-billed cuckoo is a candidate species to be proposed for federal listing. Historically, the breeding range of the yellow-billed cuckoo included most of North America. In the west, the distribution of the species has declined significantly. In California, the northern limit of breeding is the Sacramento Valley. There are no documented occurrences of western yellow-billed cuckoo in the project area or its vicinity, and there is no suitable nesting or foraging habitat on the project site. No Recovery Plan or Critical Habitat has been designated for this species.

Delta smelt is federally listed as Threatened. The historic range of this species extended from Suisun Bay upstream to the City of Sacramento on the Sacramento River. Currently it is only known to occur in the lower reaches of the Sacramento River below Isleton, the San Joaquin River below Mossdale, throughout the Delta and into Suisun Bay. The nearest occurrence of Delta smelt is approximately 29 miles (47 kilometers) southwest of the project site. Except for the small portion of Dry Creek, there is no suitable habitat for Delta smelt within the project site or in the infrastructure improvements area. Furthermore, no occurrences of Delta smelt are reported from the Dry Creek watershed. Critical habitat for Delta smelt was established by the USFWS in 1994. The project site is not within designated critical habitat for this species.

Central Valley steelhead is federally listed as Threatened. Steelhead requires cold, clean water flowing over a gravel bottom in order to successfully reproduce. This species is known to occur in the Sacramento River and many of its tributaries below Keswick Dam in Shasta County. Steelhead use of upstream portions of the Dry Creek system (i.e., Miners Ravine and Secret Ravine) indicates that these species migrate through the portion of Dry Creek adjacent to the project site and therefore are present on the project site (ECORP 2012b). This species could also occur in appropriate habitat in off-site infrastructure areas (utility line and roadway crossings).

Sacramento River Chinook salmon (winter-run) is federally listed as Threatened. Similar to steelhead, Chinook salmon (spring-run, fall-run, late fall-run, and winter run) require cold, clean water flowing over a gravel bottom in order to successfully reproduce. These species are known to occur in the Sacramento River and many of its tributaries below Keswick Dam in Shasta County. Neither winter-run nor spring-run Chinook salmon use the Dry Creek system. Fall-run salmon and steelhead use of upstream portions of the Dry Creek system (i.e., Miners Ravine and Secret Ravine) indicates that these species migrate through that portion of Dry Creek adjacent to the project site. These species could occur in appropriate habitat in off-site infrastructure areas (utility line and roadway crossings) (Placer County 2006).

State Special-Status Wildlife Species

Western spadefoot toad is a state species of special concern. It occurs throughout the Central Valley and adjacent foothills up to 4,500 feet (1,372 meters). There are four occurrences within 5 miles (8 kilometers) of the project vicinity (ECORP 2006d and 2007b). With the exception of one occurrence which is within a mitigation site, the other three recorded sites are threatened by ongoing urbanization in the Roseville area, and one recorded site has already been developed. Although vernal pools occur in the project site

and off-site infrastructure areas, the disturbed nature of the land (i.e., active cultivation), and degraded condition of these habitats likely precludes the occurrence of this species.

Western pond turtle is a state species of special concern. This species occurs in permanent water bodies with basking sites such as logs and rocks. Although this species could occur on the project site, since this species was not observed during reconnaissance surveys and there are no historical records known for Placer County, the potential for the species to occur in the on-site ponds is low.

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 to 3 miles [3 to 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.

Northern harrier is a state species of special concern. While population declines in California have been noted for many years, the species can be locally abundant. They occur primarily in open wetland, grassland, and agricultural habitats. 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. This species could nest on the site because suitable nesting and foraging habitat exists in some portions of the project site.

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. Nesting of this species is possible on the site because the project site provides suitable nesting and foraging habitat for the white-tailed kite.

Swainson's hawk is a state listed Threatened species. It forages in open grassland in the Central Valley and Great Basin and 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. The scattered valley oak, cottonwood, willow, and eucalyptus trees located in the project site provide suitable nesting opportunities. Numerous nest sites are known to occur in the vicinity of the project site. Swainson's hawks prefer agricultural fields adjacent to nest sites for foraging. Due to the proximity of the project site to known nest sites, this species could forage throughout the project site as well as nest in selected trees.

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.

California black rail is a state-listed Threatened species. Until recently, the current range of this species was thought to be restricted mainly to coastal marshes. In the 1990s populations were discovered in freshwater marshes in Yuba County. Recently the black rail was detected in the City of Rocklin in Clover Valley and along Yankee Slough southeast of Sheridan. The black rail typically inhabits marshes dominated by bulrushes and cattails. A relatively narrow range of conditions is required for occupancy and successful breeding. Too much water will prevent nesting and too little water will lead to abandonment of the site. Suitable nesting habitat is currently lacking on the project site and it is highly unlikely that this species could nest on the project site.

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. They also occupy artificial habitats, such as those created by pipes and small culverts. Burrowing owls forage in grassland and agricultural habitats with low vegetative height. Burrowing owl has not been recorded on the project site, but potential foraging and nesting habitat is present.

Tri-colored blackbird is a state species of special concern that is almost entirely restricted to California. In any given year, more than 75 percent of the breeding population can be found in the Central Valley. 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. Tricolored blackbirds prefer marsh habitats and are less likely to nest in blackberry brambles in the Central Valley. Because these habitats are present on the project site, the species could nest on the site.

Loggerhead shrike is a state species of special concern. It is a permanent resident and winter visitor throughout California. 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. Loggerhead shrike use small trees and shrubs within open grassland and agricultural settings as nesting territories. The entire project site is suitable foraging habitat for the species.

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. Herons and egrets could also forage in the area; however, no rookeries were observed during field surveys (Placer County 2006).

Special-status Bats that have a potential to occur in the area include Townsend's big-eared bat, Pallid bat, and Yuma myotis. These species prefer arid upland areas in California in a wide variety of habitats including arid wooded and brushy uplands near water. These species feed on moths, flies, and beetles. The project site and off-site infrastructure areas provide suitable foraging opportunities for these species. However, no potential maternity roost sites were found during the surveys, and these species are not expected to breed on the project site, but could breed within the off-site infrastructure areas (Placer County 2006).

3.4.2.11 Regional Aquatic Resources

The Proposed Action and alternatives would receive its water supply from various surface water supply sources (**Section 3.15, Utilities and Service Systems**). The Proposed Action's initial surface water supply source would be from the lower American River water and long-term surface water supply would be from the Sacramento River. Fish species and fisheries habitat present in the American River and the Sacramento River are described below.

Lower American River

The American River is one of two major tributaries of the Sacramento River, with the Feather River as the second major tributary. The lower American River begins below Nimbus Dam and flows along the valley floor until it reaches the Sacramento River in the City of Sacramento.² The flow regime in the lower American River has been significantly altered since the completion of the Folsom and Nimbus dams. The lower American River from Nimbus Dam to Goethe Park is primarily unrestricted by levees, but is bordered by some developed areas. Natural bluffs and terraces hydrologically control this reach of the river. Downstream and extending to its confluence with the Sacramento River, levee construction and resulting reductions in velocity and meandering have transformed the river channel to a slower moving, deeper reach (Placer County 2006).

The lower American River provides a diversity of aquatic habitats, including shallow, fast-water riffles, glides, runs, pools, and off-channel backwater habitats. At least 43 species of fish 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" and 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).

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 watersheds represents a significant component of the total

² The lower American River is designated a Wild and Scenic river for recreational use under the federal Wild and Scenic Rivers Act.

Central Valley Project (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.

The upper Sacramento River, the portion of the river from Keswick Dam to 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. 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 (Placer County 2006).

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 (Placer County 2006).

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 (Placer County 2006).

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*) (Placer County 2006).

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

3.4.3.1 Federal Laws and Regulations

Federal laws and regulations for the protection of biological resources that 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 US, is summarized below and discussed 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 the USEPA’s Section 404(b)(1) guidelines that the proposed activity is the least environmentally damaging practicable alternative that achieves the project's overall purpose (see document titled Section 404(b)(1) Alternatives Analysis for Placer Vineyards Specific Plan in **Appendix 3.4**). Practicable alternatives include activities that do not involve a discharge of fill into waters of the United States or involve a discharge at another location(s) in waters of the United States. An alternative is “practicable” if it is “available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes” (40 CFR § 230.10(a)(2)).

In March 2008, the USEPA and USACE issued the Compensatory Mitigation Rule (33 CFR 332) that provides new standards to ensure no-net-loss of wetlands and emphasizes use of the best available science. This rule reinforces the goal to first avoid and then minimize impacts to waters, and then provides a preference hierarchy for compensatory mitigation in the following order: mitigation banks, in-lieu fee program credits, and permittee-responsible mitigation. It is preferable that compensatory mitigation take place at a mitigation bank within the same watershed as the waters to be replaced. If mitigation banks are not available within the affected watershed, then compensatory mitigation involving creation or restoration within the affected watershed may be preferable to using a mitigation bank outside the affected watershed.

In addition to the above provisions, Section 404(b)(1) Guidelines also prohibit discharges that cause or contribute to violation of water quality standards, violate any toxic effluent limit under Section 307 of the

Clean Water Act, jeopardize the continued existence of any listed species, or destroy or modify listed species' critical habitat (40 CFR §230.10(b)).

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 Department of the Interior and the National Marine Fisheries Service (NMFS) - NOAA - Fisheries in the 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 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 NMFS in some instances) and state fish and wildlife agencies regarding the impacts on fish and wildlife resources and measures to mitigate these impacts.

Vernal Pool Recovery Plan

The project site is located within the area covered by the “Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon” prepared by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 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 these species will no longer require protection under the Endangered Species Act. 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.

The project site is 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 (MBTA) 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 MBTA; it does not constitute any legal authorization to take migratory birds.

Numerous migratory bird species have potential to nest in the project site. Mitigation is proposed in this Draft EIS to avoid impacts to nesting migratory birds from construction of the Proposed Action or any of its alternatives.

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 the Federal Endangered Species Act (FESA) 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 applicants 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 applicants 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 require a 1602 streambed alteration agreement from CDFW.

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

Under Sections 3503 and 3503.5 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.

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.

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 applicants would be required to obtain a Section 401 water quality certification for their federal wetlands permits.

3.4.4 SIGNIFICANCE THRESHOLDS AND ANALYSIS METHODOLOGY

3.4.4.1 Significance Thresholds

Council on Environmental Quality (CEQ) regulations require 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 in Endangered or Threatened species or their habitat (40 CFR 1508.27). The National Environmental Policy Act (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, otherwise protected, or special-status species, by the CDFW or the USFWS;³
- have a substantial adverse effect on riparian habitat;
- have a substantial adverse effect on waters of the United States; or
- interfere substantially with the movement of any native, resident or migratory wildlife species.

3.4.4.2 Analysis Methodology

This impact analysis addresses effects of the Proposed Action and alternatives on both on-site and off-site biological resources. The term "on-site" is defined as referring to the 5,230-acre (2,117-acre) project site, whereas the term "off-site" refers to land area within which Proposed Action-related off-site improvements (such as roadway widening, etc.) would be located. The area evaluated for effects is shown in **Figure 3.4-4, Project Study Area**, and includes the project site, the alignments of the infrastructure improvements and a 250-foot (76-meter) zone around the site and on both sides of the linear improvements. The analysis evaluates both direct and indirect effects of the Proposed Action and alternatives, as defined below.

Direct Effects

With respect to direct effects, the analysis assumes full buildout of the Proposed Action or an alternative 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 infrastructure improvements such as roadways. The following activities would result in direct effects:

- Vegetation clearing (including trees), grading, excavating/trenching, and paving activities during construction;

³ There are no local or regional plans, policies, or regulations related to plant and wildlife species that apply to the project area.

- 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 streams and wetlands, resulting from construction runoff containing petroleum products.

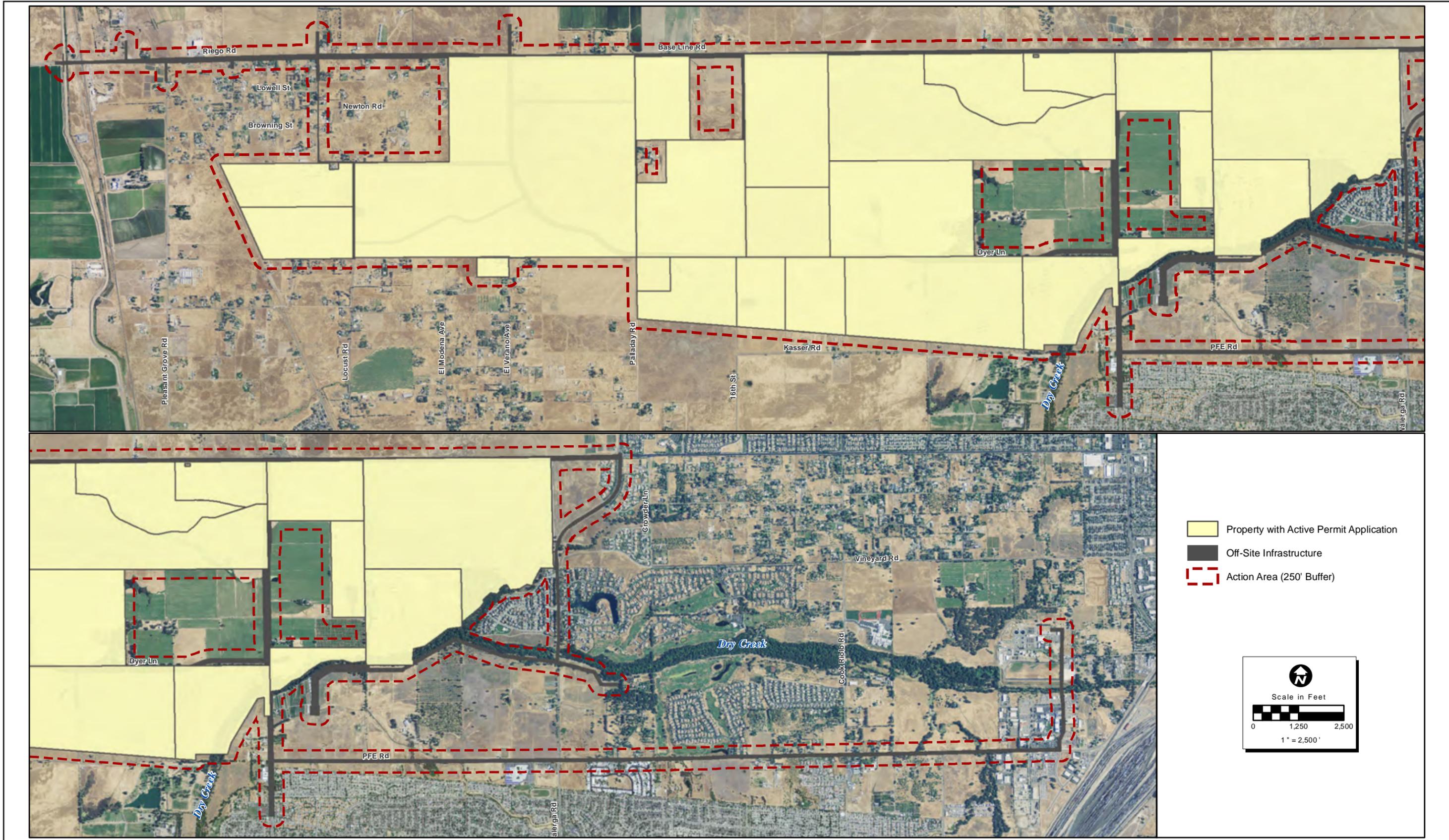
Indirect Effects

With respect to indirect effects, the analysis covers on-site areas that would not be developed but would be conserved as open space as well as adjacent off-site lands (within 250 feet [76 meters] of the project boundary and the alignments of all off-site infrastructure improvements) that could be indirectly affected. The following activities could result in indirect effects:

- Altering light and noise levels;
- Altering hydrology;
- Causing damage through toxicity associated with herbicides, pesticides, 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.

With respect to the Proposed Action, two scenarios are evaluated throughout this EIS. These include the Base Plan which is a lower density development plan and would provide for a community of about 33,000 persons, and the Blueprint scenario which is a higher density version that would accommodate up to 49,000 persons. The two scenarios represent the “bookends” of the range of development that could occur on the site. Although the Blueprint scenario would result in minor land use shifts within the plan area to accommodate the higher densities, the development footprint would remain essentially the same as under the Base Plan scenario. Consequently all of the direct (footprint) impacts of development, such as filling of wetlands or removal of listed species habitat, would be the same no matter whether the site developed at a lower density or at a higher density. Therefore, the discussion of footprint impacts below applies to both scenarios and any other development density between the two bookends. To the extent that any of the impacts are influenced by the size of the population that would be present on the site or the density of development, those impacts are discussed separately for each density scenario below.

With respect to the alternatives, all of which are modifications to the proposed land use plan to place additional areas in open space and avoid the filling of wetlands in certain portions of the project site, the analysis focuses on the change (decrease) in the development footprint and the reduction in wetland/habitat impacts as a result of the modified footprint.



SOURCE: ECORP Consulting, Inc., October 2012

FIGURE 3.4-4

Project Study Area

3.4.5 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

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

No Action A total of 176.7 acres (71.5 hectares) of waters of the U.S. have been identified on the project site. In addition, there are about 4.2 acres (1.7 hectares) of waters of the U.S. within the area that would be disturbed by off-site improvements that would be necessary to develop the project site.

Under the No Action Alternative, although the project site and off-site infrastructure would be developed, all wetland areas would be avoided and no fill would be placed within waters of the U.S. Furthermore, the site plan developed for the No Action Alternative would ensure no grading or other ground disturbance would occur within 50 feet (15 meters) of the on-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 indirect effects** to aquatic resources and no mitigation is required.

Proposed Action (Base Plan and Blueprint Scenario) Implementation of the Proposed Action would result in direct impacts to 119.3 acres (48.2 hectares) of wetlands and other waters of the U.S. This is a **significant** effect of the Proposed Action. Mitigation is proposed to ensure no net loss of wetland values and functions. Due to the conceptual nature of the mitigation plan, the USACE cannot fully evaluate this effect and has therefore assumed that it remains potentially **significant**.

As noted above, a total of 176.7 acres (71.5 hectares) of waters of the U.S. have been identified on the project site. Loss of aquatic resources would occur as a result of grading in preparation for development, construction of roads and utility corridors, creation of storm water detention basins along stream corridors, and other ground-disturbing activities related to construction. As shown in **Table 3.4-7**, implementation of the Proposed Action would result in the loss of 115.1 acres (47 hectares) of wetlands and other waters of the U.S. on the project site and approximately 4.2 acres (1.7 hectares) off site, resulting in a total direct loss of 119.3 acres (48.2 hectares) of wetland area and functions. **Figure 3.4-5, Proposed Action – Waters of the U.S. On-Site Impacts**, shows the affected wetlands on the project site and **Figure 3.4-6, Waters of the U.S. Impacts – Off-Site Improvements**, shows the off-site affected aquatic resources. Approximately 104 acres (42 hectares) would be filled in association with the development on the parcels for which there are active DA permit applications, and an estimated 11.1 acres (4.5 hectares) would be filled in conjunction with the development of those areas for which there are no active DA permit applications at this time. This latter number is an estimate based on aerial photo interpretation as no wetland delineations have been performed or verified for those areas.

To minimize the impact on on-site aquatic resources, some portions of the project site containing vernal pools and other seasonal wetlands have been designated as open space in

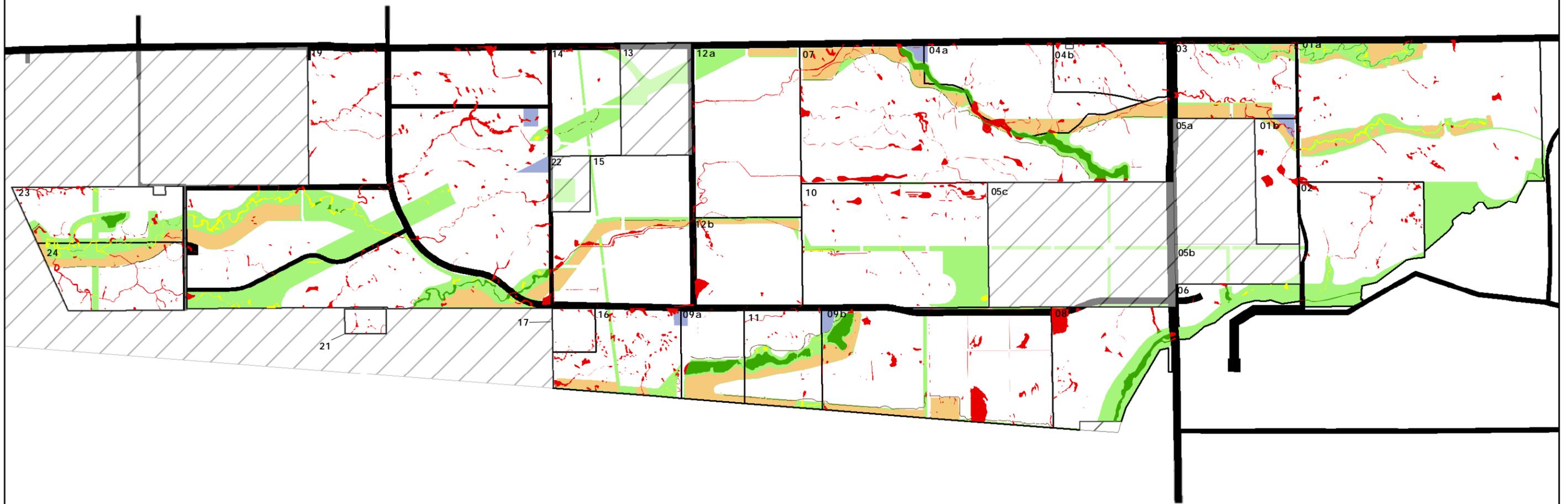
the PVSP. Most of these open space preservation areas are aligned along drainage courses and include moderate concentrations of both vernal pools and seasonal wetlands located in proximity to these drainage courses. As a result of designating open space areas on the project site, filling of approximately 61.6 acres (25 hectares) of aquatic resources would be avoided within the project site as part of the Proposed Action.

**Table 3.4-7
Proposed Action Impacts to Waters of the U.S. (acres)**

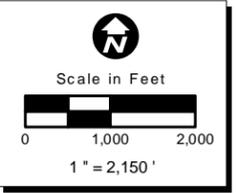
Wetland Type	Waters of the U.S. on Project Site	Permit Area Impacts	Non-Permit Area Impacts*	Off-Site Impacts	Total Impact
Vernal Pool	32.6	27.5	0.0	0.2	27.7
Seasonal Wetland	42.8	39.6	1.4	2.2	43.2
Seasonal Wetland Swale	16.1	9.1	3.2	0.2	12.5
Seasonal Marsh	0.2	0.2	0.0	0.0	0.2
Pond	23.9	0.9	5.4	0.0	6.3
Ephemeral Stream	4.1	3.8	0.0	0.0	3.8
Intermittent Stream	17.8	4.0	0.0	0.2	4.2
Drainage Swale	2.1	2.0	0.0	0.0	2.0
Channel	1.5	0.1	0.0	0.1	0.2
Canal/Ditch	2.1	1.1	0.6	1.2	2.9
Creek	7.0	0.6	0.5	0.1	1.2
Riverine Seasonal Wetland	25.3	14.4	0.0	0.0	14.4
Riverine Seasonal Marsh	0.6	0.2	0.0	0.0	0.2
Riverine Perennial Marsh	0.6	0.5	0.0	0.0	0.5
Total	176.7	104.0	11.1	4.2	119.3

Source: ECORP, 2012b

* Includes Special Planning Area.



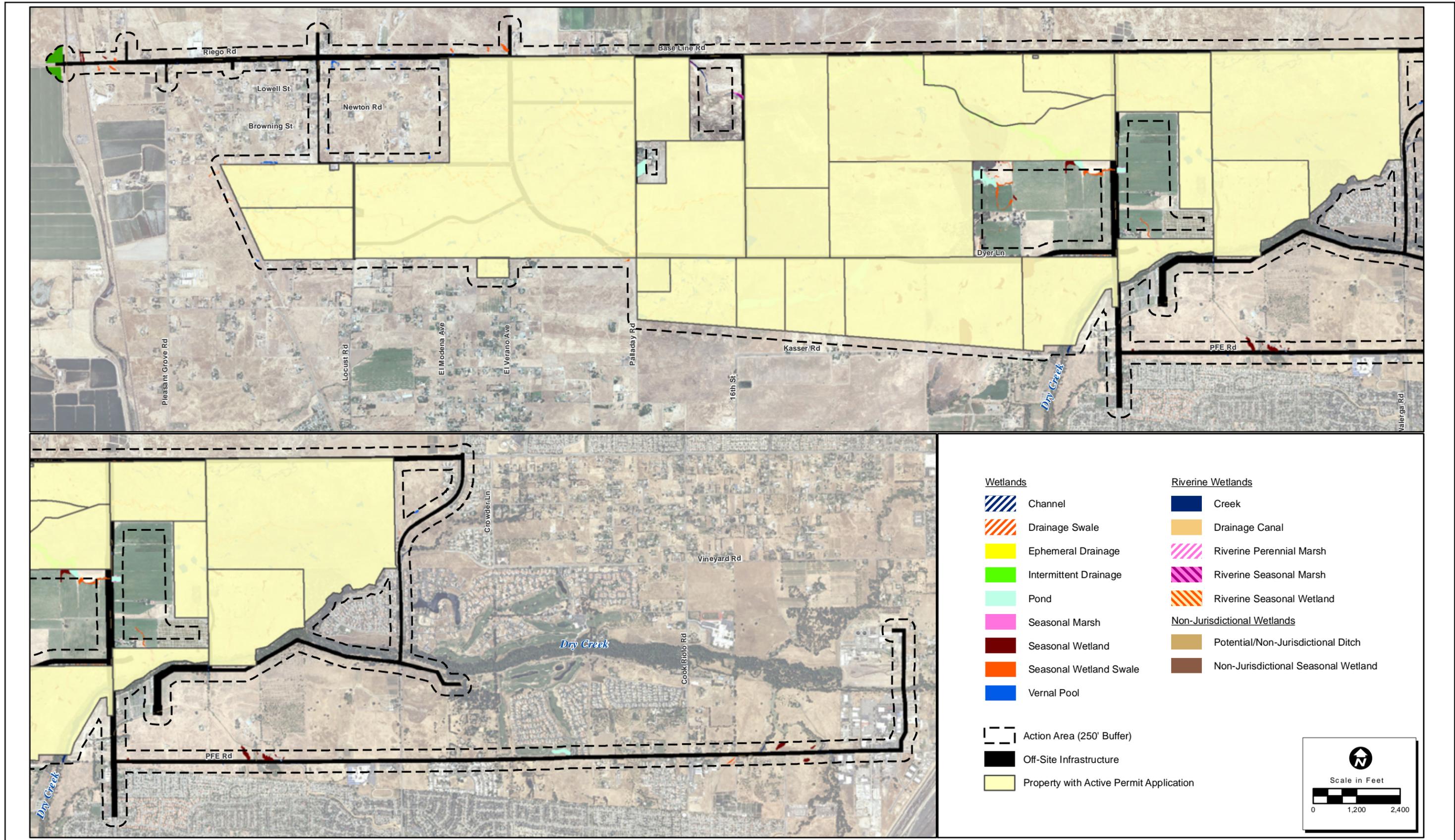
	Participating Property	<u>Open Space and Infrastructure</u>	
	SPA and NAPOTS		Open Space
<u>Impact Type</u>			
	Direct Impact		Channel
	Indirect Impact		Roading/Sewer
	Avoided		Trail
			Water Tank



SOURCE: ECORP Consulting, Inc., October 2012

FIGURE 3.4-5

Proposed Action – Waters of the U.S. On-Site Impacts



SOURCE: Ecorp Consulting, Inc. – May 2012

FIGURE 3.4-6

Waters of the U.S. Impacts – Off-Site Improvements

Although some of the on-site vernal pools and other wetlands would be avoided, and some of the on-site vernal pools and seasonal wetlands that would be filled are of moderate quality as they have been previously disturbed due to disking, grazing, and cultivation, the Proposed Action would, nonetheless, result in the filling of a substantial acreage of aquatic resources, including about 71 acres (29 hectares) of vernal pools and seasonal wetlands. Due to the increasing rarity of vernal pool habitat, the value of vernal pools and seasonal wetlands to plants and wildlife, their hydrologic function, and their association with many special-status species, the filling of vernal pools and other waters of the U.S. is a significant effect of the Proposed Action.

To mitigate for the loss of wetlands and other waters of the U.S., the Applicants have submitted to the USACE a conceptual mitigation strategy which is described in detail in **Chapter 2.0** and consists of preservation, restoration, and establishment of wetlands at an off-site location(s) and/or purchase of wetland creation/restoration and preservation credits from an approved mitigation bank in western Placer County within the bank's approved service area. According to the conceptual mitigation strategy, the Applicants would provide compensatory mitigation at the following rates.

Vernal Pools. For each 1.00 acre (0.40 hectare) of vernal pool fill (including seasonal depressional wetlands), 1.00 acre (0.40 hectare) of vernal pool will be preserved. For each 1.00 acre (0.40 hectare) of vernal pool fill (including seasonal depressional wetlands), 1.25 acres (0.51 hectare) of compensatory wetlands will be restored, enhanced, or created. The compensatory wetlands will include a minimum of 0.75 acre (0.30 hectare) of vernal pool and no more than 0.50 acre (0.20 hectare) of other wetlands.

All Other Wetlands. For each 1.00 acre (0.40 hectare) of filling of any other wetland type, 1.00 acre (0.40 hectare) of any wetland type will be preserved without regard for in-kind mitigation. The preservation requirement for open water may be met through preservation of 1.00 acre (0.40 hectare) of open water or any wetland type for each 1.00 acre (0.40 hectare) of fill.

For each 1.00 acre (0.40 hectare) of fill of any other wetland type, the compensatory restoration, enhancement, and creation requirement may be met by restoring, enhancing, and/or creating 1.25 acres (0.51 hectare) of any wetland type without regard for in-kind mitigation. The compensatory requirement for open water may be met through restoration, enhancement, or creation of 1.25 acres (0.51 hectare) of open water or any wetland type for each 1.00 acre (0.40 hectare) of fill.

Table 3.4-9a reports the wetland mitigation ratios, and **Table 3.4-9b** presents the estimated acreage of compensatory mitigation that would be provided based on these ratios.

Table 3.4-9a
Summary of Applicant-Proposed Wetland Mitigation Ratios

Impacted Wetland Type	Mitigation Ratio	Mitigation Wetland Type
Vernal Pool	1:1	Preserved Vernal Pool
	0.75:1	Restored, Enhanced, Created Vernal Pool
	0.50:1	Restored, Enhanced, Created Wetland
Other Wetland	1:1	Preserved Wetland (any kind)
	1.25:1	Restored, Enhanced, Created Wetland (any kind)
Open Water	1:1	Preserved Open Water or Wetland (any kind)
	1.25:1	Restored, Enhanced, Created Open Water Wetland (any kind)

Table 3.4-9b
Proposed Action Impacts and Mitigation for Waters of the United States (acres)

Habitat Type	Permit Area Impacts	Non-Permit Area Impacts*	Off-Site Impacts	Total Impacts	Preservation ¹	Creation/Restoration	Type of Compensatory Wetland
Vernal Pool	27.5	0.0	0.2	27.7	99.8	74.85 ²	Vernal Pool and Other Seasonal Wetlands
Seasonal Wetland	39.6	1.4	2.2	43.2			
Seasonal Wetland Swale	9.1	3.2	0.2	12.5			
Drainage Swale	2.0	0.0	0.0	2.0			
Riverine Seasonal Wetland	14.4	0.0	0.0	14.4			
Seasonal Marsh	0.2	0.0	0.0	0.2	19.4	74.1	Any Wetland Type
Pond	0.9	5.4	0.0	6.3			
Ephemeral Stream	3.8	0.0	0.0	3.8			
Intermittent Stream	4.0	0.0	0.2	4.2			
Channel	0.1	0.0	0.1	0.2			
Canal/Ditch	1.1	0.6	1.2	2.9			
Creek	0.6	0.5	0.1	1.2			
Riverine Seasonal Marsh	0.2	0.0	0.0	0.2			
Riverine Perennial Marsh	0.5	0.0	0.0	0.5			
Total	104	11.1	4.2	119.3			

Source: ECORP, 2012b

* Includes Special Planning Area.

¹ 1:1 for on- and off-site impacts

² 0.75:1 for on- and off-site impacts

³ Includes acreage mitigated at 1.25:1 for the listed categories of wetlands plus acreage associated with out-of-kind mitigation for vernal pool and seasonal wetland impacts at the rate of 0.5 acre for every acre of impacts to those types of wetlands.

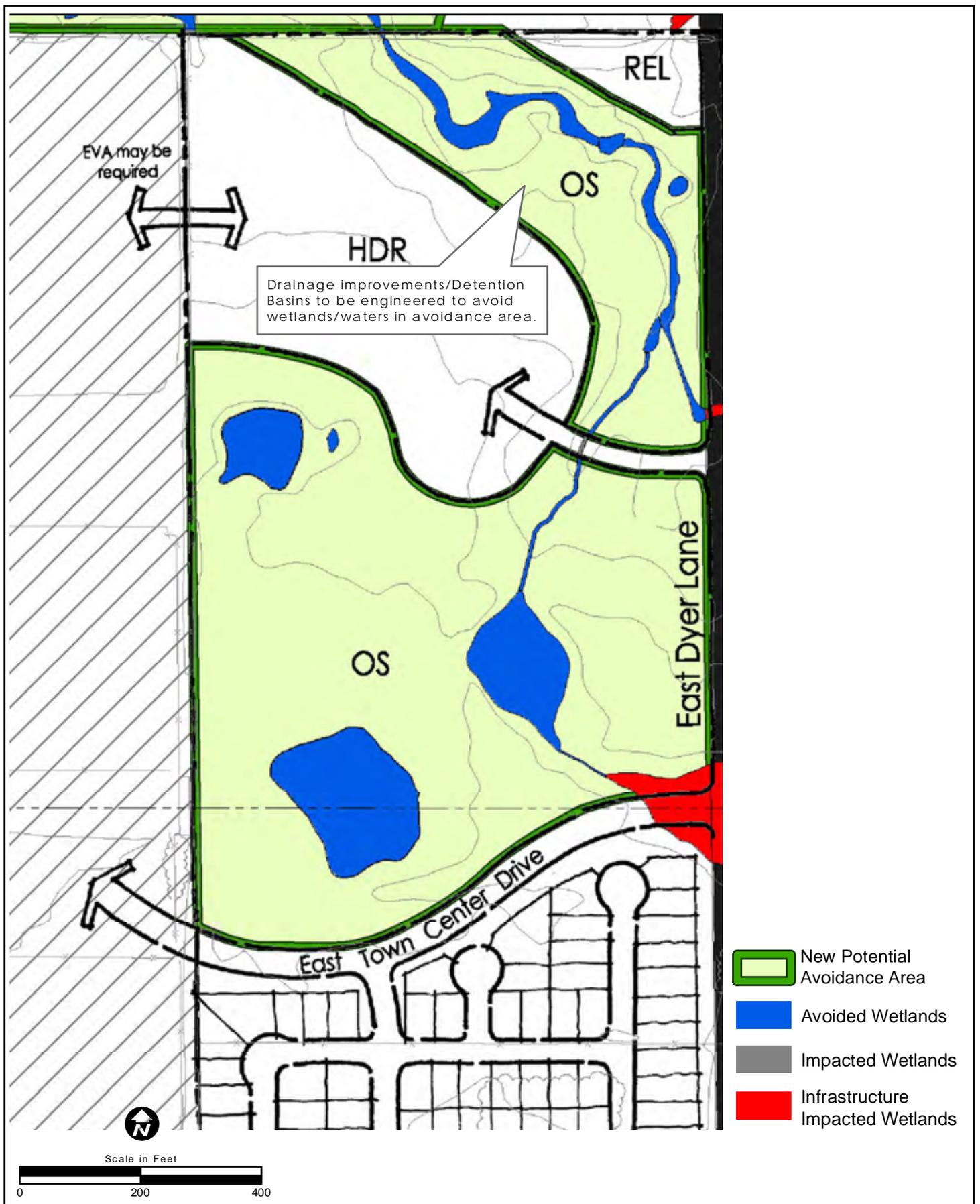
The mitigation strategy put forth by the Applicants is conceptual and subject to change. However, based on the USACE's evaluation of the mitigation strategy as proposed, the USACE has determined that it would not adequately mitigate the impacts of the Proposed Action as it would result in a net loss of wetland area and function. The Applicants propose to compensate for wetland area lost by enhancing, restoring (reestablishment), or creating (establishment) wetlands at a ratio of 1.25 acres (0.51 hectare) for every 1 acre (0.4 hectare) of wetland fill. However, enhancement would not result in new wetland area and thus there would be a net loss in wetland acreage. Vernal pool acreage lost would be compensated at the rate of 0.75 acre (0.30 hectare) for every 1 acre (0.4 hectare) of vernal pool filled with the balance (0.50 acre [0.2 hectare] for every acre [0.4 hectare] filled) of the compensatory acres provided out of kind. There would, therefore, be a net loss of vernal pool area and functions.

As the Applicant-proposed mitigation will not fully mitigate the Proposed Action's impact, **Mitigation Measure BIO-1** will be imposed by the USACE to further reduce the effect. However, because a revised mitigation strategy has not been submitted by the Applicants pursuant to **Mitigation Measure BIO-1**, the USACE cannot fully evaluate its effectiveness in reducing the impacts of the Proposed Action, and has therefore assumed that the impact would remain potentially **significant**.

Alt. 1 Alternative 1 presents a modified land use plan for Property 1B located in the eastern portion of the project site with land uses on the remainder of the project site unchanged from the Proposed Action. Under this alternative land use plan, 17 acres (7 hectares) located within Property 1B would be designated open space, as shown in **Figure 3.4-7, Alternative 1 (Property 1b) – Impact and Avoidance Areas**, and the filling of three large wetlands (approximately 4.1 acres [1.7 hectares]) present in this open space area would be avoided. As land development on the rest of the project site would remain the same as under the Proposed Action, wetland impacts on the rest of the project site would be the same as under the Proposed Action. As a result, this alternative would involve filling of 110.9 acres (44.9 hectares) of wetlands on the project site and 4.2 acres (1.7 hectares) of wetlands off-site for a total of 115.1 acres (46.6 hectares), as shown in **Table 3.4-8**. As with the Proposed Action and based on the significance criteria, the loss of these wetlands would be a **significant** effect of this alternative. Implementation of **Mitigation Measure BIO-1** would reduce effects to wetlands under Alternative A so that there would be no net loss of wetland area and functions. However without a detailed mitigation plan the USACE cannot fully evaluate this effect and has therefore assumed that it would remain potentially **significant**.

Alt. 2 Alternative 2 presents a modified land use plan for Property 3 located in the northeastern portion of the project site adjacent to Baseline Road with land uses on the remainder of the project site unchanged from the Proposed Action. Under this alternative land use plan, an additional 5 acres (2 hectares) located within Property 3 would be designated open space, as shown in **Figure 3.4-8, Alternative 2 (Property 3) – Impact and Avoidance Areas**, and the filling of wetlands (about 2.8 acres [1.1 hectares]) present in this expanded open space area would be avoided. As land development on the rest of the project site would remain the same as under the Proposed Action, wetland impacts on the rest of the project site would be the same as under the Proposed Action. As a result, this alternative would involve filling 112.2 acres (45.4 hectares) of wetlands on the project site and 4.2 acres (1.7 hectares) of wetlands off-site for a total of 116.4 acres (47.1 hectares), as shown in **Table 3.4-8**. As with the Proposed Action and based on the significance criteria, the loss of these wetlands would be a **significant** effect of this alternative. Implementation of **Mitigation Measure BIO-1** would reduce effects to wetlands under Alternative 2 so that there would be no net loss of wetland area and functions. However without a detailed mitigation plan the USACE cannot fully evaluate this effect and has therefore assumed that it would remain potentially **significant**.

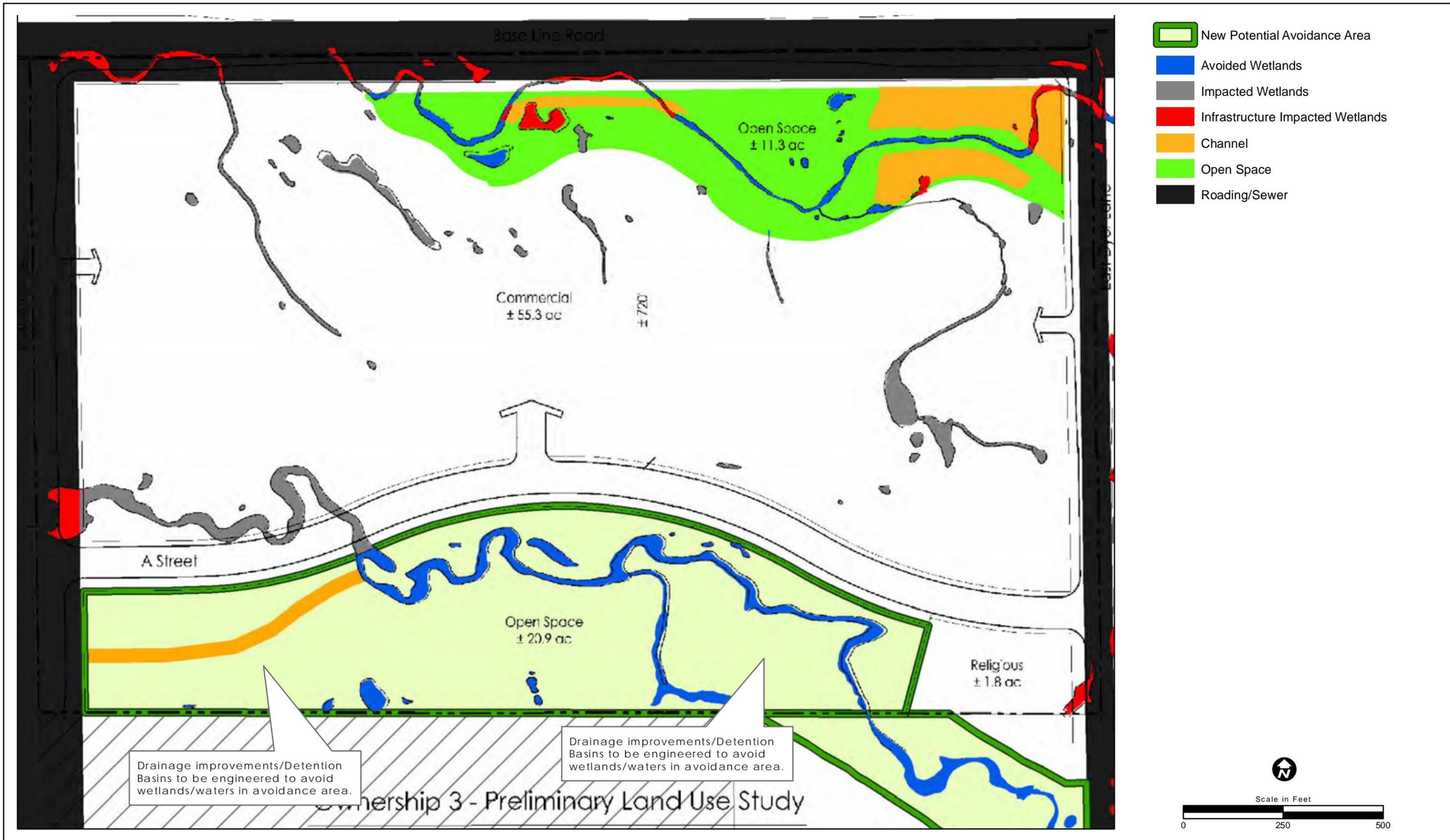
Alt. 3 Alternative 3 presents a modified land use plan for Property 16 located in the southwestern portion of the project site adjacent to Watt Avenue with land uses on the remainder of the project site unchanged from the Proposed Action. Under the alternative land use plan, an additional 48 acres (19.4 hectares) located within Property 16 would be designated open space, as shown in **Figure 3.4-9, Alternatives 3 and 4 (Properties 16 & 17) – Impact and Avoidance Areas**, and the filling of wetlands (approximately 4.9 acres [2.0 hectares]) present in this additional open space area would be avoided. Wetland impacts on the rest of the project site would be the same as under the Proposed Action. As a result, this alternative would involve filling 110.1 acres (44.6 hectares) of wetlands on the project site and 4.2 acres (1.7 hectares) of wetlands off-site for a total of 114.3 acres (46.3 hectares), as shown in **Table 3.4-8**. As with the Proposed Action and based on the significance criteria, the loss of these wetlands would be a **significant** effect of this alternative. Implementation of **Mitigation Measure BIO-1** would reduce effects to wetlands under Alternative 3 such that there would be no net loss of wetland area and functions. However without a detailed mitigation plan the USACE cannot fully evaluate this effect and has therefore assumed that it would remain potentially **significant**.



SOURCE: ECORP Consulting, Inc. – February 2012

FIGURE 3.4-7

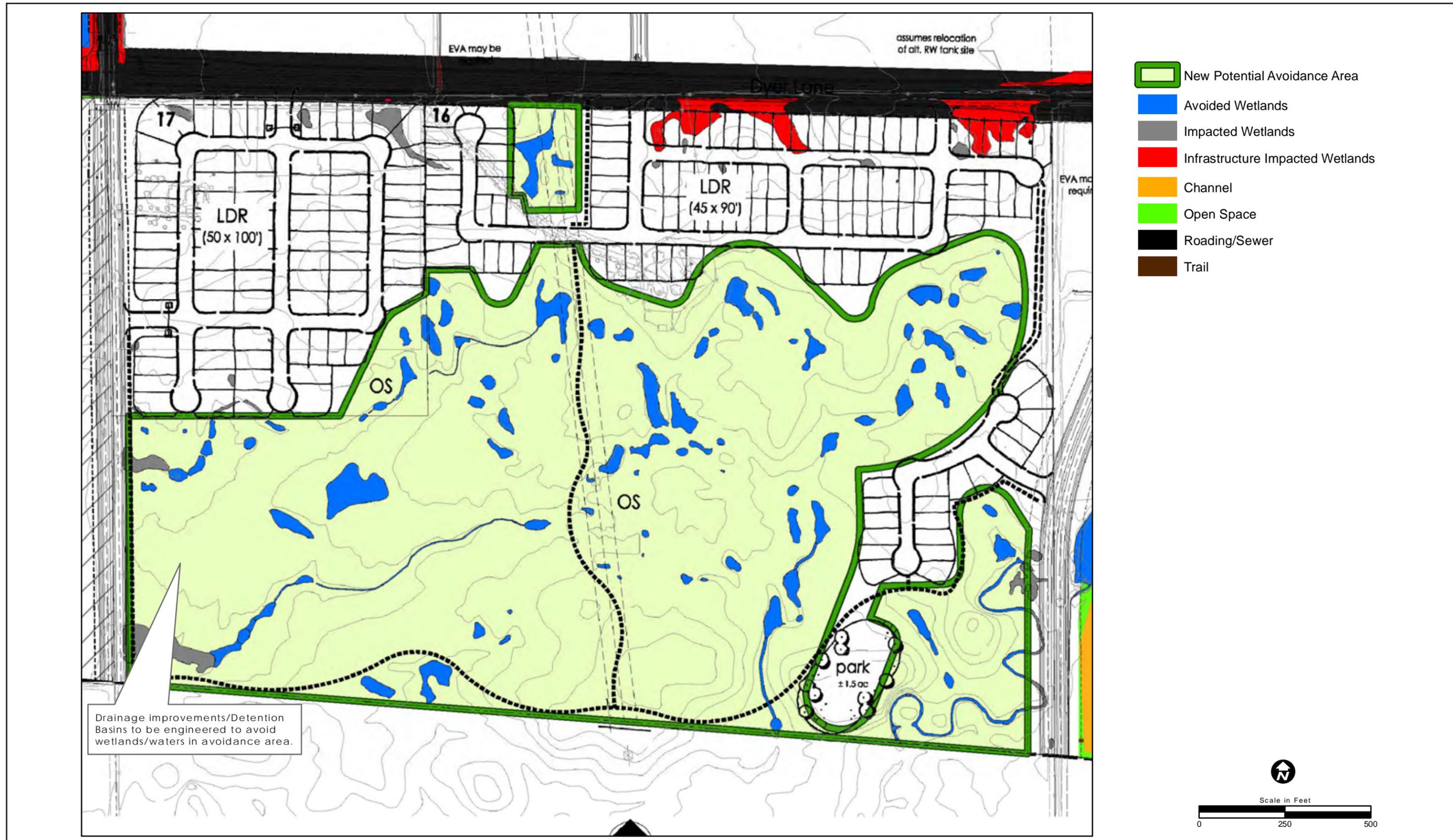
Alternative 1 (Property 1b) – Impact and Avoidance Areas



SOURCE: ECORP Consulting, Inc. – February 2012

FIGURE 3.4-8

Alternative 2 (Property 3) – Impact and Avoidance Areas



SOURCE: Ecorp Consulting, Inc. – February 2012

FIGURE 3.4-9

Alternatives 3 and 4 (Properties 16 & 17) – Impact and Avoidance Areas

- Alt. 4** Alternative 4 presents a modified land use plan for Property 17 located in the southwestern portion of the project site adjacent to Property 17 with land uses on the remainder of the project site unchanged from the Proposed Action. Under the alternate land use plan, an additional 2 acres (0.8 hectare) located within Property 17 would be designated as open space, as shown in **Figure 3.4-9, Alternatives 3 and 4 (Properties 16 & 17) – Impact and Avoidance Areas**, and the filling of wetlands (about 0.1 acre [0.04 hectare]) present in this additional open space area would be avoided. Wetland impacts on the rest of the project site would be the same as under the Proposed Action. As a result, this alternative would involve filling 114.9 acres (46.5 hectares) of wetlands on the project site and 4.2 acres (1.7 hectares) of wetlands off-site for a total of 119.1 acres (48.2 hectares), as shown in **Table 3.4-8**. As with the Proposed Action and based on the significance criteria, the loss of these wetlands would be a **significant** effect of this alternative. Implementation of **Mitigation Measure BIO-1** would reduce effects to wetlands under Alternative 4 such that there would be no net loss of wetland area and functions. However without a detailed mitigation plan the USACE cannot fully evaluate this effect and has therefore assumed that it would remain potentially **significant**.
- Alt. 5** Alternative 5 presents a modified land use plan for Property 23 located in the western portion of the project site adjacent to Locust Road with land uses on the remainder of the project site unchanged from the Proposed Action. Under the modified land use plan, an additional 19 acres (8 hectares) located within Property 23 would be designated as open space, as shown in **Figure 3.4-10, Alternative E (Property 23) – Impact and Avoidance Areas**, and the filling of wetlands (about 2.0 acres [0.8 hectare]) present in this preserved area would be avoided. Wetland impacts on the rest of the project site would be the same as under the Proposed Action. As a result, this alternative would involve filling 113.0 acres (45.7 hectares) of wetlands on the project site and 4.2 acres (1.7 hectares) of wetlands off-site for a total of 117.2 acres (47.4 hectares), as shown in **Table 3.4-8**. As with the Proposed Action and based on the significance criteria, the loss of these wetlands would be a **significant** effect of this alternative. Implementation of **Mitigation Measure BIO-1** would reduce effects to wetlands under Alternative 5 such that there would be no net loss of wetland area and functions. However without a detailed mitigation plan, the USACE cannot fully evaluate this effect and has therefore assumed that it would remain potentially **significant**.

Combined Alts. 1 through 5 Should all five alternatives (Alternatives 1 through 5) be implemented (Alternatives 1 through 5 combined), in addition to the areas designated as open space under the Proposed Action, an additional 90 acres (36 hectares) of land on the project site would be preserved as open space. As a result of the reduced footprint and focused avoidance of wetlands on the five properties, this alternative would involve filling 102.2 acres (41.4 hectares) of wetlands on the project site and 4.2 acres (1.7 hectares) of wetlands off-site for a total of 106.4 acres (43.1 hectares), as shown in **Table 3.4-8**. As with the Proposed Action and based on the significance criteria, the loss of these wetlands would be a **significant** effect of this alternative. Implementation of **Mitigation Measure BIO-1** would reduce effects to wetlands under Alternatives 1 through 5 combined so that there would be no net loss of wetland area and functions. However without a detailed mitigation plan, the USACE cannot fully evaluate this effect and has therefore assumed that it would remain potentially **significant**.

**Table 3.4-8
Proposed Action and Alternatives - Impacts to Waters of the United States (acres)**

Alternative	Development Footprint	Open Space	On-Site Impacts	Off-Site Impacts	Total Direct Impact
Proposed Action	4,521	709	115.1	4.2	119.3
No Action Alternative	3,297	1,933	0	0	0
Alternative 1	4,504	726	110.9	4.2	115.1
Alternative 2	4,516	714	112.2	4.2	116.4
Alternative 3	4,473	757	110.1	4.2	114.3
Alternative 4	4,519	711	114.9	4.2	119.1
Alternative 5	4,502	728	113.0	4.2	117.2
Combined Alternatives 1 through 5	4,431	799	102.2	4.2	106.4

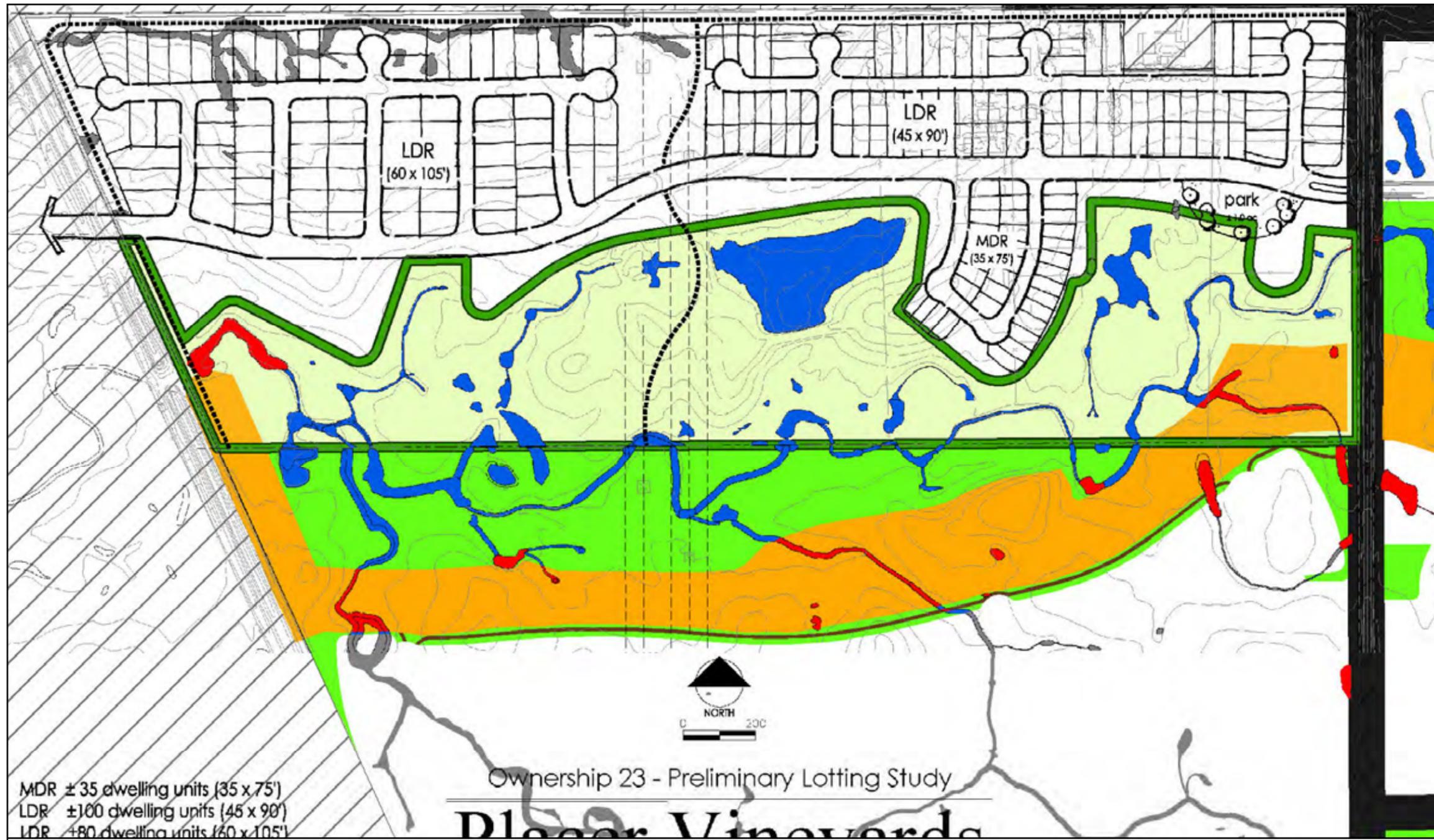
Source: ECORP, 2012b.

Mitigation Measure BIO-1:

Wetland Compensatory Mitigation

(Applicability – Proposed Action and Alternatives 1 through 5)

The Applicants shall prepare and present to the USACE a detailed mitigation plan that incorporates permittee-responsible preservation and/or restoration at an off-site location or purchase of constructed wetland creation/restoration credits and preservation credits by the Applicants. The USACE will evaluate the specifics of this plan to determine the actual mitigation requirements based on a number of factors, including but not limited to functions, location (watershed), change in surface area, uncertainty, or risk of failure, and temporal loss of function. The final mitigation requirements will be incorporated into the permit conditions.



- New Potential Avoidance Area
- Avoided Wetlands
- Impacted Wetlands
- Infrastructure Impacted Wetlands
- Channel
- Open Space
- Roading/Sewer

MDR ± 35 dwelling units (35 x 75')
 LDR ± 100 dwelling units (45 x 90')
 LDR ± 80 dwelling units (60 x 105')

Ownership 23 - Preliminary Lotting Study
Pleasant Vineyards



Scale in Feet



SOURCE: ECORP Consulting, Inc. - February 2012

FIGURE 3.4-10

Alternative 5 (Property 23) - Impact and Avoidance Areas

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

No Action Suitable habitat for listed vernal pool invertebrates such as vernal pool fairy shrimp and vernal pool tadpole shrimp is present on the project site and in some of the areas affected by the off-site infrastructure improvements. Invertebrate habitat is recognized here as all basin 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 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, seasonal wetland swales, drainage swales, and riverine seasonal wetlands.

Under the No Action Alternative, no aquatic resources would be filled. In addition to avoiding all waters of the US, the land use plan for the No Action Alternative would create a 50-foot (15-meter) buffer around all aquatic resources that would further protect the avoided resources. Therefore, there would be no direct impacts to vernal pool invertebrate habitat from development under the No Action Alternative. However, should construction activities occur within 250 feet (76 meters) of vernal pools and wetlands, the habitat value of the pools could decline. Furthermore, mass grading, stormwater drainage improvements, and impervious surfaces would likely change the hydrology and geomorphology of the avoided aquatic resources and their catchment areas. Furthermore, the development of the site under the No Action Alternative would fragment the vernal pool habitat and substantially change the landscape context in which these pools occur. For all of these reasons, development of the No Action Alternative could result in indirect effects on vernal pool crustaceans and their habitat. The indirect effect on vernal pool crustaceans and their habitat under the No Action Alternative would be a **significant** effect.

Although **Mitigation Measure BIO-2a** is available to avoid and reduce any indirect impacts of the No Action Alternative on avoided 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 (Base Plan and Blueprint Scenario) The Proposed Action would affect listed vernal pool invertebrates and their habitat, resulting in a **significant** impact on the species. Mitigation is proposed that would reduce the effect to a **less than significant** level.

The Proposed Action would directly affect vernal pool invertebrates and their habitat by grading and placing fill in these wetlands that provide suitable habitat for listed vernal pool species. Grading activities would result in invertebrate mortality and permanent loss of vernal pool species habitat. As shown below in **Table 3.4-10, Proposed Action Vernal Pool Invertebrate Aquatic Habitat Impacts**, of the 118.9 acres (48.1 hectares) of potential vernal

pool invertebrate aquatic habitat on the project site, the Proposed Action would directly affect about 97.2 acres (39.3 hectares) of potential aquatic habitat on-site and approximately 2.6 acres (1.1 hectares) off-site, for a total of about 100 acres (40.5 hectares) of impact. In addition, the Proposed Action would result in the removal of the existing land cover on the project site, including annual grassland areas within which the vernal pools and other seasonal wetlands and swales are embedded and are an element of the ecosystem that supports the vernal pool species.

Indirect effects include the alteration of natural topography and drainage patterns within the remaining open space within the project site, and perhaps wetlands on adjacent parcels. An increase in paved and other impermeable surfaces, summer irrigation, and changes in the rates of soil infiltration could potentially alter the hydrology of the open space area and adjacent parcels. Changing the average duration of inundation in seasonal wetlands adjacent to developed areas may adversely impact these areas. In addition, runoff from developed areas may result in contaminants and increased sedimentation in adjacent wetlands and/or waterways and cause a reduction in water quality.

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** effect of the Proposed Action.

As discussed under **Impact BIO-1** above, the Applicants have put forth a conceptual mitigation strategy that is intended to address impacts to wetlands and other waters of the U.S. The mitigation strategy, which is summarized in **Chapter 2.0**, puts forth a landscape approach to mitigation for loss of habitat and will provide both aquatic habitat for vernal pool invertebrates as well as upland habitat that would support the aquatic habitat and would address impacts to the species. However, as stated in **Impact BIO-1**, the USACE has examined the conceptual mitigation strategy and has determined that it will not be adequate to fully mitigate the impacts of the Proposed Action on the waters of the U.S. The USACE has therefore included **Mitigation Measure BIO-1** which will be implemented to mitigate the direct effects of the Proposed Action on waters of the U.S., including vernal pools and other seasonal depressional wetlands that provide habitat for vernal pool invertebrates. Direct impacts to potential vernal pool invertebrate habitat will be mitigated through preservation, and/or restoration, enhancement or creation of vernal pools or similar wetlands. Therefore **Mitigation Measure BIO-1** would also mitigate the Proposed Action's effects on the aquatic habitat of listed vernal pool invertebrates.

In addition, the USACE has determined that **Mitigation Measure BIO-2b** is also required to mitigate the Proposed Action's effects on listed vernal pool invertebrates. The mitigation measure stipulates that the conditions of the USFWS Biological Opinion be incorporated into the terms and conditions of the DA permits. With the implementation of these mitigation measures, the impact would be reduced to **less than significant**.

**Table 3.4-10
Proposed Action Vernal Pool Invertebrate Aquatic Habitat Impacts (acres)**

Wetland Type	Waters of U.S. on Project Site	Permit Area Impacts	Non-Permit Area Impacts*	Off-Site Impacts	Total Impact
Vernal Pool	32.6	27.5	0.0	0.2	27.7
Seasonal Wetland	42.8	39.6	1.4	2.2	43.2
Seasonal Wetland Swale	16.1	9.1	3.2	0.2	12.5
Drainage Swale	2.1	2.0	0.0	0.0	2.0
Riverine Seasonal Wetland	25.3	14.4	0.0	0.0	14.4
Total	118.9	92.6	4.6	2.6	99.8

Source: ECORP, 2012b.

* Includes Special Planning Area.

Alt. 1 Under Alternative 1, an additional 17 acres (7 hectares) of open space would be designated on the project site, avoiding impacts to an additional 2.5 acres (1 hectare) of vernal pool invertebrate habitat on the project site as compared to the Proposed Action. As shown in **Table 3.4-11, Vernal Pool Invertebrate Aquatic Habitat Direct Impacts**, Alternative 1 would directly impact 94.7 acres (38.3 hectares) of vernal pool invertebrate aquatic habitat on the project site and 2.6 acres (1.1 hectares) off-site for a total of 97.3 acres (39.4 hectares). The loss of vernal pool invertebrates and their habitat as a result of grading, filling, or indirect degradation would be a **significant** effect of the alternative.

Mitigation Measures BIO-1 and BIO-2b would reduce impacts on vernal pool invertebrate habitat by providing replacement aquatic habitat and preserving wetlands, and by implementing other mitigation as required by the USFWS. The impact would be reduced to **less than significant** with mitigation.

Alt. 2 Under Alternative 2, an additional 5 acres (2 hectares) of open space would be preserved, avoiding impacts to an additional 2.0 acres (0.8 hectare) of vernal pool invertebrate habitat on the project site as compared to the Proposed Action. As shown in **Table 3.4-11, Vernal Pool Invertebrate Aquatic Habitat Direct Impacts**, Alternative 2 would directly impact 95.2 acres (38.5 hectares) of vernal pool invertebrate habitat on the project site and 2.6 acres (1.1 hectares) off-site for a total of 97.8 acres (39.6 hectares). The loss of vernal pool invertebrates and their habitat as a result of grading, filling, or indirect degradation would be a **significant** effect of the alternative.

Mitigation Measures BIO-1 and BIO-2b would reduce impacts on vernal pool invertebrate habitat by providing replacement aquatic habitat and preserving wetlands, and by implementing other mitigation as required by the USFWS. The impact would be reduced to

less than significant with mitigation.

Alt. 3 Under Alternative 3, an additional 48 acres (19 hectares) of open space would be preserved, avoiding impacts to an additional 4.1 acres (1.7 hectares) of vernal pool invertebrate habitat on the project site as compared to the Proposed Action. As shown in **Table 3.4-11, Vernal Pool Invertebrate Aquatic Habitat Direct Impacts**, Alternative 3 would directly impact 93.1 acres (37.7 hectares) of vernal pool invertebrate habitat on the project site and 2.6 acres (1.1 hectares) off-site for a total of 95.7 acres (38.7 hectares). The loss of vernal pool invertebrates and their habitat as a result of grading, filling, or indirect degradation would be a **significant** effect of the alternative.

Mitigation Measures BIO-1 and BIO-2b would reduce impacts on vernal pool invertebrate habitat by providing replacement aquatic habitat and preserving wetlands, and by implementing other mitigation as required by the USFWS. The impact would be reduced to **less than significant** with mitigation.

Alt. 4 Under Alternative 4, an additional 2 acres (0.8 hectare) of open space would be preserved, avoiding impacts to an additional 0.1 acre (0.04 hectare) of vernal pool invertebrate habitat on the project site as compared to the Proposed Action. As shown in **Table 3.4-11, Vernal Pool Invertebrate Aquatic Habitat Direct Impacts**, Alternative 4 would directly impact 97.1 acres (39.3 hectares) of vernal pool invertebrate habitat on the project site and 2.6 acres (1.1 hectares) off-site for a total of 99.7 acres (40.3 hectares). The loss of vernal pool invertebrates and their habitat as a result of grading, filling, or indirect degradation would be a **significant** effect of the alternative.

Mitigation Measures BIO-1 and BIO-2b would reduce impacts on vernal pool invertebrate habitat by providing replacement aquatic habitat and preserving wetlands, and by implementing other mitigation as required by the USFWS. The impact would be reduced to **less than significant** with mitigation.

Alt. 5 Under Alternative 5, an additional 19 acres (8 hectares) of open space would be preserved, avoiding impacts to an additional 4.1 acres (1.7 hectares) of vernal pool invertebrate habitat on the project site as compared to the Proposed Action. As shown in **Table 3.4-11, Vernal Pool Invertebrate Aquatic Habitat Direct Impacts**, Alternative 5 would directly impact 93.1 acres (37.7 hectares) of vernal pool invertebrate habitat on the project site and 2.6 acres (1.1 hectares) off site for a total of 95.7 acres (38.7 hectares). The loss of vernal pool invertebrates and their habitat as a result of grading, filling, or indirect degradation would be a **significant** effect of the alternative.

Mitigation Measures BIO-1 and BIO-2b would reduce impacts on vernal pool invertebrate habitat by providing replacement aquatic habitat and preserving wetlands, and by implementing other mitigation as required by the USFWS. The impact would be reduced to **less than significant** with mitigation.

Combined Alts. 1 through 5 With implementation of Alternatives 1 through 5 combined, an additional 90 acres (36 hectares) of open space would be created on the project site, avoiding impacts to an additional 12.8 acres (5.2 hectares) of vernal pool invertebrate habitat on the project site as compared to the Proposed Action. As shown in **Table 3.4-11, Vernal Pool Invertebrate Aquatic Habitat Direct Impacts**, Alternatives 1 through 5 combined would directly impact 84.4 acres (34.1 hectares) of vernal pool invertebrate aquatic habitat on the project site and 2.6 (1.1 hectares) acres off site for a total of 87 acres (35.2 hectares). The loss of vernal pool invertebrates or their habitat as a result of grading, filling, or indirect degradation would be a **significant** effect of these alternatives combined.

Mitigation Measures BIO-1 and BIO-2b would reduce impacts on vernal pool invertebrate habitat by providing replacement aquatic habitat and preserving wetlands, and by implementing other mitigation as required by the USFWS. The impact would be reduced to **less than significant** with mitigation.

Table 3.4-11
Vernal Pool Invertebrate Aquatic Habitat Direct Impacts¹ (acres)

Alternative	Development Footprint	Open Space	On-Site Direct Impacts	Off-Site Direct Impacts	Total Direct Impact
Proposed Action	4,521	709	97.2	2.6	99.8
No Action Alternative	3,297	1,933	0	0	0
Alternative 1	4,504	726	94.7	2.6	97.3
Alternative 2	4,516	714	95.2	2.6	97.8
Alternative 3	4,473	757	93.1	2.6	95.7
Alternative 4	4,519	711	97.1	2.6	99.7
Alternative 5	4,502	728	93.1	2.6	95.7
Combined Alternatives 1 through 5	4,431	799	84.4	2.6	87.0

Source: ECORP, 2012a; ECORP, 2012b

¹ Habitat includes vernal pools, seasonal wetlands, seasonal wetland swales, drainage swales, and riverine seasonal wetlands.

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 USFWS.

Mitigation Measure BIO-2b: Secure Take Authorization for Federally Listed Vernal Pool Invertebrates and Implement Permit Conditions
(Applicability – Proposed Action, Alternatives 1 through 5)

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. 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, the BO conditions shall be incorporated into the terms and conditions of the DA permits. The Applicants shall abide by permit conditions (including conservation and minimization measures) intended to be completed before on-site construction.

The Applicants 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 Vernal pools on the project site represent potential habitat for five federally listed special-status plant species. Although focused special-status plant surveys were conducted on approximately 3,500 acres (1,416 hectares) of the project site 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. Furthermore, as discussed in **Subsection 3.4.2.7**, it is unlikely that vernal pool species such as slender orcutt grass, Sacramento Valley orcutt grass, and Hartweg’s golden sunburst would occur on the project site because the habitat on the site is marginal and there are no known occurrences of the species in Placer County. Nonetheless, because a substantial portion of the project site has not been surveyed to confirm absence of these plant species, if the species are present on the unsurveyed properties, implementation of the No Action Alternative could result in a **significant** effect on federally listed plant species.

Although **Mitigation Measure BIO-3** is available to avoid and reduce any impacts of the No Action Alternative on federally listed plant species, 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 effect of this alternative on federally listed plant species would remain **significant and unavoidable**.

Proposed Action (Base Plan and Blueprint Scenario), Alts. 1 through 5 For reasons presented above, implementation of the Proposed Action or Alternatives 1 through 5 (individually or combined) would have a **significant** effect on federally listed plant species.

Mitigation Measure BIO-3 requires surveys of properties that have not been surveyed for the plant species and the provision of compensatory mitigation by the Applicants in the event that the plants are discovered and removed by the proposed development. Implementation of the mitigation measure would reduce the impact to a **less than significant** level.

Mitigation Measure BIO-3: Mitigate for Loss of Federally Listed Plant Species
(Applicability –Proposed Action, Alternatives 1 through 5)

- *Prior to any ground disturbance on lands that have not been surveyed for federally listed plant species, a protocol survey will be completed by a qualified biologist during the blooming season to determine whether the species are present within the area of ground disturbance. If the species are not discovered, no further action is required.*
- *In the event that the species are discovered within the area to be disturbed and the population(s) cannot be avoided, the Applicants will comply with the conditions in the Biological Opinion (BO) issued by the USFWS.*

Impact BIO-4 Effects on Federally Listed Amphibians and Reptiles Species

No Action *California Red-legged Frog*

Marginally suitable habitat for California red-legged frog occurs along Dry Creek and Curry Creek, and the project site is in the historic range of the species. Therefore, the species has a potential to occur on the site. However, this species has not been observed within the portions of the project site that would be developed under the Proposed Action. Furthermore, the species is unlikely to occur because the project site is outside the range of previously recorded observations of California red-legged frog. In addition, reproducing populations of California red-legged frog have not been documented on the floor of the Central Valley since around 1947, and are considered to be extirpated. The nearest documented occurrence of this species is approximately 13 miles (21 kilometers) east of the site. As a result, the likelihood of this species occurring within the project site and in the area of infrastructure improvements is very low. Therefore, No Action Alternative is not likely to adversely affect this species. The effect of the No Action Alternative on California red-legged frog would be **less than significant**. No mitigation is required.

California Tiger Salamander

Marginally suitable habitat for California tiger salamander occurs on the project site and the project site is in the historic range of the species. Therefore, the species has a potential

to occur on the site. However, this species has not been observed within the project site. Furthermore the project site is outside the range of previously recorded observations for this species and the nearest documented occurrence of California tiger salamander is approximately 20 miles (32 kilometers) southwest of the project site. As a result, the likelihood of this species occurring within the project site and in the area of infrastructure improvements is very low and the No Action Alternative is not likely to adversely affect this species. The effect of the No Action Alternative on California tiger salamander would be **less than significant**. No mitigation is required.

Giant Garter Snake

The project site has not been surveyed for this species. However, suitable habitat for giant garter snake occurs on the project site and adjacent to it and within off-site improvement areas, and the project site is in the historic range of the species. Although there are no documented occurrences on the site, the nearest documented occurrence of this species is located approximately 1.2 miles (1.9 kilometers) west of the project site in the Natomas Basin. As such, the species has a potential to occur on the site and in the area of off-site improvements. Development on the project site and in the off-site infrastructure areas under the No Action Alternative has the potential to affect the species.

Most infrastructure construction is temporary and surface conditions would generally be returned to their original condition. However, roadway and intersection improvements are expected to result in a small amount of potential habitat conversion. Similarly, some habitat conversion would also occur on the project site. Direct effects to giant garter snake due to the No Action Alternative could include loss of both potential breeding and aestivation habitat. The development of upland habitat could also cause direct mortality to aestivating snakes by the crushing and collapsing of burrows by construction machines. Indirect effects include increased sedimentation to their aquatic habitats, reduction in the quality of water, and changes in water temperature that may prohibit giant garter snake activity. In addition, increased human activity in the area may increase the likelihood of predators and other human-related disturbances (e.g., increased traffic-related mortalities) to giant garter snakes. This would be a **significant** effect.

Although **Mitigation Measure BIO-4a** is available to avoid and reduce any indirect impacts of the No Action Alternative on giant garter snake, 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 giant garter snake would remain **significant and unavoidable**.

Proposed Action (Base Plan and Blueprint Scenario) As discussed above, although the project site contains marginally suitable habitat for California red-legged frog and California tiger salamander, both species have not been observed on the site and are not expected to occur there. Therefore, the Proposed Action would result in a **less than significant** impact on these two species. No mitigation is required.

With respect to giant garter snake, suitable habitat for the species occurs on-site and in drainages near the sites of roadway and intersection improvements as well as in Dry Creek. Therefore, construction of the Proposed Action, which includes on-site development as well as off-site infrastructure improvements, would have the potential to adversely affect giant garter snake. As with the No Action Alternative, the effect of the Proposed Action on this species would be **significant**. **Mitigation Measure BIO-4b** would mitigate impacts on giant garter snake to a **less than significant** level.

Alts. 1 through 5 As discussed above, California red-legged frog and California tiger salamander are not likely to occur on the project site or in the area of off-site infrastructure improvements. Therefore Alternatives 1 through 5 (individually or combined) would result in a **less than significant effect** on these species. No mitigation is required.

However, on-site development and off-site infrastructure improvements which would also be required for Alternatives 1 through 5 (individually or combined) have the potential to affect giant garter snake. Therefore, as with the No Action Alternative and the Proposed Action, the effect of Alternatives 1 through 5 on giant garter snake would be **significant**. **Mitigation Measure BIO-4b** would mitigate impacts on giant garter snake to a **less than significant** level.

Mitigation Measure BIO-4a: **Secure Take Authorization for Federally Listed Giant Garter Snake**
(*Applicability – No Action*)

No project construction shall proceed in areas supporting potential habitat for federally listed giant garter snake until a BO and incidental take permit has been issued by USFWS.

Mitigation Measure BIO-4b: **Secure Take Authorization for Federally Listed Giant Garter Snake and Implement Permit Conditions**
(*Applicability – Proposed Action, Alternatives 1 through 5*)

If a BO is required, no project construction shall proceed until a BO has been issued by the USFWS. The USACE will consult with the USFWS and incorporate the BO conditions into the terms and conditions of the DA permits. The Applicant(s) will abide by permit conditions (including conservation and minimization measures) intended to be completed before on-site construction.

Impact BIO-5 Effects on Valley Elderberry Longhorn Beetle

No Action The potential effects of the No Action Alternative on Valley elderberry longhorn beetle (VELB), a federally listed species, depend on the existence of elderberry shrubs within the project site. Focused field surveys conducted on approximately 935 acres of the project site have not detected any elderberry shrubs (ECORP 2012b). However, elderberry shrubs could occur on properties that have not been surveyed. Because the presence/absence of elderberry shrubs has not been determined on the un-surveyed portions of the site, development within these areas, which would occur under the No Action Alternative, could require the removal of elderberry shrubs and result in a **significant** effect on VELB and/or its habitat.

Although **Mitigation Measure BIO-5a** is available to avoid and reduce any indirect impacts of the No Action Alternative on VELB, 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 VELB would remain **significant and unavoidable**.

Proposed Action As noted above, elderberry shrubs could occur on properties that have not been surveyed. Because the presence/absence of elderberry shrubs has not been determined on the un-surveyed portions of the site, development within these areas could require the removal of elderberry shrubs and result in a **significant** effect on VELB if the species is present in the shrubs to be removed or by removing potential VELB habitat. **Mitigation Measure BIO-5b** would mitigate this effect to a **less than significant** level.

Alts. 1 through 5 For the same reasons presented above for the No Action Alternative and the Proposed Action, Alternatives 1 through 5 (individually or combined) could result in a significant effect on VELB and the same mitigation measure (**Mitigation Measure BIO-5b**) would reduce the effect to a **less than significant** level.

Mitigation Measure BIO-5a: **Secure Take Authorization for Federally Listed VELB**
(*Applicability – No Action*)

No project construction shall proceed in areas supporting habitat for federally listed valley elder berry longhorn beetle until a BO and incidental take permit has been issued by USFWS.

Mitigation Measure BIO-5b: **Secure Take Authorization for Federally Listed VELB and**
Implement Permit Conditions
(*Applicability – Proposed Action, Alternatives 1 through 5*)

If a BO is required, no project construction shall proceed until a BO has been issued by the USFWS. The USACE will consult with the USFWS and incorporate the BO conditions into the terms and conditions of the DA permits. The Applicant(s) will abide by permit conditions (including conservation and minimization measures) intended to be completed before on-site construction.

Impact BIO-6 Effects on Delta Smelt

No Action Delta smelt occurs in open surface waters and shoal areas of rivers. Except for a small section of Dry Creek, potential habitat for Delta smelt is not present on the project site. No occurrences of Delta smelt are reported from the Dry Creek watershed and the nearest documented occurrence is about 29 miles from the project site. Therefore, the development of the project site under the No Action Alternative would not result in any direct effects to Delta smelt. The impact would be **less than significant**. Indirect effects on fish species are discussed below under Impact BIO-12 and BIO-13.

Proposed Action (Base Plan and Blueprint Scenario), Alts. 1 through 5 For the same reasons presented above for the No Action Alternative, implementation of the Proposed Action or Alternatives 1 through 5 (individually or combined) would have a **less than significant** direct effect on Delta smelt. No mitigation is required.

Impact BIO-7 Effects on State Special-Status Plant and Wildlife Species

No Action *Special-Status Plants*

As discussed in **Section 3.4.2.10**, vernal pools on the project site represent potential habitat for special-status plant species. Although focused special-status plant surveys were conducted during the blooming period for all special-status plant species likely to occur in the area, no state special-status plant species were observed on the project site. As there are no state special-status plant species known to or likely to occur on the project site, implementation of the No Action Alternative would not affect state special-status plant species. The effect of the No Action Alternative on state special-status plant species would be **less than significant**. No mitigation is required.

Western Pond Turtle

No western pond turtles were found during surveys of the project site. However, potential habitat for western pond turtle likely occurs on the properties surveyed and could occur on properties requiring additional resource identification. However, the No Action Alternative would not result in development in areas with aquatic resources that could support western pond turtles. The effect on the species would be **less than significant**. No mitigation is required.

**Proposed
Action (Base
Plan and
Blueprint
Scenario)**

Special Status Plants

As there are no state special-status plant species known to or likely to occur on the project site, implementation of the Proposed Action would not affect state special-status plant species. The effect would be **less than significant**. No mitigation is required.

Western Pond Turtle

As noted above, no pond turtles were found during surveys of the project site. However, potential habitat for western pond turtle likely occurs on the properties surveyed and could occur on properties requiring additional resource identification. Removal of habitat for this species would be a **significant** effect of the Proposed Action. **Mitigation Measure 4.4-4** in the PVSP EIR was adopted by Placer County at the time of the approval of the PVSP (Proposed Action Base Plan scenario) to address this impact and will be enforced by the County. Although the Blueprint scenario was evaluated for its impacts in the PVSP EIR by the County, that scenario was not approved by the County and therefore **Mitigation Measure 4.4-4** was not imposed by the County on that scenario. The USACE assumes that Placer County would impose the same mitigation measure on the Proposed Action Blueprint scenario to address this effect.

The mitigation measure requires a focused survey to determine the presence or absence of this species. If pond turtles are found on the properties surveyed, locations of these occurrences shall be mapped and a detailed mitigation/conservation plan that provides for “no net loss” of individuals of the species or its habitat shall be developed and implemented. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that this effect would be reduced to **less than significant**.

**Alts. 1
through 5**

Special Status Plants

As discussed above, the project site does not support state special-status plant species. Therefore the effect of Alternatives 1 through 5 (individually or combined) on state special-status plant species would be **less than significant**. No mitigation is required.

Western Pond Turtle

Alternatives 1 through 5 (individually or combined) would result in similar direct and indirect impacts on western pond turtle habitat as described above for the Proposed Action. Based on the significance criteria and for the reasons presented above, the effect on western pond turtle would be **significant**. **Mitigation Measure 4.4-4** would mitigate the effect. As noted above, this mitigation measure was adopted by Placer County at the time of the approval of the PVSP. The USACE assumes that Placer County would impose the same mitigation measure on Alternatives 1 through 5 individually or combined to address this effect. Placer County concluded in the case of the Proposed Action that with this mitigation, the effect will be reduced to a less than significant level. The USACE

agrees with the conclusion in the PVSP EIR and finds that this effect of Alternatives 1 through 5 individually or combined would similarly be reduced to **less than significant**.

PVSP EIR Mitigation Measure 4.4-4: Western Pond Turtle

(Applicability – Proposed Action, Alternatives 1 through 5)

Construction shall be designed to avoid impacts to potential habitat for western pond turtle, if feasible. If construction is required in areas of potential habitat, then a focused survey for this species shall be conducted prior to approval of engineering plans. The survey is required to determine the presence or absence of this species on the properties surveyed. If pond turtles are found on the properties surveyed, locations of these occurrences shall be mapped.

A detailed mitigation/conservation plan that provides for “no net loss” of individuals of the species or its habitat shall be developed upon confirming the presence of this species on the properties surveyed. If this species is not found on the properties surveyed, no further studies are necessary.

*The replacement of western pond turtle habitat required by this measure could be partially or entirely included within **Mitigation Measure 4.4-1**, to the extent that the mitigation area includes areas appropriate for western pond turtle.*

Impact BIO-8 Effects on Protected Raptor Species and Other Nesting Birds

No Action 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** effect. However, with mitigation the effect would be **less than significant**.

Grassland and trees within the project site provide suitable foraging habitat and nesting sites for several protected raptor species. 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.

Burrowing Owl

Burrowing owl has not been recorded within the properties surveyed, but potential foraging and nesting habitat for burrowing owls is present on the project site. Burrowing owl nests could be established in the future. Burrowing owls nest in burrows, so site preparation activities could destroy or damage a nest, or disturb nesting owls. The disruption of nesting burrowing owls would be a **significant** effect.

Mitigation Measure 4.4-5 in the PVSP EIR was adopted by Placer County at the time of the approval of the PVSP to address the Proposed Action Base Plan’s effect on burrowing owls.

The USACE assumes that Placer County would impose the same mitigation measure on the No Action Alternative to address this effect. The mitigation measure requires a pre-construction survey for burrowing owl nests, and if active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. The mitigation measure also provides for passive relocation of burrowing owls and compensatory mitigation for loss of habitat. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that this effect would be reduced to **less than significant**.

Swainson's Hawk

Although no Swainson's hawk nests have been observed within the project site, they have been recorded within 1 mile (2 kilometers) of the project site. Swainson's hawks are known to nest within 10 miles (16 kilometers) of foraging habitat. Since the majority of the project site would be considered potential foraging habitat, development of the No Action Alternative would eliminate grassland foraging habitat for this species. Removal of potential foraging habitat and nesting trees for Swainson's hawk would be a **significant** effect. 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. **Mitigation Measure 4.4-1b** in the PVSP EIR was adopted by Placer County at the time of the approval of the PVSP to address the Proposed Action Base Plan's effect on Swainson's hawk habitat. This mitigation measure has been incorporated by the Applicants in their proposed mitigation strategy. The USACE assumes that Placer County would impose the same mitigation measure on the No Action Alternative to address this effect. The mitigation measure requires preservation of off-site foraging habitat at ratios recommended by the CDFW: 1:1 for each acre lost within 1 mile (2 kilometers) of a nest, 0.75:1 for each acre lost within 1 to 5 miles (2 to 8 kilometers) of a nest, and 0.5:1 for each acre lost within 5 to 10 miles (8 to 16 kilometers) of a nest. It also requires that any Swainson's hawk nesting trees that are removed be replaced at a 15:1 ratio in areas suitable for Swainson's hawk foraging and nesting. This measure would ensure that there is "no net loss" of nesting trees over time. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effect of the No Action Alternative on Swainson's hawk would be reduced to a **less than significant** level with mitigation.

Other Raptors and Nesting Birds

Raptors, including red-tailed hawk, white-tailed kite, and great horned owl, are likely to nest within the project site. Special-status species surveys within the project site documented the presence of one potentially active raptor nest in a small tree along the seasonal marsh area in the south-central portion of the project site. Other nests could be established over time. If an active nest is located in a tree slated for removal or pruning, the

nest could be lost and any eggs or young could be destroyed. The No Action Alternative could result in removal of nest trees. As mentioned above, all raptors are protected under the Federal Migratory Bird Treaty Act and Section 3503.5 of the California Fish and Game Code. In addition, construction activities near active nests could disturb nesting raptors, and result in the abandonment of a nest. Consequently, construction near trees containing active nests could result in a **significant** effect. Similarly, Tricolored blackbird and Loggerhead shrike, while not observed on-site, could nest and forage within sections of the project site. Ground disturbing activities and tree removal for project implementation 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** effect. **Mitigation Measures 4.4-7 and 4.4-8** in the PVSP EIR were adopted by Placer County at the time of the approval of the PVSP to address the Proposed Action Base Plan's effects on raptors and nesting birds. The USACE assumes that Placer County would impose the same mitigation measure on the No Action Alternative to address this effect. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effect on raptors would be reduced to a **less than significant** level with mitigation.

Proposed Action (Base Plan and Blueprint Scenarios) Ground disturbing activities, which would remove approximately 3,520 acres (1,425 hectares) of grassland foraging habitat, and tree removal for the development of the Proposed Action (both scenarios) would also affect potential nesting habitat of protected bird species in a manner described above for the No Action Alternative. These would be **significant** effects of the Proposed Action. **Mitigation Measures 4.4-1b, 4.4-5, 4.4-7 and 4.4-8** in the PVSP EIR were adopted by Placer County at the time of the approval of the PVSP to address the Proposed Action Base Plan's effect on burrowing owls, Swainson's hawk, other raptors, and nesting birds. These measures require avoidance and protection of active nest sites. The USACE assumes that Placer County would impose the same mitigation measures on the Proposed Action Blueprint scenario to address these effects. Placer County concluded that with these mitigation measures, the effects will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effect on burrowing owls, Swainson's hawk, other raptors, and nesting birds would be reduced to a **less than significant** level with mitigation.

Alts. 1 through 5 Ground disturbing activities and tree removal for the development of Alternatives 1 through 5 (individually or combined) would also affect potential nesting habitat and foraging habitat of protected bird species in a manner described above for the No Action Alternative. These would be **significant** effects. The USACE assumes that Placer County would impose the same mitigation measures (**Mitigation Measures 4.4-1b, 4.4-5, 4.4-7, and 4.4-8**) on these alternatives to address these effects. Placer County concluded that with this

mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effects of Alternatives 1 through 5, individually or combined, on burrowing owls, Swainson's hawk, other raptors, and nesting birds would be reduced to a **less than significant** level with mitigation.

PVSP EIR Mitigation Measure 4.4-5: Burrowing Owl
(Applicability – Proposed Action and All Alternatives)

When construction is proposed during the burrowing owl breeding season (April- September), a focused survey for burrows shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify any active burrows. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Burrows that must be removed as a result of Specific Plan implementation shall be removed during the non-breeding season (October to March). If no active nests are found during the focused survey, no further mitigation will be required.

If burrows are removed as a result of implementation and there is suitable habitat on-site, on-site passive relocation shall be required. Owls will be encouraged to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 meters from the impact zone and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls. Relocation of owls should only be implemented during the non-breeding season. On-site habitat shall be preserved in a conservation easement and managed to promote burrowing owl use of the site.

If there is not suitable habitat on-site, off-site passive relocation shall be required. Off-site habitat must provide suitable burrowing owl habitat. Land shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. Off-site mitigation shall use one of the following ratios:

- 1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.6 (9.75) acres per pair or single bird.*
- 2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.*
- 3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.*

The replacement of burrowing owl habitat required by this measure could be partially or entirely included within Mitigation Measure 4.4-1, to the extent that the mitigation area includes areas appropriate for burrowing owl.

PVSP EIR Mitigation Measure 4.4-1b: Swainson's Hawk***(Applicability – Proposed Action and All Alternatives)***

Swainson's hawk foraging habitat shall be mitigated according to California Department of Fish and Game Guidelines: 1 acre for each acre lost within 1 mile of a nest, 0.75 acre for each acre lost within one to 5 miles of a nest, and 0.5 acre lost within 5 to 10 miles of a nest, unless otherwise addressed through the Placer County Conservation Plan (PCCP). Additionally, the applicant shall be required to obtain a CESA take permit for any nest tree that may be removed as part of any proposed construction under the Specific Plan. Additional mitigation measures for the loss of active nest trees shall include planting of suitable nest trees at a 15:1 ratio on suitable foraging habitat areas within west Placer County.

PVSP EIR Mitigation Measure 4.4-7 and**PVSP EIR Mitigation Measure 4.4-8: Other Bird Species, including Raptors, Loggerhead shrike and Tricolored blackbird*****(Applicability – Proposed Action and All Alternatives)***

Non Raptor Species: *Prior to construction activities, a focused survey for non-raptor special status bird nests and/or nesting colonies shall be conducted by a qualified biologist within 30 days prior to the beginning of construction activities in order to identify active nests within the construction area. If active nests are found, no construction activities shall take place within 500 feet of the nest and/or nesting colony until the young have fledged. The biologist shall consult with the CDFW, particularly with respect to vegetation removal as a result of project construction. If no active nests and/or nesting colonies are found during the focused survey, no further mitigation will be required.*

This measure would ensure that nests and/or nesting colonies are avoided when active, so that eggs and young would be protected. Once the young have fledged their nests, the nests can be removed without harm to the birds.

Raptor Species: *When construction is proposed during the raptor breeding season (March to early September), a focused survey for raptor nests shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests on-site. If active nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged. Trees containing nests shall be removed during the non-breeding season (late September to March). If no active nests are found during the focused survey, no further mitigation will be required. This measure will ensure that active nests are not moved or substantially disturbed during the breeding season, so that raptor eggs and young are not destroyed or abandoned as a result of construction.*

Impact BIO-9 Effects on Special-Status Bats

No Action, Proposed Action, Alts. 1 through 5	No Action Alternative, Proposed Action and Alternatives 1 through 5 (individually or combined) could result in a significant effect on special-status bat species. However, with mitigation the effect would be less than significant .
	Three special-status bats potentially occur on 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. These species of bats could occupy structures (such as bridges) located within the project site or in the area of off-site infrastructure improvements. Construction activities could destroy roosting sites and/or disturb roosting bats, which would be a **significant** effect. **Mitigation Measure 4.4-9** in the PVSP EIR was adopted by Placer County at the time of the approval of the PVSP to address the Proposed Action Base Plan's effect on special-status bat species. The USACE assumes that Placer County would impose the same mitigation measure on the No Action Alternative, the Proposed Action Blueprint scenario, or Alternatives 1 through 5 (individually or combined) to address this effect. The mitigation measure requires a pre-construction survey for bat roosts, and if roosts are found, implementation of appropriate steps to avoid impacts. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effect on special-status bats would be reduced to a **less than significant** level with mitigation.

PVSP EIR Mitigation Measure 4.4-9: Roosting Bats
(Applicability – Proposed Action and All Alternatives)

Prior to construction, a qualified biologist shall survey any affected structures for evidence of bat roosts (e.g., bat guano). If roosts are found, they shall be removed in April, September, or October in order to avoid the hibernation and maternity seasons. Appropriate exclusion methods will be used, as needed, during habitat removal.

The initial assessment will involve looking for bats or bat signs such as guano, urine staining, and culled food parts, and will identify those specific locations that represent potential habitat (i.e., which specific buildings, trees, bridges could support roosting bats). If no potential habitat is identified or no potential habitat will be affected (i.e., removed), no further measures are required.

Bat habitat can be removed with minimal impact to the resident bat population if it is done outside of the hibernation season (November through March) and outside of the maternity season (May through August). During the removal period, a roost exit survey shall be conducted prior to habitat removal. If bats are detected, standard humane exclusion methods shall be implemented (e.g., placing plastic over roost entrance areas such that bats can exit the roost but not return). Exclusion shall be conducted for two nights prior to habitat removal and habitat removal shall occur immediately following implementation of these exclusion measures. If there is a delay, then the exclusion measures shall be repeated. During the maternity season (May through August), habitat removal may occur following a roost exit survey that confirms no bats are present; however, if bats are detected they may not be excluded until the end of the maternity season. During the hibernation season (November through March), bats do not exit the roost, so exit surveys cannot be used to assess presence and removal shall be delayed to the end of this period.

If bats must be excluded, the project proponent shall work with a qualified biologist to determine if any additional steps (such as installation of alternative roost habitat in the form of bat boxes) are appropriate for the particular habitat. Determination of these additional measures will depend on the species present and their specific ecological preferences/requirements. Other steps could include improvement of other avoided bat habitat or design of new project elements such as bridges to be "bat-friendly."

Impact BIO-10 Effects on Wildlife Movement

No Action, Proposed Action (Base Plan and Blueprint Scenario), Alts. 1 through 5

Development of the No Action Alternative could impede the movement of wildlife by disturbing and/or blocking local movement corridors. Similarly, site development under the Proposed Action and Alternatives 1 through 5 would also have the potential to impede wildlife movement. The effect would be **significant**. However, with mitigation the effect would be **less than significant**.

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.

Development of the project site under any of the alternatives could impede the movement of wildlife by disturbing and/or blocking local movement corridors. Additionally, many of those species that would normally use the grasslands as a foraging area would not as easily move across the future urbanized landscapes. Wildlife species that are adapted to live in grasslands or that move between isolated pockets of water would not easily move across the future urbanized landscapes and would be displaced, and/or concentrate their movements within the remaining open space. With development of the site, wildlife would be naturally restricted to the remaining areas of designated

open space such as streams and the transmission line corridors. Thus, the creeks and the transmission corridors would become wildlife corridors through the urbanized landscape.

The introduction of outdoor lighting can also have a negative effect on wildlife by interfering with nocturnal movement and causing disorientation, making individuals more vulnerable to predation or making it more difficult for them to capture prey. Passive recreational use along nature or bicycle trails may also have indirect impacts such as interfering with foraging, breeding, or movement.

The direct and indirect effects on wildlife movement would be **significant** effects.

Mitigation Measure BIO-10 would reduce the effect on wildlife movement to a **less than significant** level.

Mitigation Measure BIO-10: Wildlife Movement Protection Policies
(Applicability –Proposed Action, and All Alternatives)

To protect the long-term habitat of the stream channels and the transmission line corridors and their potential use by wildlife as movement corridors, the Applicant(s) shall ensure that movement corridors are not obstructed and human intrusion into the corridor is minimized. These measures shall include, but not be limited to: the use of either bridges or culverts large enough that wildlife have enough space to pass through road crossings without having to travel over the road surface, the implementation of bank stabilization measures, and/or restoration and revegetation of stream corridor habitat that has been damaged due to the project's construction. Furthermore, the recreational trails shall be lined by post and cable fence and signage shall be used to direct trail users to stay within the designated trail corridor and discourage access to the riparian habitat by humans and pets. The trails shall be closed after dark and exterior lighting on the trail shall be minimized to the extent acceptable to the County.

Impact BIO-11 Loss of Riparian Habitat

No Action The No Action Alternative would not result in the removal of riparian habitat as no activities that would affect waters of the U.S. would occur under this alternative on the project site or in the area of off-site infrastructure improvements. Any removal of riparian habitat would be minimal. The effect on riparian habitat would be **less than significant**. No mitigation is required.

Proposed Action (Base Plan and Blueprint Scenario) Riparian habitat occurs along some minor streams and along Dry Creek. No direct adverse effects are anticipated within the project site because the riparian habitat associated with Dry Creek, the riverine seasonal marsh/riparian system in the southern portion of the project site (i.e., Property 19), and the intermittent stream/riparian unit between Properties 4 and 7 would all be located in areas designated open space and therefore these riparian areas would not be altered or removed. The Proposed Action development footprint avoids impacts to Dry Creek riparian habitat by designating open space adjacent to the riparian corridor and is consistent with the 100-foot (30-meter)

setback from perennial streams required by the General Plan. The Proposed Action includes approximately 35 acres (14 hectares) of oak woodland to be preserved along the upstream portion of its adjacency with Dry Creek. This oak woodland would represent a wide node of high quality wildlife habitat in the Dry Creek corridor that would provide migratory linkage with other nodes, both upstream and downstream. Given these considerations, indirect effects resulting from encroachment of the Proposed Action would be **less than significant**.

Impacts could, however, occur in infrastructure areas, including widening associated with the Watt Avenue bridge at Dry Creek. Construction of stream crossings such as the Watt Avenue bridge could result in the disturbance of stream channels and loss of riparian habitat. Both the State of California (FGC 1601) and the Placer County General Plan have identified streams and riparian areas as important natural resources (see General Plan Policies 6.C.1, 6.C.5, 6.C.9, 6.D.3, 6.D.7, 6.D.14, 6.E.1, and 6.E.2). This would be a **significant** effect. **Mitigation Measures 4.4-12a** and **4.4-12b** in the PVSP EIR were adopted by Placer County at the time of the approval of the PVSP to address the Proposed Action Base Plan's impact on riparian habitat. The USACE assumes that Placer County would impose the same mitigation measure on the Proposed Action Blueprint scenario to address this effect. The mitigation measures require that a streambed alteration agreement be obtained for any work in the streams and compliance with permit conditions. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effect on riparian habitat would be reduced to a **less than significant** level with mitigation.

**Alts. 1
through 5**

Implementation of Alternatives 1 through 5, individually or combined, would result in similar effects to riparian habitat as discussed above for the Proposed Action. These alternatives would not directly affect on-site riparian habitat, but construction of stream crossings at Dry Creek would result in a **significant** effect. As noted above, **Mitigation Measures 4.4-12a** and **4.4-12b** in the PVSP EIR were adopted by Placer County at the time of the approval of the PVSP to address this effect. The USACE assumes that Placer County would impose the same mitigation measure on the alternatives to address this effect. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effect on riparian habitat would be reduced to a **less than significant** level with mitigation.

PVSP EIR Mitigation Measure 4.4-12a and**PVSP EIR Mitigation Measure 4.4-12b: Riparian Habitat***(Applicability – Proposed Action, Alternatives 1 through 5)*

Prior to the issuance of a grading permit, a Streambed Alteration Agreement shall be obtained from CDFW, pursuant to Section 1600 et seq. of the California Fish and Game Code, for each stream crossing and any other activities affecting the bed, bank, or associated riparian vegetation of the stream. If required, the project applicant shall coordinate with CDFW in developing appropriate mitigation, and shall abide by the conditions of any executed agreements. All stream crossings shall be performed using a “jack and bore” construction technique, unless otherwise specified by CDFW. Streambed Alteration Agreement measures to protect the channel bank of a stream from erosion and related effects of construction shall be included in all related construction contracts.

Implement EIR Mitigation Measure 4.4-1 as it pertains to riparian habitat. Mitigation Measure 4.4-1 requires replacement of all riparian trees removed to accommodate development. New trees and shrubs must be planted within existing riparian areas or improved drainage corridors. The replacement ratios exceed 1:1 in order to ensure that over the long-term the value of new riparian habitat equals or exceeds the value of the habitat that was lost. As an alternative, once the Placer County Conservation Plan is adopted, project applicants may participate in the PCCP, to the extent that it provided adequate mitigation for impacts on riparian areas.

Additional steps shall be taken for properties that require more detailed resource identification prior to development, including: wetlands delineated and submitted to the USACE, habitat types mapped, and special-status species determined to be or potentially be within the Plan area with protocol surveys conducted if required.

Impact BIO-12 Effects on Special-Status Fish Species

No Action The No Action Alternative would not result in removal of fish habitat as no discharge of dredged or fill material into waters of the U.S. would occur under this alternative. The effect on fish species would be **less than significant**. No mitigation is required.

With respect to indirect effects on fish species through discharge of site stormwater, those effects are also expected to be less than significant. About 600 acres of the Plan area currently drain to Dry Creek. Of these 600 acres, a small portion would be developed with residential and commercial uses under the No Action Alternative with the majority of the area remaining as open space along Dry Creek, and in other parts of the site. To comply with Placer County requirements, it would be required that runoff from the developed land be treated by stormwater treatment facilities such as oil/grit separators, water quality basins, grassy swales, and other structural BMPs before discharge into the creek, all of which would reduce the pollutants including sediment present in the runoff so that water quality in the creek would not be adversely affected. Similarly, construction activities would be subject to applicable federal and state water quality protection requirements, contained in the state NPDES permit for stormwater discharges associated with construction activities. The indirect effect would be **less than significant**. No mitigation is required.

**Proposed
Action (Base
Plan and
Blueprint
Scenario)**

On-Site

The portion of Dry Creek located along the southeastern boundary of the project site provides potential habitat for Chinook salmon and steelhead. The listed Chinook salmon (spring- and winter-run) do not occur in Dry Creek. The Proposed Action includes an open space buffer along the portion of the creek within the project site and would not involve any construction within or adjacent to the creek that could remove habitat potentially occurring there. Therefore, direct effects to fish species from on-site development would be less than significant. No mitigation is required.

With respect to indirect effects on fish species through discharge of site stormwater, those effects are also expected to be less than significant. Of the 600-acre portion of the Plan area that drains to Dry Creek, about 462 acres are planned for residential and commercial development under the Proposed Action with the remaining area (about 138 acres) remaining as open space along Dry Creek, a park, and religious/public services. Runoff from the developed land would have the potential to affect water quality in Dry Creek. However, in compliance with Placer County requirements, urban runoff generated by the new development would be treated via stormwater treatment facilities such as oil/grit separators, water quality basins, grassy swales, and other structural BMPs before it would be discharged into the creek, all of which would reduce the pollutants present in the runoff, including sediment, so that water quality in the creek would not be adversely affected.

With respect to water quality effects from construction-site runoff, construction activities would be subject to applicable federal and state water quality protection requirements, contained in the state NPDES permit for stormwater discharges associated with construction activities. The indirect effect would be **less than significant**. No mitigation is required.

A low dam is located within Dry Creek and water is intermittently withdrawn from the creek to irrigate pastureland on the north side of Dyer Lane. Upon conversion of the pastureland to urban use, the current practice of using Dry Creek flows for irrigation would cease within the project site and this dam along with the pump, intake structure, and pipeline conveying the water, would no longer be required. Although removal of the dam is not proposed as part of the Proposed Action, **PVSP EIR Mitigation Measure 4.3.2-3f**, which has been adopted and imposed on the Proposed Action by Placer County, requires removal of the dam from Dry Creek. The removal of the dam would have a beneficial effect on fisheries.

Off-Site

The Proposed Action would involve utility line crossings of Dry Creek and the removal and replacement of the Watt Avenue Bridge across Dry Creek. Jack and bore techniques would be used in conjunction with utility line crossings to avoid any direct impacts to

fish species in Dry Creek. With respect to the bridge replacement, the new bridge would be designed to clear span the creek and no piers or bridge foundations would be located in the creek. Nonetheless, some work within and adjacent to Dry Creek would occur and could remove habitat for special-status fish species potentially occurring there. Potential construction-related effects to Chinook salmon and steelhead include temporary modification of edgewater habitat associated with bridge-widening activities (installation of in-channel footing) and removal of a low rock dam in Dry Creek at the Watt Avenue crossing. Utility line crossings would be constructed using jack and bore construction techniques and would have no direct impact on edgewater habitat.

Edgewater habitat is important to both upstream-migrating adults and downstream-migrating (i.e., emigrating) juvenile Chinook salmon and steelhead as foraging habitat and cover (i.e., protection from predators). Modification to edgewater habitat may include localized loss of food-producing habitat and associated prey items. In addition, installation of bridge support piles would remove localized benthic resources associated with the river substrate. This would be a **significant** effect. **Mitigation Measure 4.4-30** in the PVSP EIR which was adopted by Placer County at the time of the approval of the PVSP would address the effect of the Proposed Action Base Plan on fish species. The USACE assumes that Placer County would impose the same mitigation measure on the Proposed Action Blueprint scenario to address this effect. The mitigation measure requires that special-status fish species be protected during construction in the creeks. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effect on fish species would be reduced to a **less than significant level** with mitigation.

Alts. 1 through 5 Implementation of Alternatives 1 through 5, individually or combined, would result in similar effects on fish species and their habitat as discussed above for the Proposed Action. The beneficial effect on fisheries from the removal of the dam in Dry Creek would also occur under Alternatives 1 through 5 with the implementation of **PVSP EIR Mitigation Measure 4.3.2-3f**. As with the Proposed Action, these alternatives would also involve construction of stream crossings at Dry Creek, which would result in a **significant** effect on fish species. As noted above, **Mitigation Measure 4.4-30** in the PVSP EIR was adopted by Placer County at the time of the approval of the PVSP to address the effect on fish species. The USACE assumes that Placer County would impose the same mitigation measure on Alternatives 1 through 5 (individually or combined) to address this effect. The mitigation measure requires that special-status fish species be protected during construction in the creeks. Placer County concluded that with this mitigation, the effect will be reduced to a less than significant level. The USACE agrees with the conclusion in the PVSP EIR and finds that the effect on fish species would be reduced to a **less than significant** level with mitigation.

PVSP EIR Mitigation Measure 4.4-30: Fish Habitat*(Applicability – Proposed Action, Alternatives 1 through 5)*

- 4.4-30a *Implement EIR Mitigation Measures 4.4-12a and 4.4-12b.*
- 4.4-30b *A qualified fish biologist shall be present on-site during any dewatering activities at construction sites to minimize impacts to special-status species (i.e., prevent stranding of special-status species). Individual fish collected during dewatering shall be identified and released in an uninterrupted waterway adjacent to the area of disturbance.*
- 4.4-30c *Chinook salmon and steelhead resources shall be protected from potential construction-related activities by adherence to a construction window, whereby construction activities would be precluded from October 15 through June 15. This window corresponds to the time when both adult and juvenile Chinook salmon and steelhead are expected to migrate through the area. Further measures to protect salmon resources include use of Best Management Practices (BMPs) to minimize and localize siltation and other water quality impacts and to provide for riparian restoration activities. Such BMPs may include the use of cofferdams and other structures during dewatering and construction activities. Water quality monitoring shall also be performed to ensure that state and federal water quality standards are met.*

Impact BIO-13 Effects on Fish Habitat from Water Diversions

Proposed Action (Base Plan and Blueprint Scenario) As described in Section 3.15, **Utilities and Service Systems**, water demand for the Proposed Action would result in the total surface water supply need of approximately 11,723 acre-feet per year (afy) under the Base Plan and 14,539 afy under the Blueprint scenario at buildout.

The following discussion provides a summary of the potential effects to riverine fisheries from the implementation of the Proposed Action based on the analysis in the American River Pump Station EIS/EIR (PCWA 2002). This analysis was incorporated into the 2006 PVSP EIR, and as part of the EIR analysis, the County evaluated the effects on fisheries from likely changes in water flows and temperatures in the American River as a result of the diversion of water under the Proposed Action's initial surface water supply proposal and from the Sacramento River under the Proposed Action's long-term surface water supply proposal (Placer County 2006).

Effects of the Initial Surface Water Supply***Fall-Run Chinook Salmon and Steelhead in the Lower American River***

Minimal potential differences in lower American River flows and water temperatures under the Proposed Action's initial surface water supply, relative to the existing conditions, would not be expected to adversely affect fall-run Chinook salmon and steelhead immigration, spawning and incubation, or juvenile rearing and emigration

(PCWA 2002). Flow- and temperature-related impacts to fall-run Chinook salmon and steelhead would be **less than significant**.

Splittail in the Lower American River

The long-term average flow at Watt Avenue during the February through May period would be essentially equivalent to or slightly greater than the existing condition. Using flows at Watt Avenue, the long-term average amount of riparian habitat inundated in the studied reaches of the river under the Proposed Action's initial surface water supply would remain unchanged. In addition, flow changes resulting from the Proposed Action's initial surface water supply would have little, if any, effect on the availability of in-channel spawning habitat. Ultimately, these flow changes would not be expected to be of sufficient magnitude or frequency to have a significant adverse effect on the long-term population trends of lower American River splittail (PCWA 2002).

Monthly mean temperatures at Watt Avenue under the Proposed Action's initial surface water supply would be essentially equivalent to the existing condition (PCWA 2002). Therefore, water temperature-related impacts to splittail spawning would be **less than significant**.

American Shad in the Lower American River

The long-term average flow at the American River mouth during May and June would be reduced by 0.4 percent or less relative to the existing conditions. Flow reductions in May and June under the Proposed Action's initial surface water supply could potentially reduce the number of adult shad attracted into the river during a few years (PCWA 2002). However, American shad spawn opportunistically where suitable conditions are found; therefore, production of American shad within the Sacramento River system would likely remain unaffected. Flow-related impacts to American shad would be **less than significant**. In addition, analysis was performed to determine the probability that lower American River flows at the mouth in May and June would be at least 3,000 cubic feet per second (cfs), the flow level defined by CDFW as that which would be sufficient to maintain sport fishery for American shad. The simulations showed no difference in the number of years that the flow at the mouth would be below 3,000 cfs in May and June (PCWA 2002).

The frequency with which monthly mean water temperatures in May and June would be within the preferred range for American shad spawning of 60 °F to 70 °F would not change under the Proposed Action's initial surface water supply. Monthly mean water temperatures in May and June at the mouth of the lower American River would be within the reported preferred range for American shad spawning in one fewer year under the Proposed Action's initial surface water supply, relative to the existing conditions (PCWA 2002). As the frequency of suitable temperatures for American shad spawning would not substantially change under the Proposed Action, temperature-related impacts to American shad would be **less than significant**.

Striped Bass in the Lower American River

The flow-related impact assessment conducted for fall-run Chinook salmon and steelhead addressed potential flow-related impacts to striped bass juvenile rearing, which occurs during the months of May and June. In addition, analysis was performed to determine the probability that lower American River flows at the mouth would be below 1,500 cfs, the flow level defined by CDFW as that which would be sufficient to maintain sport fishery for striped bass. Under the Proposed Action's initial surface water supply, monthly mean flows in the lower American River would be below the 1,500 cfs attraction flow index during May and June in 17 of the 140 years. Moreover, flows at the mouth that are believed to be sufficient to maintain the striped bass fishery would be met or exceeded in most years during both May and June (PCWA 2002). Substantial changes in the strength of the striped bass fishery would not be expected to occur when May and/or June monthly mean flows fall below 1,500 cfs, and therefore, flow-related impacts to the striped bass fishery that could potentially occur under the Proposed Action's initial surface water supply would be **less than significant**.

The number of years that monthly mean water temperatures would be within the reported preferred range for striped bass spawning of 59 °F to 68 °F would not change below Nimbus Dam or at the mouth during May and June. Thus, the frequency of suitable temperatures for juvenile striped bass rearing in the lower American River would remain essentially unchanged and temperature-related impacts to juvenile striped bass rearing would be **less than significant**.

Long-Term Surface Water Supply

As discussed above, the long-term surface water supply for the Proposed Action would be drawn from the Sacramento River. The analysis in the 2002 American River Pump Station Project EIS/EIR evaluated the potential for future impacts to fisheries and aquatic habitat associated with the Sacramento River, Sacramento-San Joaquin Delta, as well as the fisheries resources of the Folsom Reservoir.

Chinook Salmon in the Sacramento River

The minimum flow objective for Keswick Dam releases stipulated in the NOAA Biological Opinion (1993, as revised in 1995) for the protection of winter-run Chinook salmon rearing and downstream passage is 3,250 cfs between October 1 and March 31. Based on modeling results, the Proposed Action would not result in reductions below 3,250 cfs (PCWA 2002).

Changes in Sacramento River flows from implementation of the Proposed Action would not be of sufficient frequency or magnitude to adversely affect attraction into or passage of adults immigrating into the Sacramento River, result in a reduction in winter-, spring-, fall-, or late fall-run Chinook salmon spawning habitat, or affect the success of juvenile salmonid emigration (PCWA 2002). Therefore, the Proposed Action's long-term surface

water supply is not likely to adversely affect immigration, spawning, or initial rearing of winter-, spring-, fall-, or late fall-run Chinook salmon in the Sacramento River and the impact would be **less than significant**.

Small temperature changes in the Sacramento River resulting from the Proposed Action's long-term surface water supply would not be of sufficient frequency or magnitude to result in adverse effects to adult immigration, spawning, incubation success, or juvenile emigration of winter-, spring-, fall-, or late fall-run Chinook salmon (PCWA 2002). Therefore, potential water temperature impacts to winter-, spring-, fall-, or late fall-run Chinook salmon spawning and incubation in the Sacramento River resulting from the implementation of the Proposed Action's long-term surface water supply would be **less than significant**.

Steelhead in the Sacramento River

The effects on steelhead survival under the Proposed Action's long-term surface water supply cannot be estimated because a steelhead mortality model has not been developed for the Sacramento River. However, since changes in late fall-run Chinook salmon survival under the Proposed Action's long-term surface water supply would be negligible, it is not anticipated that detectable decreases in average early life stage steelhead survival would occur under the Proposed Action's long-term surface water supply (PCWA 2002).

Overall, there would be no detectable changes to monthly mean flows or water temperatures in the upper or lower Sacramento River under the Proposed Action's long-term surface water supply. Consequently, flow- and temperature-related changes during the steelhead adult immigration, spawning, and incubation period represent a **less than significant** impact.

Splittail in the Sacramento River

Under the Proposed Action's long-term surface water supply, the long-term average flow at Freeport during the period of February through May would be essentially equivalent to flows under existing conditions (PCWA 2002). Therefore, flow reductions that could potential reduce the availability of inundated habitat for splittail spawning would be unlikely to occur under the Proposed Action.

During the February through May period, water temperatures at Freeport would not rise above 68 °F, the upper end of the reported preferred range for splittail spawning, more frequently as a result of the Proposed Action, relative to the existing conditions. Overall, potential flow and water temperature changes resulting from the implementation of the Proposed Action would not be of sufficient frequency or magnitude to result in adverse effects to splittail spawning (PCWA 2002). Therefore, impacts to splittail in the Sacramento River under the Proposed Action would be **less than significant**.

American Shad in the Sacramento River

Under the Proposed Action's long-term surface water supply, the long-term average flow in the Sacramento River at Freeport would not differ substantially from long-term average flows under the existing condition in May and June. Similarly, monthly mean flows under the Proposed Action's long-term surface water supply during May and June would be essentially equivalent to those under the existing conditions. While flow reductions could potentially reduce the number of adult shad attracted into the river, the Proposed Action's long-term surface water supply would not result in detectable reductions in flows during May or June (PCWA 2002).

The number of years that monthly mean water temperatures at Freeport in May and June would be within the reported preferred range for American shad spawning of 60 °F to 70 °F would not differ under the Proposed Action, relative to the existing conditions. Therefore, the frequency with which suitable temperatures for American shad spawning would occur would not change under the Proposed Action. Overall, changes in flows and water temperatures at Freeport in the lower Sacramento River would not be of sufficient frequency or magnitude to result in adverse effects to American shad spawning (PCWA 2002). Therefore, impacts to American shad in the Sacramento River would be **less than significant**.

Striped Bass in the Sacramento River

The long-term average flow in the Sacramento River at Freeport would not differ substantially from long-term average flows under the existing condition in the March through June period. Similarly, monthly mean flows under the Proposed Action's long-term surface water supply during March through June would be essentially equivalent to those under the existing conditions (PCWA 2002).

The frequency that monthly mean water temperatures would be within the reported preferred range for striped bass spawning and initial rearing of 59 °F to 68 °F would not differ under the Proposed Action's long-term surface water supply, relative to the existing condition, throughout the May through June period. Therefore, water temperatures in Sacramento River under the Proposed Action's long-term surface water supply would not adversely affect striped bass spawning and initial rearing. Overall, changes in flows and water temperatures at Freeport in the Sacramento River would not be of sufficient frequency or magnitude to result in adverse effects to striped bass spawning and initial rearing (PCWA 2002). Therefore, impacts to striped bass in the Sacramento River would be **less than significant**.

Folsom Reservoir Fisheries

Hydrologic conditions under the Proposed Action's long-term surface water supply would result in a minimal difference in the long-term average water surface elevations in the Folsom Reservoir during the March through September period (when warmwater fish spawning and initial rearing occurs) and the April through November period (when the reservoir thermally stratifies). The average monthly elevations would be essentially equivalent to the existing conditions in all months of the warmwater and coldwater fishery periods (PCWA 2002).

Anticipated reductions in reservoir storage that would occur under the Proposed Action's long-term surface water supply would not be of sufficient magnitude to adversely affect the reservoirs' long-term availability of warmwater or coldwater habitat (PCWA 2002). Therefore, reductions in water surface elevations would result in a **less than significant** impact to Folsom Reservoir warmwater and coldwater fish rearing.

Delta Fish Populations

Delta outflow is considered to have a substantial effect on a number of fish species relying on Delta habitats for one or more of their life stages. A maximum reduction of up to 8 cfs in the long-term average Delta outflow for any given month could occur under the Proposed Action's long-term surface water supply. Delta outflow during the period of February through June is believed to be of greatest concern for potential effects to spawning and rearing habitat and downstream transport flows for delta smelt, longfin smelt, splittail, striped bass, salmonids, and other aquatic species in the Delta (PCWA 2002).

The decreases in Delta outflow under the Proposed Action's long-term surface water supply would not be of sufficient frequency or magnitude to adversely affect Delta fish resources and impacts to Delta fish populations would, therefore, be **less than significant**.

Nimbus Fish Hatchery

CVP operations of Folsom Dam and Reservoir associated with the Proposed Action's long-term surface water supply would have very little effect on the temperature of water entering the Nimbus Fish Hatchery from Lake Natoma during the May through September period. Furthermore, there would not be substantial differences in the frequency with which water temperatures exceed the water temperature indices of 60 °F, 65 °F and 68 °F. The small and infrequent differences in water temperature which could occur during the May through September period (when hatchery temperatures reach annual highs) would not be of sufficient frequency or magnitude to affect hatchery operations and resultant fish production (PCWA 2002). Therefore, implementation of the Proposed Action's long-term surface water supply would result in a **less than significant** impact on the hatchery.

In summary, all effects would be **less than significant** and no mitigation is required.

No Action, Alts. 1 through 5 As described above, water demand for the Proposed Action would result in the total surface water supply need of approximately 11,723 afy under the Base Plan and 14,539 afy under the Blueprint scenario at buildout. The total demand under the No Action Alternative would be approximately 7,209 afy at buildout and Alternatives 1 through 5 (singly or combined) would demand a similar or slightly lower volume of surface water as the Proposed Action Base Plan. It is anticipated that the water supply sources for the No Action Alternative and Alternatives 1 through 5 would be similar to the Proposed Action and similar volumes of water would be diverted. Therefore, all of the analysis of potential impacts on fisheries from project-related water diversion described above is applicable to the No Action Alternative and Alternatives 1 through 5 (singly or combined). For reasons presented above, the effects of water diversion would be **less than significant**. No mitigation is required.

Impact BIO-14 Indirect Effects to Biological Resources from Off-Site Infrastructure Not Constructed as Part of the Project

No Action Alt., Proposed Action (Base Plan and Blueprint Scenarios), and Alts. 1 through 5 The construction and operation of off-site water pipeline infrastructure by the Placer County Water Agency (PCWA) which may be used by the Proposed Action was evaluated in the Second Partial Draft EIR for PVSP (Placer County 2007) prepared by Placer County. The analysis in the EIR concluded that construction activities associated with the water pipeline infrastructure would have the potential to impact wetlands (including vernal pools) and other jurisdictional aquatic features, riparian habitat, nesting habitat for raptors and other migratory birds, and elderberry shrubs providing habitat for the Valley elderberry longhorn beetle. The off-site water pipelines could cross several streams and listed fish species could occur in those streams. The effect to biological resources was determined to be potentially **significant**. The PVSP EIR noted that mitigation measures included in the EIR to address off-site infrastructure impacts (Mitigation Measures 4.4-15 through 4.4-30c) could reduce the impacts of the water pipeline infrastructure, but that impacts to jurisdictional waters, raptors, migratory birds, the Valley elderberry longhorn beetle and listed fish species may not be reduced to a less than significant level. The USACE concurs with the analysis and finds that some impacts could remain **significant even after mitigation**.

Construction of off-site water pipeline infrastructure for No Action Alternative, and Alternatives 1 through 5 would result in similar effects as described above for the Proposed Action and the same types of mitigation measures would be required.

The USACE notes that at this time, the PCWA has not submitted an application to the USACE for a DA permit for the pipeline infrastructure project, and therefore at the present time, USACE does not have a mechanism to impose any mitigation measures on the project.

3.4.6 RESIDUAL SIGNIFICANT IMPACTS

A study conducted by the State Water Resources Control Board of Section 401 permit files and permit-related mitigation projects throughout the state of California found that of the 143 permits that were evaluated, 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 further 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).

As stated in the Memorandum of Agreement between the USACE and USEPA for the determination of mitigation under the Clean Water Action Section 404(b)(1) Guidelines,

the Clean Water Act and the Section 404(b)(1) Guidelines set forth a goal of restoring and maintaining existing aquatic resources. The Corps will strive to avoid adverse impacts and offset unavoidable adverse impacts to existing aquatic resources, and for wetlands, will strive to achieve a goal of no overall net loss of values and functions... The determination of what level of mitigation constitutes “appropriate” mitigation is based solely on the values and functions of the aquatic resource that will be impacted. “Practicable” is defined at Section 230.3(q) of the Guidelines. However, the level of mitigation determined to be appropriate and practicable under Section 230.10(d) may lead to individual permit decisions which do not fully meet this goal because the mitigation measures necessary to meet this goal are not feasible, not practicable, or would accomplish only inconsequential reductions in impacts. Consequently, it is recognized that no net loss of wetlands functions and values may not be achieved in each and every permit action. However, it remains a goal of the Section 404 regulatory program to contribute to the national goal of no overall net loss of the nation’s remaining wetlands base.

Consequently, the USACE’s compensatory mitigation program has been designed to ensure to the maximum extent practicable that each project that will fill wetlands provide compensatory mitigation that takes into account not just the acreage of wetlands affected but also their functions and values. 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. Based on the above, 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.

As noted above under **Impact BIO-1**, because the mitigation strategy put forth by the Applicants is conceptual and a detailed plan has not been submitted to the USACE pursuant to **Mitigation Measure BIO-1**, the USACE cannot fully evaluate the effectiveness of the mitigation strategy to reduce the Proposed Action’s impact on the waters of the U.S. to less than significant, and has therefore assumed that the effect would remain potentially **significant**.

3.4.7 REFERENCES

- ECORP. 2012a. "404 Permit Impacts and New Potential Avoidance Areas."
- ECORP. 2012b. "Revised U.S. Fish and Wildlife Service Biological Assessment to Support Section 7 Consultation for the Placer Vineyards Specific Plan Project Placer County, California (USFWS ID# 81420-2008-TA-0983-1), May 18, 2012." Placer Vineyards Development Group, LLC.
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- Placer Vineyards Owners Group. 2008. "National Oceanographic and Atmospheric Administration, National Marine Fisheries Service Endangered Species Act Consultation, Biological Assessment for Placer Vineyards Specific Plan Project, Placer County, California, July 7, 2008."
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