

3.4 **BIOLOGICAL RESOURCES**

3.4.1 **Background and Methodology**

This section describes existing biological resources in the Airport Study Area and identifies potentially significant impacts that could occur to sensitive biological resources from construction and operation of the Proposed Project. Biological resources include common plant and animal species, special-status plant and animal species as designated by the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Department of Fish and Game (CDFG). Biological resources also include waters of the United States and the state of California, as regulated by the U.S. Army Corps of Engineers (Corps), the Regional Water Quality Control Board (RWQCB) and the CDFG.

The Proposed Project (see **Figure 2-3**) consists of short-term and long-term project elements that would have potential impacts on biological resources by filling wetlands and ponds, adding pavement, realigning and culverting existing creeks, creating stormwater detention basins, modifying biological resource habitat, and disturbing the ground. Short-term project elements are analyzed at a project level, and mitigation measures are proposed to off-set any impacts identified. Long-term project elements have not been developed sufficiently to quantify potential impacts in most cases, and therefore, are analyzed at a programmatic level. Additional analysis under CEQA will be required for long-term projects at the time that they are proposed.

3.4.1.1 **Regulatory Context**

FEDERAL REGULATIONS

Federal Clean Water Act

Pursuant to the authority granted under the federal Clean Water Act (CWA),¹ the Corps regulates the discharge of dredge or fill into the waters of the United States. A permit must be obtained from the Corps prior to commencing construction for any activity that will result in the deposit of fill or grading in wetlands or other waters of the U.S., pursuant to Section 404 of the CWA. Waters of the U.S. and their lateral limits are defined in 33 CFR Part 328.3(a) and include streams that are tributaries to navigable waters and their adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the Ordinary High Water Mark (OHWM) (33 CFR Part 328.3(e)) or the limit of adjacent wetlands (33 CFR Part 328.3(b)).

Federal Endangered Species Act (FESA)

Federal Endangered Species Act (FESA) protects plant and animal species listed as threatened and endangered, or proposed for such listing. Section 4 of FESA provides the process wherein species are determined to be listed. Section 9 of FESA prohibits the “take” of listed animal species. “Take” as defined by FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. “Harm” includes not only the direct taking of a species itself, but the destruction or modification of the species’ habitat resulting in the potential injury of the species. As such, “harm” is further defined to mean “an act which actually kills or injures wildlife; such an act may include significant habitat modification or

¹ Federal Water Pollution Control Amendments of 1972, Pub. L. 92-500, 33 U.S.C. Subsection 1251 *et seq.*

degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50CFR 17.3).

If “take” of a listed species could occur due to project activities, consultation under Section 7 of FESA would be required. Section 7(a)(2) of FESA requires that each federal agency shall, in consultation with and with the assistance of the USFWS, ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of a federally-listed species or result in the destruction or adverse modification of Critical Habitat, as designated under Section 4 of FESA. Critical Habitat identifies areas, both occupied and unoccupied, that are essential to the conservation of a listed species and that may require special management considerations or protection.

Section 10 of FESA provides the guidelines under which a permit may be issued to authorize prohibited activities, such as “take” of a listed animal species. Where an activity that would result in “take” does not require consultation under Section 7 of FESA, the activity is nevertheless required to comply with Section 10 of FESA by obtaining either a Section 10(a)(1)(A) permit for the taking of threatened or endangered animal species for scientific purposes or for purposes of enhancement of propagation or survival; or a Section 10(a)(1)(B) incidental take authorization.

Pursuant to Section 7(a)(2) of FESA, the Corps is required to consult with the USFWS and/or the NMFS under Section 7 of the FESA if an action is subject to CWA permitting and could result in take of federally-listed species. On the Santa Rosa Plain, the USFWS conducts Section 7 consultation in accordance with the *Santa Rosa Plain Conservation Strategy* (Conservation Strategy) and associated *Programmatic Biological Opinion* (PBO), if any of the following species would be affected by a proposed activity: Burke’s goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*), Sebastopol meadowfoam (*Limnanthes vinculans*), and California tiger salamander (CTS) (*Ambystoma californiense*). The Conservation Strategy was developed to create a long-term conservation plan to mitigate potential adverse impacts of future development on these federally-listed plants and animals on the Santa Rosa Plain.² It provides the biological framework upon which the PBO is based.³ The PBO implements the Conservation Strategy’s interim mitigation measures for CTS and listed plants species. Projects that require Corps permit approval (such as the Proposed Project) can be appended to the PBO and thereby provided individual take authorization, if the projects apply the PBO’s mitigation ratios and adhere to the PBO’s applicable avoidance and minimization measures.

The Conservation Strategy identifies nine conservation areas, within which the conservation and recovery of the three listed plant species and CTS can be achieved through preservation and mitigation actions. The Conservation Strategy encourages the following:

1. the establishment of preserves within these areas;
2. translocation of listed species;
3. habitat improvement through wetland creation, restoration and enhancement; and
4. mitigation measures to reduce and compensate for impacts.

² Conservation Strategy Team, *Final Santa Rosa Plain Conservation Strategy*, December 2005.

³ U.S. Fish and Wildlife Service, *Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers (Corps) Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California*, November 2007.

Projects in the Santa Rosa Plain that potentially affect these federally-listed species should evaluate effects and implement mitigation measures based on recommendations in the Conservation Strategy. The Conservation Strategy and the associated PBO contain guidelines and objectives applicable to the Proposed Project. **Section 3.10** in the Biological Resources Report (see **Appendix H**) provides a detailed discussion of the consistency of the Proposed Project with these guidelines and objectives.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918⁴ prohibits the taking, hunting, killing, harassment, harming, selling, or purchasing of any migratory birds listed in Title 50, Section 10.13, of the Code of Federal Regulations, including any parts of said migratory birds, or their eggs, nests, or young. Nearly all bird species that occur in the Airport Study Area are covered by this act.

STATE OF CALIFORNIA REGULATIONS

California Endangered Species Act (CESA)

Sections 2080 and 2081 of the California Fish and Game Code regulate the take of plants and animals that are protected under the authority of the California Endangered Species Act of 1984 (CESA).⁵ California Department of Fish and Game (CDFG) has jurisdiction over State-listed threatened, rare (plants only), and endangered plant and animal species under CESA. The CDFG also maintains a list of candidate species that CDFG has formally noticed as being under review for threatened or endangered status. Pursuant to the requirements of CESA, an agency reviewing a project must determine whether any state-listed species may be present in the project area and the potential for the project to cause significant impacts to such species. Under Section 2081 of CESA, CDFG has the authority to issue incidental take authorizations for state-listed species. CDFG also has the authority to coordinate with the USFWS in the preparation of a Biological Opinion under Section 7 of FESA, and to issue a Consistency Determination, in lieu of an incidental take authorization, if the Biological Opinion is found by CDFG to meet the requirements of CESA.

California Fully Protected Species

Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code, designate “fully protected” species. Fully protected species may not be taken or possessed without a permit from the Fish and Game Commission and/or the CDFG. California Department of Fish and Game (CDFG) cannot issue Section 2081 “incidental take” authorizations for fully protected species. Permits may only be issued for collection of such species for scientific research purposes and the relocation of bird species for livestock protection.

California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (Fish and Game Code Sections 1900-1913) directed the CDFG to “preserve, protect and enhance rare and endangered plants in this State.” The NPPA gave the California Fish and Game Commission the power to designate native plants as “endangered” or “rare,” and protected endangered and rare plants from take. In 1984, CESA subsequently expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the Fish and Game Code.

⁴ U.S. Code. 1918. *The Migratory Bird Treaty Act of 1918*, 16 UUSC Subsection 703-712.

⁵ California Fish & Game Code, *California Endangered Species Act*, Subsection 2050-2093.

Section 401 Water Quality Certification and Porter-Cologne Act Waste Discharge Requirements (WDR)

Pursuant to Section 401 of the federal Clean Water Act, actions that require a permit from the Corps under Section 404 must also obtain Water Quality Certification from the Regional Water Quality Control Board (RWQCB). Under the State of California Porter-Cologne Act, the RWQCB is also required to ensure that a project will not cause adverse impacts to waters of the State of California, and must meet RWQCB-defined Waste Discharge Requirements applicable to the affected water bodies. The Section 401/WDR regulatory program for projects on the Santa Rosa Plain is administered by the North Coast RWQCB, which reviews projects from both water quality and wetland impact/mitigation perspectives.

California Department of Fish and Game Code Sections 3503, 3503.5, and 3513

Section 3503 of the Fish and Game Code makes it unlawful to take, possess, or needlessly destroy the nests or eggs of any bird. Section 3503.5 makes it unlawful to take or possess birds of prey (hawks, eagles, vultures, owls) or destroy their nests or eggs. Section 3513 of the Fish and Game Code makes it unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Federal Migratory Bird Treaty Act. These regulations, in combination with the requirements under the federal Migratory Bird Treaty Act, provide the regulatory basis for nest avoidance measures for species such as the burrowing owl and Swainson's hawk.

California Department of Fish and Game Code Section 1600

Under this section of the California Fish and Game Code, CDFG regulates any activity that would divert or obstruct the natural flow or change the bed, channel or bank of any river, stream, or lake. Section 1602 requires the submittal to CDFG of a Lake and Streambed Alteration Agreement Notification for any work undertaken within the bed and/or bank of a wash, stream, or lake. Usually these features contain, or historically contained, fish and wildlife or supports, or historically supported, riparian vegetation. Based on information contained in the notification form and a possible field inspection, CDFG may propose reasonable modifications to the proposed activity in order to protect fish and wildlife resources.

CDFG Species of Special Concern

The CDFG maintains lists of "species of special concern".⁶ These species are broadly defined as plants and animals that are of concern to CDFG because of a decline in population, restricted distribution, and/or a decline of habitat with which they are associated. Project-related impacts to species of special concern are considered "significant" under *CEQA Guidelines*.

California Rare Plant Rankings

CDFG, in collaboration with California Native Plant Society (CNPS), uses the California Rare Plant Rankings system to classify the rarity of non-listed plant species in California based on the evaluations of the Rare Plant Status Review Group (a group of 300+ botanical experts from government, academia, non-government organizations and the private sector).⁷ All such rare

⁶ California Department of Fish and Game, *Species of Special Concern*, available at: <http://www.dfg.ca.gov/wildlife/nongame/ssc/index.html>. Accessed February 7, 2011.
⁷ California Native Plant Society, *Inventory of Rare and Endangered Plants*, available at: <http://www.rareplants.cnps.org>. Accessed February 7, 2011.

species are identified on CDFG's *Special Vascular Plant, Bryophyte and Lichens list*⁸ and in the CNDDDB.⁹

LOCAL REGULATIONS

Sonoma County General Plan 2020

The Open Space and Resource Conservation Element of the Sonoma County General Plan contains policies that are applicable to the Proposed Project and are required to be considered under CEQA analysis.¹⁰ These are listed below.

- **Policies OSRC-7a and 7b: Biotic Habitat Areas in the Open Space and Resource Conservation Element.** The Airport is located within Open Space Plan Map 5E and is designated on the map as containing wetland, stream, special status plant and CTS biotic resources that require site assessment and adequate mitigation. Policy OSRC-7b requires that the following priority for mitigation approaches be used: (1) avoidance; (2) on-site mitigation to achieve “no net loss”; (3) off-site mitigation to achieve no net loss; and (4) off-site habitat creation to achieve no net loss. Policy OSRC-7b also includes the following measures relevant to the Proposed Project:
 - To the extent feasible, mitigation should be consistent with permit requirements of Federal and State regulatory agencies.
 - Acreage required for adequate mitigation and replacement habitat should be at least two times the acreage affected unless a lower level is acceptable to the applicable State and Federal agencies, with the amount depending on the habitat affected and the applicable mitigation priority value.
- **Policy OSRC-7k:** This policy requires that native trees and woodlands be identified and preserved to the maximum extent practicable, and that the fragmentation of woodlands be minimized. The policy also requires replacement plantings, preferably on the site, for any native trees that are removed; and call for the permanent protection of other existing woodlands where full replacement plantings are not possible.
- **Policy OSRC-7o:** This policy requires the use of native or compatible non-native species for landscaping where consistent with fire safety. It prohibits the use of invasive exotic species.
- **Policy OSRC-7q:** This policy requires participation in the development of a conservation strategy to preserve, restore and enhance the unique vernal pool habitat of the Santa Rosa Plain and protect the associated special-status species. The policy also seeks minimization of the adverse effects of irrigation on valley oaks and vernal pool habitat.
- **Policy OSRC-7t:** This policy requires the County to continue to actively participate in the FishNet4C program and work cooperatively with participating agencies to implement

⁸ California Department of Fish and Game, *Natural Diversity Database*, available at: <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPplants.pdf>. Accessed February 7, 2011.

⁹ California Department of Fish and Game. 2011. *Rarefind*. California Natural Diversity Database (CNDDDB). Version 3.1.0, Updated January 1, 2011. California Department of Fish and Game, Wildlife Habitat Data Analysis Branch, Sacramento, California.

¹⁰ County of Sonoma. *Sonoma County General Plan 2020, Open Space and Resource Conservation Element*, September 2008.

recommendations to improve and restore aquatic habitat for listed anadromous fish species and other fishery resources.¹¹

- **Policy OSRC-8b:** This policy requires that 50-foot wide streamside conservation areas be established along riparian corridors.
- **Policy OSRC-8e:** This policy prohibits grading, vegetation removal, agricultural cultivation, structures, roads, utility lines, and parking lots within any streamside conservation area. However, the policy allows an exception to be considered if the land use involves minor expansion of an existing structure, where it is demonstrated that the expansion will be accomplished with minimum damage to riparian functions.
- **Policy OSRC-8m:** This policy requires the application of Sonoma County Water Agency Flood Control Design Criteria creek setbacks where necessary to protect against streambank erosion.

Memorandum of Agreement for the Santa Rosa Plain Conservation Strategy

The County of Sonoma is a signatory to a Memorandum of Agreement to implement the Santa Rosa Plain Conservation Strategy (see above). The Sonoma County Permit and Resource Management Department (PRMD) reviews all discretionary permit applications for grading or other land development activity for consistency with Conservation Strategy requirements.

3.4.1.2 Thresholds of Significance

Appendix G of the *CEQA Guidelines* provides that a project may have a significant impact on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, adopted policies, or regulations, or by the California Department of Fish and Game or United States Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional, plans, policies, or regulations or by CDFG or USFWS.
3. Have a substantial adverse effect on federal or State protected wetlands as defined by Section 404 of the Clean Water Act or Porter-Cologne Water Quality Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or state habitat conservation plan.
7. Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare or threatened species.

¹¹ Fishnet 4C, MFG, Inc., and Pacific Watershed Associates. 2004. County Road Maintenance Guidelines for Protecting Aquatic Habitat and Salmon Fisheries. Updated 2007, available at: fishnet.marin.org/projects_roads_manual.html, Accessed November 1, 2009.

3.4.1.3 Methodologies

Biological resources within and in the vicinity of the Airport Study Area were assessed based on background information sources, combined with site specific field surveys, as summarized below:

General Background Research

Special-status species were identified based on the following sources: USFWS,¹² California Natural Diversity Data Base,¹³ California Native Plant Society on-line database,¹⁴ *The Jepson Manual*,¹⁵ *Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan*,¹⁶ *Final Santa Rosa Plain Conservation Strategy*,¹⁷ and the USFWS *Programmatic Biological Opinion* for the Santa Rosa Plain.¹⁸

Site-Specific Background Research

In addition to the information sources cited above, various studies and surveys conducted in the Airport Study Area and vicinity were consulted, as summarized in **Appendix H**.

Field Studies

Specific field studies included:

1. general habitat type mapping of the Airport Study Area;
2. compilations of observed vegetation and wildlife species lists;
3. characterizations of habitats based on dominant/characteristic plant species, vegetative structure and special habitat features;
4. wetland delineation mapping, verified by the Corps in 2010;
5. botanical surveys conducted in accordance with USFWS/CDFG protocols;
6. California red-legged frog/California tiger salamander habitat assessments and seine net surveys; and
7. surveys for salmonid fish species within Airport and Redwood Creeks.

Primary Support Documentation

The descriptions of habitats, species accounts and impact assessments contained herein constitute summaries of the more detailed information and analyses contained in the Biological Resources Report (**Appendix H**). The Biological Resources Report also provides citations for the technical support documentations, studies and reports used to compile the information contained herein.

¹² U.S. Fish and Wildlife Service, *Species List for the Charles M. Schulz Sonoma County Airport – Runway Safety Enhancement Project*, May 3, 2011.

¹³ California Department of Fish Game. 2011. Rarefind. California Natural Diversity Database (CNDDDB). Version 3.1.0, Updated January 1, 2011. California Department of Fish and Game, Wildlife Habitat Data Analysis Branch, Sacramento, California.

¹⁴ California Native Plant Society, *Inventory of Rare and Endangered Plants, On-line Edition 8-01a*, accessed on February 7, 2011.

¹⁵ Hickman, J.C. (ed.), *The Jepson Manual: Higher Plants of California*, 1993.

¹⁶ CH2M Hill. *Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan*, 1995.

¹⁷ Conservation Strategy Team, *Final Santa Rosa Plain Conservation Strategy*, December 2005.

¹⁸ U.S. Fish and Wildlife Service, *Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers (Corps) Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California*, November 2007.

3.4.2 Existing Conditions

3.4.2.1 Physical Conditions Relative to Biological Resources

The Airport Study Area is located within the northern portion of the Santa Rosa Plain, a region typified by gently rolling to relatively level topography. Most of the surfaces in the Airport Study Area have been graded for runways, buildings, irrigated hay growing, and drainage, so the original surface topography has been largely muted or removed; surfaces are generally flat. However, variously sized depressions and swales remain and/or have developed atop graded areas; most of these depressions and swales pond water during the rainy season and support wetland vegetation.

The Airport Study Area is largely mapped as containing Huichica Series soils, which are moderately well-drained to somewhat poorly drained loams on hummocky plains and terraces. Huichica soils have a clay or cemented hard pan horizon that results in very low permeability and the potential for surface ponding. Most of the Huichica soil types found in the Airport Study Area are classified as hydric soils that have the potential to support vernal pools and other seasonal wetlands.

Natural drainage patterns within the Airport Study Area have been largely altered by grading that diverts surface flows into ditches and underground storm drains. Much of the grassland surrounding the runways is used by the Sonoma County Water Agency as a wastewater sprinkler discharge area. Portions of the grassland have natural appearing vernal pool basins and swales, but no observed mound and swale micro-topography. The northern and northeastern portions of the Airport Study Area drain to Airport Creek, which flows westward through the northern part of the Airport (see **Figure 3.4-1**). Airport Creek is a tributary of Windsor Creek, which is located approximately 0.7 miles downstream of the Airport. The central and southern portions of the Airport Study Area drain southward to Mark West Creek, which is located immediately south of the Airport. The western portion drains westward to Windsor Creek, a tributary of Mark West Creek which flows to the Russian River; approximately 4 miles west of the Airport (see **Figure 3.4-2**).

3.4.2.2 Vegetation Types and Associated Habitats

The following vegetation types and associated habitats occur within the Airport Study Area:

Non-native Grassland/Ruderal

Non-native annual grassland and ruderal vegetation types (748.4 acres) occur throughout the Airport Study Area, and include areas that are mowed and irrigated with treated wastewater (see **Figure 3.4-1**). Dominant vegetation species are wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and Italian ryegrass (*Lolium multiflorum*).

Non-native grasslands and ruderal areas within the Airport Study Area support or are likely to support populations of various small mammal species including California vole (*Microtus californicus*), Botta's pocket gopher (*Thomomys bottae*), and black-tailed jackrabbits (*Lepus californicus*). Predators observed within the Airport Study Area include gopher snake (*Pituophis catenifer*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*) and coyote (*Canus latrans*). Great egrets (*Ardea alba*) and great blue herons (*Ardea herodias*) hunt voles and gophers in the grasslands during the winter and spring. Smaller birds typically associated with grasslands include savannah sparrows (*Passerculus sandwichensis*) and western meadowlark (*Sturnella neglecta*). Areas of mowed grass such as

the strips along and at the ends of the Airport runways are attractive to birds such as the Canada goose (*Branta canadensis*), killdeer (*Charadrius vociferous*), and American pipit (*Anthus rubescens*).

Seasonal Wetlands

Seasonal wetlands (44.7 acres) occur throughout the Airport Study Area and include vernal pools, swales, ditches, drainages, and depressions with wetland vegetation (see **Figure 3.4-1**). Approximately 40.5 acres of seasonal wetlands within the Airport Study Area have been verified as jurisdictional waters of the U.S. by the Corps. The wetlands are also waters of the State of California, subject to regulation under the Porter-Cologne Act. The Biological Resources Report provides a copy of the Corps verified wetland delineation map (see **Appendix H**).¹⁹

Vernal pools within the Airport Study Area appear to be remnants of the historic pool systems that once encompassed much of the Plain. However, many pools and swales occur within formerly graded lands, and typically support wetland plant species more characteristic of disturbed vernal pools. Additionally, vernal pools and swales, encompassing more than 7.0 acres, were established between 1988 and 2002 in the SACMA, SACMA-II and Goldfields Preserve sites in the north portion of the Airport Study Area (see **Figure 3.4-1**).²⁰

Dominant or characteristic plant species in the vernal pools include smooth goldfields (*Lasthenia glaberrima*), Douglas meadowfoam (*Limnanthes douglasii*), maroon-spot downingia (*Downingia concolor* var. *concolor*), semaphore grass (*Pleuropogon californicus*), and coyote thistle (*Eryngium armatum*). Deeper pools support stands of creeping spikerush (*Eleocharis macrostachya*), woolly-marbles (*Psilocarphus brevissimus*), and vernal pool buttercup (*Ranunculus bonariensis*). Disturbed pools and swales and other seasonal wetland areas, including those that are irrigated, tend to be dominated by non-native species such as Italian ryegrass, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), curly dock (*Rumex crispus*), pennyroyal (*Mentha pulegium*), rabbit's-foot grass (*Polypogon monspeliensis*), and Bermuda grass (*Cynodon dactylon*). Most drainages and ditches in the Airport Study Area support seasonal wetland vegetation, dominated by non-native species.

Vernal pools and seasonal wetlands in the Airport Study Area provide suitable breeding habitat for amphibians such as Pacific treefrog (*Pseudacris regilla*) and western toad (*Bufo boreas*). Various species of water birds are attracted to seasonal wetlands and vernal pools including mallards (*Anas platyrhynchos*), greater yellowlegs (*Tringa melanoleuca*), Wilson's snipe (*Gallinago delicata*), great egret, and great blue heron. Birds typical of freshwater marsh

¹⁹ The Corps only verified wetlands and other waters within the Airport Study Area where physical access to the site was possible. Wetlands on several off-site parcels within the Airport Study Area were mapped based on aerial photographic interpretation only; these were not verified by the Corps. The delineation map provided in **Appendix H** shows only Corps verified wetlands and other waters.

²⁰ The "Goldfields Preserve" (also called the "Wildflower Preserve") consists of approximately 10.5 acres of land situated along Taxiway A to the west of Runway 1/19 (see Figure 3.4-1). This area contains 0.6 acres of wetlands, constructed in 1988 as mitigation for impacts from other Airport projects. "SACMA" refers to the Sonoma County Airport Consolidated Mitigation Area, an approximately 14.5-acre area north of Taxiway A, bordered by Upper Ordinance Creek (see Figure 3.4-1). This area contains approximately 4.4 acres of wetlands constructed in 2000 as off-site mitigation for various off-site projects. "SACMA-2" refers to the second phase of the Sonoma County Airport Consolidated Mitigation Area, consisting of 8.5 acres of land south of the intersection of Windsor Road and Sanders Road (see Figure 3.4-1). This area contains 3.3 acres of wetlands constructed in 2002 as off-site mitigation for various off-site projects. All three of these preserve areas are protected by permanent conservation easements.

habitats observed or to occur in the seasonal wetlands include Virginia rail (*Rallus limicola*), song sparrow (*Melospiza melodia*), and red-winged blackbird (*Agelaius phoeniceus*).

Streams

The Airport Study Area supports approximately 3.3 acres (10,830 linear feet) of stream channels along various segments of Redwood Creek, Airport Creek, Pool Creek, Upper Ordinance Creek and Lower Ordinance Creeks (see **Figure 3.4-1**). The Airport Study Area also contains approximately 0.2 acres of non-wetland ditches, swales and associated culverts that constitute ephemeral tributaries to the various creeks. All but 0.1 acre of these stream features within the Airport Study Area (3.2 acres) have been verified as jurisdictional waters of the U.S. by the Corps, and are also waters of the State of California (see verified wetland delineation map in **Appendix H**). The 0.1 acre of stream that was not verified by the Corps would not be affected by the Proposed Project.

Redwood Creek originates approximately 0.25 mile to the west of U.S. Highway 101 and flows westward across the northern portion of the Airport Study Area where it converges with Airport Creek (see **Figure 3.4-1**). Airport Creek continues across the northern edge of the Airport, eventually joining Windsor Creek approximately 0.7 mile downstream. Upper Ordinance Creek is a tributary of Airport Creek northeast of the Airport runways (see **Figure 3.4-1**). It was formerly a natural channel that was straightened. Lower Ordinance Creek is a short tributary to Airport Creek; the confluence lies just outside the western Airport boundary. Although the various creek channels are largely unvegetated, some reaches have occasional bands of wetland vegetation along the banks, such as cattails (*Typha* spp.) water plantain (*Alisma plantago-aquatica*), slough sedge (*Carex obtusa*), and smartweed (*Polygonum* sp.).

Various species of warm water native and introduced freshwater fish typical of low gradient creeks on the Plain occur or are likely to be found in creeks within the Airport Study Area. Native species include the California roach (*Lavinia symmertricus*) and threespine stickleback (*Gasterosteus aculeatus*). Non-native fish likely to occur include the common carp (*Cyprinus carpio*), western mosquitofish (*Gambusia affinis*), largemouth bass (*Micropterus salmoides*), and bluegill (*Lepomis macrochirus*). Both threespine stickleback and western mosquitofish were observed in Airport and Redwood Creeks. Also observed in the creeks were American bullfrog (*Rana catesbeiana*) and red swamp crayfish (*Procambarus clarkii*), both non-native aquatic predators.

A wide variety of water birds have been observed in creeks, including Canada goose, mallard, American wigeon (*Anas americana*), green-winged teal (*Anas crecca*), bufflehead (*Bucephala albeola*), pied-billed grebe (*Podilymbus podiceps*), great blue heron, and green heron (*Butorides virescens*).

Ponds

There are seven ponds in the Airport Study Area encompassing 10.3 acres (see **Figure 3.4-1**). All the ponds are constructed features. Four of the ponds (4.2 acres) have been verified as jurisdictional waters of the U.S. by the Corps, and are also waters of the State of California (see the verified wetland delineation map in **Appendix H**).

Four inter-connected ponds occur on recently acquired parcels and parcels proposed for acquisition at the northern end of the Airport Study Area (Ponds 1 through 4). These ponds have edges of willow scrub/woodland habitat, as well as seasonal wetland fringes, and contain deep water through most of the year. Overflow from ponds drain toward Airport Creek. Two

inter-connected ponds are located in the southeast corner of the Airport Study Area north of Laughlin Road (Ponds 5 and 6). Pond 5 appears to be a dammed natural swale that receives local runoff and is relatively shallow. Pond 6 is a deeper excavated and dammed basin that drains southward toward Mark West Creek. Both ponds have willow scrub/woodland habitat along their edges and the Pond 6 supports an area of freshwater marsh.

A reservoir pond (Pond 7) is located in the vineyard southeast of the intersection of Laughlin Road and Slusser Road. This steep-sided reservoir is a dammed natural drainage that receives runoff from its local watershed, and appears to contain deep water through most of the year. Overflow from this reservoir drains westward via a drainage channel to Mark West Creek.

The ponds in the Airport Study Area are generally not suitable as breeding sites for native amphibians due to the observed or likely presence of American bullfrogs and predatory fishes. A large population of bullfrogs was observed in Pond 4. Largemouth bass, blue gill and bullfrogs were observed in Pond 5. A population of western pond turtles (*Emys marmorata*) was also observed in Pond 6. A wide variety of water birds has been observed in ponds in the Airport Study Area, including Canada goose, mallard, American widgeon, green-winged teal, bufflehead and pied-billed grebe.

Freshwater Marsh

Patches of freshwater marsh vegetation (0.5 acres) occur in the Airport Study Area adjacent to some seasonal wetlands and swales and ponds, and along stream channels. All of the marshes within the Airport Study Area have been verified as jurisdictional waters of the U.S. by the Corps, and are also waters of the State of California (see the Corps verified wetland delineation map in **Appendix H**).

The marshes are dominated by tall perennial marsh plants (up to 10 feet), primarily cattails and bulrushes (*Scirpus acutus* and *S. microcarpus*). Along the upper marsh edges, dense stands of shorter-statured marsh plants are found, such as sedges, creeping spikerush, and rushes. Most freshwater marsh habitats in the Airport Study Area are relatively small and are not mapped separately from adjacent wetland and aquatic habitats. One area mapped as freshwater marsh occurs along the northern portion of Pond 6 (see **Figure 3.4-1**). Freshwater marsh also occurs in small stands within wetlands in the infield area between the two runways and at the south end of Runway 1/19.

Freshwater marshes in the Airport Study Area provide habitat for a variety of wildlife species including Pacific treefrog, western pond turtle, and a variety of bird species such as Virginia rail, common yellowthroat (*Geothlypis trichas*) song sparrow, and red-winged blackbird. Mammals such as the common muskrat (*Ondatra zibethicus*) may occur in the Airport Study Area marshes.

Willow Scrub/Woodland

Willow scrub/woodland (9.5 acres) occurs in the Airport Study Area along the perimeters of ponds, along a drainage near the western boundary, and along a reach of Airport Creek (see **Figure 3.4-1**). Approximately 1.4 acres of willow scrub within the Airport Study Area have been verified as jurisdictional waters of the U.S. by the Corps, and are also waters of the State of California (see the Corps verified wetland delineation map in **Appendix H**).

This vegetation type is dominated by arroyo willow (*Salix lasiolepis*) and/or red willow (*Salix laevigata*). Other common aquatic and hydrophytic vegetation includes mosquito fern (*Azolla*

filiculoides), floating seedbox (*Ludwigia* sp.) and creeping spikerush (*Eleocharis macrostachya*). All the ponds in the Airport Study Area support willow scrub/woodland habitat. An approximately 350 linear foot reach of willow scrub/woodland along Airport Creek is regularly trimmed by the Airport for runway safety purposes.

Willow scrub/woodland in the Airport Study Area provides habitat for a variety of wildlife species, especially songbirds such as Bewick's wren (*Thryomanes bewickii*), Wilson's warbler (*Wilsonia pusilla*), and American goldfinch (*Spinus tristis*). Other birds found in this habitat include common yellowthroat and song sparrow. A variety of other migratory and wintering birds such as yellow-rumped warbler (*Dendroica coronata*) use willow scrub/woodland for foraging and shelter. Larger willows provide nesting/roosting habitat for water birds such as the black-crowned night heron.

Riparian Woodland

Riparian woodlands in the Airport Study Area occur along Redwood Creek, Airport Creek, Ordinance Creek, Pool Creek and Mark West Creek (see **Figure 3.4-1**). This vegetation type supports a fairly dense canopy of mature valley oak (*Quercus lobata*) and/or Oregon ash (*Fraxinus latifolia*); other trees and shrub species include coast live oak (*Quercus agrifolia*), red willow, arroyo willow, sandbar willow (*Salix exigua*), white alder (*Alnus rhombifolia*), non-native fruit trees (*Prunus* spp.), Siberian elm (*Ulnus pumila*), and walnut (probably a hybrid between northern California black walnut - *Juglans californica* var. *hindsii* and English walnut - *J. regia*). Understory vegetation includes poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus armeniacus*), California blackberry (*Rubus ursinus*), wild grape (*Vitis californica*), blue elderberry (*Sambucus mexicana*), and sedge (*Carex* sp.).

Riparian woodlands in the Airport Study Area support a wide diversity of native wildlife. Bird species that breed in the riparian woodlands have been observed in the Airport Study Area including Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), yellow warbler (*Dendroica petechia*), and acorn woodpecker (*Melanerpes formicivorus*). Riparian woodland areas that have a significant willow component are likely to support willow-associated bird species, such as Bewick's wren, Wilson's warbler, American goldfinch and common yellowthroat. Mammals such as mule deer (*Odocoileus hemionus*) and northern raccoon (*Procyon lotor*) use the riparian woodlands for shelter and foraging.

Oak Woodlands and Oak Trees

This vegetation type consists of small stands of valley oak trees and scattered individual oak trees that are not associated with riparian corridors (30.4 acres). This vegetation type is distinguished from the riparian woodland by the presence of occasional coast live oak trees, and an herbaceous understory dominated by non-native grasses and forbs of the same species as described under the non-native grassland/ruderal habitat. The understory also contains poison oak and Himalayan blackberry as common shrub species. Two of the largest oak woodland areas in the Airport Study Area are adjacent to the riparian woodlands along Lower Ordinance Creek and Airport Creek in the northwestern area of the Airport. The oak woodland area north of Airport Creek consists of a mix of valley oak trees and non-native fruit trees, primarily pears (*Pyrus* sp.) and plums that are remnants of an old orchard.

The oak woodlands within the Airport Study Area support the same mix of wildlife species associated with the riparian woodlands (see above). Amphibians and reptiles that commonly occur in oak woodlands and are likely to occur in the Airport Study Area include the California

slender salamanders (*Batrachoseps attenuatus*), arboreal salamander (*Aneides lugubris*), southern alligator lizard (*Elgaria multicarinata*), and ring-neck snake (*Diadophis punctatus*).

Rural Residential

Some of the recently acquired and future acquisition parcels within the Airport Study Area contain houses and other buildings, with ornamental trees and other landscaped areas (15.3 acres) (see **Figure 3.4-1**). Some of these sites also contain native valley oak trees. Rural residential areas tend to have less hardscape and more ornamental trees than Airport areas classified as “Developed” in **Figure 3.4-1**.

Ornamental Landscaping

Ornamental landscaping (8.5 acres) in the Airport Study Area generally occur adjacent to buildings, developed areas, and former farm homesteads on the off-site parcels in the northern, western and southwestern portions of the Airport Study Area. Ornamental trees include pines (*Pinus* sp.), acacia (*Acacia* sp.), sweetgum (*Liquidambar styraciflua*), lemon-scented gum (*Eucalyptus citriodora*), blue gum (*Eucalyptus globulus*), and apple trees (*Malus domestica*). Native valley oaks and occasionally other native trees are mixed with the ornamental trees. Ornamental trees also include redwood (*Sequoia sempervirens*), which is a native tree but is not local to the Airport Vicinity. Two large stands of blue gum (*Eucalyptus globulus*) occur in the southern portion of the Airport Study Area, encompassing 1.8 acres.

Cultivated Lands

A vegetable garden and plant nursery for the adjacent Sonoma County correctional facility occurs in the eastern portion of the Airport Study Area. Vineyards occur in the southwestern and southeastern corners of the Airport Study Area. These cultivated areas encompass 45.4 acres.

3.4.2.3 Sensitive Habitats

Sensitive habitats are especially diverse, regionally uncommon habitats as defined by the California Natural Diversity Database (CNDDDB) and/or regulated by CDFG or the Corps. Most sensitive habitats are given special consideration because they provide important ecological functions, including filtering of surface waters (wetlands) and providing essential habitat for common and special-status plant and wildlife species. Sensitive habitats within the Airport Study Area are the following: vernal pools and other seasonal wetlands, marshes, streams, riparian woodland, willow scrub woodland, and oak woodland.

3.4.2.4 Special-Status Species

The special-status species evaluated for the Proposed Project include state and/or federal listed Endangered and Threatened species, state and federal species proposed or candidates for listing, California Species of Concern, or California Rare Plants with rankings of 1A or 1B, and with rankings of 3 and 4 species which may be included as special-status species on the basis of local significance or recent biological information. Also included are animal species that do not fall in these categories but may qualify as “Rare” under Section 15380 of the *CEQA Guidelines*, based on their limited areas of occurrence.

The list contains all species listed by the USFWS for the Sebastopol, Healdsburg, Santa Rosa and Mark West Springs USGS 7.5-minute quadrangles, regardless of whether there are

occurrences or suitable habitat for these species in the Project Vicinity.²¹ The list also contains all species in the CNDDDB for the four USGS quadrangles cited above that occur in the Airport Vicinity or have a reasonable potential to occur based on their distribution and habitat requirements. All species evaluated are listed and discussed in **Table 3.4-1**. **Appendix H** provides more detailed species accounts, habitat descriptions and information on the presence or potential presence of each species.

Species descriptions are provided below for those plant species in **Table 3.4-1** having potentially suitable habitat within the Airport Study Area. The results of USFWS/CDFG protocol level botanical surveys within the Airport Study Area also are summarized for each species.

Plants

- **Baker's Navarretia (*Navarretia leucocephala* ssp. *bakeri*)** is an annual plant species that grows in vernal pools and other wet depressions. It is California Rare Plant Rank (CRPR) 1B species that is found in northern San Francisco Bay and Sacramento Valley counties, including Colusa, Glenn, Lake, Marin, Mendocino, Napa, Sebastopol, Solano, Sonoma, Sutter, Tehama, and Yolo counties. The closest known occurrence is approximately 0.1 mile northeast of the Airport near Sanders Road; it was last observed in 1993 (see **Figure 3.4-3**). Suitable habitat for this species is present in vernal pools and other seasonal wetlands in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of botanical surveys (see **Appendix H**).
- **Bent-flowered fiddleneck (*Amsinckia lunaris*)**. Is an annual plant species that grows in annual grasslands and woodlands. It is CRPR 1B species that is found in numerous northern California counties. There are no known occurrences on the Santa Rosa Plain; the nearest recorded occurrence in the CNDDDB is approximately 5.7 miles from the Airport. Suitable habitat for this species is present in annual grasslands and woodlands in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Bristly Sedge (*Carex comosa*)** is a perennial, rhizomatous herb that grows primarily in marshes and swamps, and along lake margins. It is a CRPR 2 species. There are no occurrences on the Santa Rosa Plain; the nearest recorded occurrence is an 1896 record approximately 8.2 miles from the Airport. Potentially suitable habitat is found in freshwater marshes, and possibly along the edges of ponds and creeks in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Burke's Goldfields** is an annual plant species that occupies vernal pools, swales, wet meadows, and seeps. It is a federal and state-listed Endangered species. With the exception of four occurrences from Lake County and one in Napa County, this species is confined to the Santa Rosa Plain where there are 25 known occurrences. The Airport Study Area contains both extant and historic occurrences of Burke's goldfields (see **Figure 3.4-4**). The extant occurrences are based on the surveys conducted from 2002 through 2010; the historic occurrences are based on pre-1988 observations. The historic

²¹ "Project Vicinity" is defined as the Airport Study Area as well as surrounding lands within the Santa Rosa Plain within an approximate 5-mile radius of the Airport perimeter. The Project Vicinity includes lands that may provide suitable habitat for listed species that could also access Airport lands.

**Table 3.4-1
SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT²²**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
Plants:			
Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	1B	Cismontane woodlands, lower montane coniferous forests, meadows, valley and foothill grasslands, vernal pools.	Suitable habitat in vernal pools, seasonal wetlands, and mesic grasslands; however this species does not occur in the Airport Study Area.
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	1B	Coastal bluff scrub, cismontane woodlands, grasslands.	Potentially suitable habitat in grasslands and woodlands; however this species does not occur in the Airport Study Area.
Bristly sedge <i>Carex comosa</i>	2	Marshes and swamps.	Potentially suitable habitat in freshwater marshes; however this species does not occur in the Airport Study Area.
Burke's goldfield <i>Lasthenia burkei</i>	FE, SE 1B	Vernal pools, swales, wet meadows, and seeps; in Sonoma, Mendocino, Napa and Lake Counties	Suitable habitat in vernal pools and seasonal wetlands. This species occurs in three existing populations and has been extirpated from several other historically recorded sites in the Airport Study Area (see Figure 3.4-4).
California beaked-rush <i>Rhynchospora californica</i>	1B	Freshwater marshes and swamps, meadows and seeps in several northern California counties, including Sonoma and Napa Counties.	Potentially suitable habitat in freshwater marshes and seasonal wetlands; however this species does not occur in the Airport Study Area.
Clara Hunt's milk-vetch <i>Astragalus clarianus</i>	FE, ST 1B	Chaparral, serpentinite grasslands and woodlands in Sonoma, Solano, Napa Counties.	No suitable habitat in the Airport Study Area.

FE – Listed as Endangered under the federal Endangered Species Act
 FT – Listed as Threatened under the federal Endangered Species Act
 SE – Listed as Endangered under the State of California Endangered Species Act
 ST – Listed as Threatened under the State of California Endangered Species Act
 CFP – State of California Fully Protected Species
 SSC – California Department of Fish and Game Species of Special Concern
 SSC (nesting) - California Department of Fish and Game Species of Special Concern when nesting.
 1B - Plants considered rare, threatened, or endangered in California and elsewhere, as ranked under the CRPR (California Rare Plant Rank) system.
 2 – Plants considered rare, threatened, or endangered in California but more common elsewhere under the CRPR system.
 4 - Plants of limited distribution, a watch list under the CRPR system

²² Table 3.4-1 includes all species contained in the CNDDDB for the Sebastopol, Healdsburg, Santa Rosa and Mark West Springs USGS 7.5 minute quadrangles with occurrences in the Project vicinity (i.e. lands on the Santa Rosa Plain within approximately 5-miles of the project site) or for which suitable habitat may occur in the Project vicinity. This table also includes all federally-listed species listed by the USFWS for the four quadrangles regardless of the proximity of suitable habitat.

Table 3.4-1
**SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
 CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT (cont.)**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
Gairdner's yampah (<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>)	4	Vernal pools, other seasonal wetlands and moist grasslands in numerous counties throughout California.	Suitable habitat in vernal pools and other seasonal wetlands; occurs in one location in the Airport Study Area – the SACMA Preserve (see Figure 3.4-4)
Jepson's leptosiphon <i>Leptosiphon jepsonii</i>	1B	Chaparral, cismontane woodlands with volcanic soils in several northern California counties, including Sonoma, Lake and Napa Counties.	No suitable habitat in the Airport Study Area.
Legenere <i>Legenere limosa</i>	1B	Vernal pools and other freshwater wetlands	Suitable habitat in vernal pools and other seasonal wetlands; however this species does not occur in the Airport Study Area.
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	4	Vernal pools and other seasonal wetlands and ponds.	Suitable habitat in vernal pools and other seasonal wetlands; however limited to two locations in the Airport Study Area (see Figure 3.4-4).
Many-flowered navarretia <i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	FE, SE 1B	Vernal pools situated on volcanic ash flows in Sonoma and Lake Counties.	Suitable habitat in vernal pools and seasonal wetlands; however this species does not occur in the Airport Study Area.
Marsh microseris <i>Microseris paludosa</i>	1B	Cismontane woodland, scrub, mesic valley and foothill grasslands.	Suitable habitat in seasonal wetlands and mesic grasslands; however this species does not occur in the Airport Study Area.
Narrow-anthered California brodiaea <i>Brodiaea californica</i> var. <i>leptandra</i>	1B	Broad-leafed upland forests, chaparral, and lower montane coniferous forests in several northern California counties, including Sonoma, Lake and Napa Counties.	No suitable habitat in the Airport Study Area.

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FT – Listed as Threatened under the federal Endangered Species Act

SE – Listed as Endangered under the State of California Endangered Species Act

ST – Listed as Threatened under the State of California Endangered Species Act

CFP – State of California Fully Protected Species

SSC – California Department of Fish and Game Species of Special Concern

SSC (nesting) - California Department of Fish and Game Species of Special Concern when nesting.

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2 – Plants considered rare, threatened, or endangered in California but more common elsewhere under the CRPR system.

4 - Plants of limited distribution, a watch list under the CRPR system

**Table 3.4-1
SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT (cont.)**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
Northern California black walnut <i>Juglans californica</i> var. <i>hindsii</i>	1B	Riparian woodlands, riparian scrub.	Potentially suitable habitat occurs along the Redwood and Airport Creek riparian corridors. A species of <i>Juglans</i> was observed in these corridors but is likely to be the introduced hybrid.
Papoose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i>	1B	Meadows and seeps, coastal prairie, mesic valley and foothill grasslands.	Potentially suitable habitat in seasonal wetlands, and mesic grasslands in Study Area. Species known to occur in the Airport Study Area in two locations (see Figure 3.4-4).
Pitkin Marsh lily <i>Lilium pardalinum</i> ssp. <i>pitkinense</i>	FE, SE 1B	Freshwater marshes with sandy soils. Only known extant populations occur at the Pitkin Marsh and one other marsh in Sonoma County.	No suitable habitat in the Airport Study Area.
Rincon ridge ceanothus <i>Ceanothus confusus</i>	1B	Closed-cone coniferous forests, chaparral, and cismontane woodlands; volcanic or serpentine soils on dry shrubby slopes in Sonoma, Mendocino, Napa and Lake Counties.	No suitable habitat in the Airport Study Area.
Round-headed beaked-rush <i>Rhynchospora globularis</i> var. <i>globularis</i>	2	Freshwater marshes and swamps in Sonoma County.	Potentially suitable habitat in freshwater marshes; however this species does not occur in the Airport Study Area.
Saline clover <i>Trifolium hydrophilum</i>	1B	Marshes and swamps, moist alkaline grasslands, vernal pools.	Potentially suitable habitat in seasonal wetlands, marshes and mesic grasslands; however this species does not occur in the Airport Study Area.
Seaside tarplant <i>Hemizonia congesta</i> ssp. <i>congesta</i>	1B	Coastal scrub, valley and foothill grasslands in northern California counties.	Potentially suitable habitat in grasslands; however this species does not occur in the Airport Study Area.

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Table 3.4-1
**SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
 CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT (cont.)**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
Showy rancheria clover <i>Trifolium amoenum</i>	FE, 1B	Coastal bluffs, grasslands, including serpentine grasslands in several northern California counties.	Marginally suitable habitat in grasslands; however this species does not occur in the Airport Study Area.
Sonoma alopecurus <i>Alopecurus aequalis</i> var. <i>sonomensis</i>	FE, 1B	Freshwater marshes and riparian scrub in Sonoma and Marin Counties.	Potentially suitable habitat in seasonal wetlands, marshes and willow scrub; however this species does not occur in the Airport Study Area.
Sonoma sunshine <i>Blennosperma bakeri</i>	FE, SE 1B	Vernal pools and swales; endemic to the Santa Rosa Plain.	Suitable habitat in vernal pools and seasonal wetlands; however this species does not occur in the Airport Study Area. No historic occurrences.
Vine Hill ceanothus <i>Ceanothus foliosus</i> var. <i>vineatus</i>	1B	Sandy, acidic soil in chaparral.	No suitable habitat in the Airport Study Area.
Vine Hill clarkia <i>Clarkia imbricata</i>	FE, SE 1B	Chaparral, grasslands on acidic soils in Sonoma County.	No suitable habitat in the Airport Study Area.
White beaked-rush <i>Rhynchospora alba</i>	2	Freshwater marshes, bogs, seeps, wet meadows.	Potentially suitable habitat in marshes; however this species does not occur in the Airport Study Area.
White sedge <i>Carex albida</i>	FE, SE 1B	Freshwater marshes, swamps and bogs. Only known extant population occurs at the Pitkin Marsh in Sonoma County.	Potentially suitable habitat in marshes; however this species does not occur in the Airport Study Area.

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ST – Listed as Threatened under the State of California Endangered Species Act

CFP – State of California Fully Protected Species

SSC – California Department of Fish and Game Species of Special Concern

SSC (nesting) - California Department of Fish and Game Species of Special Concern when nesting.

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**Table 3.4-1
SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT (cont.)**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
Animals:			
Invertebrates			
California freshwater shrimp <i>Syncaris pacifica</i>	FE, SE	Perennial creeks with pools (12-36 inches deep) and undercut banks with exposed live root tangles. Species requires non-degraded creeks without introduced aquatic predators. Not known to occur in creeks in the vicinity of the Airport, however Mark West Creek may provide suitable habitat for this species.	Not likely to occur in the Airport Study Area due to lack of suitable habitat; Redwood and Airport Creeks do not provide suitable habitat conditions for this species due to degraded conditions and lack of undercut banks.
Fish			
California coastal chinook salmon ESU <i>Oncorhynchus tshawytscha</i>	FT	Clear cool riffles with gravel or cobble substrate for spawning; clear, cool riffles and pools as rearing habitat. Does not occur in creeks in the vicinity of the Airport.	Not likely to occur in the Airport Study Area due to lack of suitable habitat. Creeks within the Airport Study Area (Redwood and Airport Creeks) are warm water creeks with muddy bottoms that do not provide suitable spawning or rearing habitat.
Central California Coast coho salmon ESU <i>Oncorhynchus kisutch</i>	FE, SE	Clear cool riffles with gravel or cobble substrate for spawning; clear, cool riffles and pools as rearing habitat. Windsor, Pool and Mark West Creeks are NMFS Critical Habitat for this species. Other tributaries of these creeks are potential Critical Habitat if the tributaries are accessible to salmonids.	Not likely to occur in the Airport Study Area due to lack of suitable habitat. Creeks within the Airport Study Area (Redwood and Airport Creeks) are warm water creeks with muddy bottoms that do not provide suitable spawning or rearing habitat.

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 FT – Listed as Threatened under the federal Endangered Species Act
 SE – Listed as Endangered under the State of California Endangered Species Act
 ST – Listed as Threatened under the State of California Endangered Species Act
 CFP – State of California Fully Protected Species
 SSC – California Department of Fish and Game Species of Special Concern
 SSC (nesting) - California Department of Fish and Game Species of Special Concern when nesting.
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Table 3.4-1
**SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
 CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT (cont.)**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
Central California Coast steelhead ESU <i>Oncorhynchus mykiss</i>	FT	Clear cool riffles with gravel or cobble substrate for spawning; clear, cool riffles and pools as rearing habitat. Occur in Windsor Creek, downstream of Redwood and Airport Creeks, as well as Pool Creek and Mark West Creek. Windsor, Pool and Mark West Creeks are NMFS Critical Habitat for this species.	Not likely to occur in the Airport Study Area due to lack of suitable habitat. Creeks within the Airport Study Area (Redwood and Airport Creeks) are warm water creeks with muddy bottoms that do not provide suitable spawning or rearing habitat.
Central Valley steelhead ESU <i>Oncorhynchus mykiss</i>	FT	Clear cool riffles with gravel or cobble substrate for spawning; clear, cool riffles and pools as rearing habitat. Does not occur in creeks in the vicinity of the Airport, nor on the Santa Rosa Plain.	Does not occur within the Airport Study Area.
Central Valley spring-run chinook salmon ESU <i>Oncorhynchus tshawytscha</i>	FT, ST	Clear cool riffles with gravel or cobble substrate for spawning; clear, cool riffles and pools as rearing habitat. Does not occur in creeks in the vicinity of the Airport, nor on the Santa Rosa Plain.	Does not occur within the Airport Study Area.
Sacramento River winter-run chinook salmon ESU <i>Oncorhynchus tshawytscha</i>	FE, SE	Clear cool riffles with gravel or cobble substrate for spawning; clear, cool riffles and pools as rearing habitat. Does not occur in creeks in the vicinity of the Airport, nor on the Santa Rosa Plain.	Does not occur within the Airport Study Area.
Amphibians			
California red-legged frog <i>Rana draytonii</i>	FT, SSC	Freshwater marshes, streams, ponds, and other semi-permanent water sources. Suitable breeding ponds and pools usually have a minimum depth of 20 inches, and must contain water during the entire development period for eggs and tadpoles (typically March through August). No records of occurrence in the Airport vicinity nor anywhere on the Santa Rosa Plain.	Not likely to occur in the Airport Study Area due to lack of suitable habitat. Aquatic habitat areas in the Airport Study Area are not suitable for breeding due to an abundance of bullfrogs and predatory fishes.

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FT – Listed as Threatened under the federal Endangered Species Act

SE – Listed as Endangered under the State of California Endangered Species Act

ST – Listed as Threatened under the State of California Endangered Species Act

CFP – State of California Fully Protected Species

SSC – California Department of Fish and Game Species of Special Concern

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**Table 3.4-1
SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT (cont.)**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
California tiger salamander <i>Ambystoma californiense</i>	FE, ST	Vernal pools or other fish-free ephemeral water bodies with sufficient hydroperiods for larval development; adjacent uplands with an abundance of small mammal burrows as non-breeding season habitat. Occurs on the Santa Rosa Plain – this population is considered genetically distinct from other populations in the State (“Distinct Population Segment” - DPS). The Airport is within the USFWS proposed Critical Habitat area for this DPS.	Airport Study Area contains suitable movement and dispersal habitat. However, this species is unlikely to occur in the Airport Study Area due to distance from the nearest known breeding site (3.2 miles) and lack of suitable breeding habitat.
Reptiles			
Western pond turtle <i>Emys marmorata</i>	SSC	Ponds, marshes, and streams with deep pools with basking sites and suitable upland areas outside the flood zone with friable soils for egg laying.	Observed in Pond 6 and in Airport Creek (see Figure 3.4-4). May also occur in other ponds in the Airport Study Area and in deep pools in Redwood and Ordinance Creeks.
Birds			
Burrowing owl <i>Athene cunicularia</i>	SSC burrow & some wintering sites	Open habitat, nests and roosts primarily in ground squirrel burrows, but will use other natural or artificial underground retreats. Ground squirrel burrow complexes provide the most important source of shelter and nesting sites.	Observed within the Airport Study Area in 2003 (see Figure 3.4-4). Is likely to occur occasionally in the Airport Study Area as a winter visitor or migrant; not known to nest there. The absence of ground squirrels in the Study Area greatly reduces habitat suitability for burrowing owl nesting.
Loggerhead shrike <i>Lanius ludovicianus</i>	SSC nesting	Open habitat, such as grasslands and ranchlands with scattered trees or shrubs for nesting; uses fences or other elevated perch sites.	Not observed within the Airport Study Area, however the Airport Study Area provides suitable nesting and foraging habitat.

FE – Listed as Endangered under the federal Endangered Species Act

FT – Listed as Threatened under the federal Endangered Species Act

SE – Listed as Endangered under the State of California Endangered Species Act

ST – Listed as Threatened under the State of California Endangered Species Act

CFP – State of California Fully Protected Species

SSC – California Department of Fish and Game Species of Special Concern

SSC (nesting) - California Department of Fish and Game Species of Special Concern when nesting.

1B - Plants considered rare, threatened, or endangered in California and elsewhere, as ranked under the CRPR (California Rare Plant Rank) system.

2 – Plants considered rare, threatened, or endangered in California but more common elsewhere under the CRPR system.

4 - Plants of limited distribution, a watch list under the CRPR system

Table 3.4-1
**SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
 CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT (cont.)**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
Northern harrier <i>Circus cyaneus</i>	SSC nesting	Forages over open habitats, such as grasslands, pastures, marshes, and fields with large populations of voles and other small rodents. Nests on the ground in similar habitat. This species is a fairly common resident in Sonoma County with an increase in numbers as migrants arrive as winter visitors.	Observed within the Airport Study Area. Suitable nesting habitat is present within the Airport Study Area's grasslands.
Northern spotted owl <i>Strix occidentalis caurina</i>	FT, SSC	Old-growth forests with tree canopies that are high and open enough for the owls to fly between and underneath the trees. Preferred areas have large trees with broken tops, deformed limbs or large holes used as nesting sites.	Does not occur in the Airport Study Area due to lack of suitable habitat.
Tri-colored blackbird <i>Agelaius tricolor</i>	SSC nesting colonies	Nests in colonies of large stands of freshwater marsh vegetation, has nested in large patches of thistle and other rank green weedy growth.	Suitable habitat present in marsh areas but not observed within the Airport Study Area. Unlikely to occur as a nesting species due to the small extent of freshwater marshes.
White-tailed kite <i>Elanus leucurus</i>	CFP	Forages over open habitats, such as grasslands, pastures, and fields with large populations of voles and other small rodents. Nests in isolated trees and along the edges or woodlands near open areas.	Observed within the Airport Study Area and may nest in isolated willow stands or in the riparian woodlands along Redwood, Airport and Ordinance Creeks.
Yellow warbler <i>Dendroica petechia brewsteri</i>	SSC nesting	Nests in large stands of willow riparian woodlands.	Observed within the Airport Study along the Airport Creek riparian corridor. Nesting could occur within the willow scrub and riparian woodland areas.
Yellow-breasted chat <i>Icteria virens</i>	SSC nesting	Nests in large stands of willow riparian woodlands with dense understory.	Not observed within the Airport Study Area. Nesting could occur within the willow scrub and riparian woodland areas.

FE – Listed as Endangered under the federal Endangered Species Act

FT – Listed as Threatened under the federal Endangered Species Act

SE – Listed as Endangered under the State of California Endangered Species Act

ST – Listed as Threatened under the State of California Endangered Species Act

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Table 3.4-1
**SPECIAL STATUS PLANT AND ANIMAL SPECIES REVIEWED FOR THE
 CHARLES M. SCHULZ - SONOMA COUNTY AIRPORT (cont.)**

Species	Status	Habitat	Occurrence or Potential for Occurrence in Airport Study Area
Mammals			
American Badger <i>Taxidea taxus</i>	SSC	Open country, grasslands, pasture, and open woodlands with friable soils and abundant small mammal populations	Potentially suitable habitat in grasslands in the Airport Study Area, but is generally rare on the Santa Rosa Plain. No potential dens observed within the Airport Study Area.
Pallid bat <i>Antrozous pallidus</i>	SSC	Roosts in crevices in rock outcrops; in expansion joints under bridges; in hollows in large old trees, and occasionally in old buildings. Forages on large terrestrial insects in open habitats.	Not observed within the Airport Study. Could forage within the Airport Study Area, but suitable roosting habitat is minimal. There are no rocky outcrops or large trees with suitable cavities for roosting, but old out-buildings in the southeastern corner of the Study Area and the abandoned bunker near Taxiway B may have roosting potential.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC	Roosts in old buildings, mines, and caves; forages over a variety of habitat types.	Not observed within the Airport Study. Could forage within the Study Area, but suitable roosting habitat is minimal. There are no rocky outcrops, but old out-buildings in the southeastern corner of the Study Area and the abandoned bunker near Taxiway B may have some roosting potential.

FE – Listed as Endangered under the federal Endangered Species Act

FT – Listed as Threatened under the federal Endangered Species Act

SE – Listed as Endangered under the State of California Endangered Species Act

ST – Listed as Threatened under the State of California Endangered Species Act

CFP – State of California Fully Protected Species

SSC – California Department of Fish and Game Species of Special Concern

SSC (nesting) - California Department of Fish and Game Species of Special Concern when nesting.

1B - Plants considered rare, threatened, or endangered in California and elsewhere, as ranked under the CRPR (California Rare Plant Rank) system.

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4 - Plants of limited distribution, a watch list under the CRPR system

SOURCE: LSA Associates, 2011

PREPARED BY: LSA Associates, 2011

occurrences of Burke's goldfields have largely been extirpated from the Airport, with the exception of those described in the next paragraph. The extirpation of these historic sub-populations has been due to past Airport development and operational activities or other unknown causes.

Vernal pools and other seasonal wetlands in the Airport Study Area provide suitable habitat for Burke's goldfields; sub-populations occur in three locations, some of which are designated as protected preserves: the SACMA Preserve, Goldfields Preserve, and the Runway 14/32 Wetland Preserve (see **Figure 3.4-4**). The total population of Burke's goldfields in the Airport Study Area is estimated to be in excess of 250,000 plants (see **Appendix H**).

- **California Beaked-rush (*Rhynchospora californica*)** is a perennial herb that occurs in freshwater marshes, swamps and wet meadows. It is a CRPR 1B species that is endemic to California, but is not known to occur on the Santa Rosa Plain. The nearest recorded occurrence is approximately 3 miles from the Airport. Potentially suitable habitat is found in freshwater marshes, and possibly along the edges of ponds and creeks in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Dwarf Downingia (*Downingia pusilla*)** is an annual herb that grows in vernal pools, playa pools, on margins of vernal lakes and other mesic areas within valley and foothill grassland, and grows in both alkaline (saline) and non-alkaline soils. It is a CRPR 2 species that occur in multiple California counties. Sonoma County is the only coastal county known to support this species. The closest occurrence is approximately 0.1 mile from the Airport at constructed wetlands where this species was inoculated; the next closest occurrence is 0.4 mile from the Study Area and this occurrence is extirpated (see **Figure 3.4-3**). Suitable habitat for this species is present in vernal pools and other seasonal wetlands in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*)** is a perennial herb that occurs in vernal pools, other seasonal wetlands and moist grasslands. It is a CRPR 4 species that is endemic to California and rare on the Santa Rosa Plain. There is one occurrence of this species within the Airport Vicinity. Potentially suitable habitat occurs in vernal pools and other seasonal wetlands within the Airport Study Area. One population of this plant species occurs in the Airport Study Area within the SACMA Preserve (see **Figure 3-4.4** which will not be affected by the Proposed Project).
- **Legenere (*Legenere limosa*)** is an annual herb that occurs almost exclusively in vernal pools. It is a CRPR 1B species. The nearest CNDDDB-documented occurrence is approximately 6.6 miles from the Airport. Potentially suitable habitat for this species is found in vernal pools in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Lobb's Aquatic Buttercup (*Ranunculus lobbii*)** is a CRPR 4 species. It is an annual herb that occurs in vernal pools and other seasonal wetlands and ponds. This species is endemic to California and occurs commonly in vernal pools in Sonoma County and the Santa Rosa Plain. There are numerous occurrences of this species within the Airport Vicinity. Potentially suitable habitat occurs in vernal pools and other seasonal wetlands in the Airport Study Area. Two populations of this plant species occur in the Airport

Study Area (see **Figure 3.4-4**); both are within seasonal wetlands not located within the project disturbance area.

- **Many-flowered Navarretia (*Navarretia leucocephala* ssp. *plieantha*)** is an annual plant species that occupies vernal pools situated on soils derived from volcanic ash flows. It is a federal and state-listed Endangered species that is endemic to Lake and Sonoma Counties. It is known from seven locations, five in Lake County and two in Sonoma County. The only known occurrence on the Santa Rosa Plain is located near Sanders Road approximately 0.3 mile northeast of the Airport (see **Figure 3.4-2**). Suitable habitat is present in vernal pools and other seasonal wetlands in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Marsh Microseris (*Microseris paludosa*)** is a perennial herb that inhabits mesic grasslands, seasonal wetlands and coastal scrub habitats. It is a CRPR 1B species that is known to occur in Mendocino, Monterey, Marin, San Benito, Santa Cruz, San Luis Obispo, and Sonoma counties. The closest known CNDDDB occurrence is approximately 2.8 miles north of the Airport near old Redwood Highway, but it was last observed in 1949, and may be extirpated (see **Figure 3.4-3**). Suitable habitat is present in vernal pools and other seasonal wetlands and grasslands in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Northern California Black Walnut (*Juglans californica* var. *hindsii*)** is a tree that occurs in deep alluvial soil associated with riparian forests and riparian woodlands. It is a CRPR 1B species where it occurs naturally (rather than as a planted species). There are no CNDDDB occurrences of this species within the Airport Vicinity, nor within Sonoma County. There is only one confirmed natural occurrence of this species as of 2003 (in Napa County). Observed occurrences in other counties are questionable, given the widespread planting of this species and its proclivity to readily hybridize with the cultivated variety, *J. regia*; there are six reported occurrences in Sonoma County that fall in the questionable category^{23,24}. Botanical surveys in the Airport Study Area found walnut trees with the morphological characteristics of var. *hindsii* occurring along Airport Creek and Lower Ordinance Creek. However, the trees are likely to be a hybrid with English walnut (*J. regia*), with which the native species readily hybridizes, and/or introduced.
- **Pappose tarplant (*Centromadia parryi* ssp. *parryi*)** is an annual herb that occurs in wet meadows, seeps, and grasslands. It is a CRPR 1B species that is known to occur in nine locations in Sonoma County. The nearest off-site occurrence to the Airport is approximately 4.5 mile to the south in the central area of the Santa Rosa Plain. Potentially suitable habitat occurs in seasonal wetlands, and mesic grasslands in the Airport Study Area. Two populations of this plant species occur in the Airport Study Area - one at the SACMA Preserve and one at the recently-acquired parcel north of Airport Creek south of Sanders Road, which had a population estimated to be approximately 200 plants in 2009 (see **Figure 3.4-4**).
- **Round-headed Beaked-rush (*Rhynchospora globularis* var. *globularis*)** is a perennial herb that occurs in freshwater marshes and swamps. It is a CRPR 2 species that is known to occur only in Sonoma County on the Santa Rosa Plain. The nearest recorded occurrence is approximately 3 miles from the Airport. Potentially suitable habitat for this species is found in freshwater marshes in the Airport Study Area;

²³ California Native Plant Society (CNPS). 2011. *Inventory of Rare and Endangered Plants* (online edition, v8-01a). California Native Plant Society. Sacramento, CA. Accessed July 13, 2011.

²⁴ Calflora, *Search for Plant Occurrence*, available at: <http://www.calflora.org/cgi-bin/occform.cgi>. Accessed July 13, 2011.

however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).

- **Saline Clover (*Trifolium depauperatum* var. *hydrophilum*)** is an annual herb that grows in salt marshes and in alkaline soils in moist valley and foothill grasslands and vernal pools. It is a CRPR 1B species that is found in all central coast counties, from San Luis Obispo County to Sonoma County, except in San Francisco County. The closest known occurrence is extirpated one located approximately 4.4 miles southeast of the Airport (see **Figure 3.4-3**). Suitable habitat for this species is found in vernal pools and grasslands in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Sebastopol Meadowfoam** is an annual species that occurs in vernal pools and other seasonal wetlands. It is a federal and state-listed Endangered species that is endemic to the vicinity of the Santa Rosa Plain, with the exception of one population (likely introduced) in Napa County. The distribution of Sebastopol meadowfoam occurs mainly in the central and southern portions of the Plain, south of Santa Rosa Creek. Suitable habitat is present in vernal pools and other seasonal wetlands in the Airport Study Area; however, the species is absent from the Airport Study Area (see **Appendix H**). One historic occurrence (now extirpated) is recorded in the Airport Study Area in a swale in the Goldfields Preserve (see **Figure 3.4-4**).
- **Showy Rancheria Clover (*Trifolium amoenum*) (a.k.a “showy Indian clover”)** is an annual plant that occurs along coastal bluffs and in grassland habitats. It is federally-listed as Endangered and is a CRPR 1B species. Although there were 23 known historical occurrences of showy rancheria clover in 5 Bay Area counties, most if not all are believed to have been extirpated by the late-1980s. The nearest extant occurrence is in Marin County, approximately 13 miles from the Airport. Potentially suitable habitat is found in grasslands in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Sonoma Alopecurus (*Alopecurus aequalis* var. *sonomensis*)** is a perennial grass species that occurs in freshwater marshes and riparian scrub habitats. It is federally-listed as Endangered and is a CRPR 1B species. There are 27 CNDDDB historical occurrences of Sonoma alopecurus in Sonoma and Marin Counties; many of these occurrences are historic records that may no longer be extant. The closest recorded occurrence to the Airport is approximately 10 miles to the south. This occurrence was last seen in 1974 and may no longer be extant. Marginally suitable habitat is found in marshes and willow scrub vegetation in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **Sonoma Sunshine (*Blennosperma bakeri*)** is an annual species that occupies vernal pools, swales and other seasonal wetlands. It is a federal and state-listed Endangered species that is endemic to Sonoma County and is largely confined to the Santa Rosa Plain. The closest known occurrence of Sonoma sunshine to the Airport is a transplanted population approximately 0.2 miles to the northeast (see **Figure 3.4-2**). Suitable habitat is present in vernal pools and other seasonal wetlands and grasslands in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).
- **White Beaked-rush (*Rhynchospora alba*)** is a perennial herb that occurs in freshwater marshes, bogs and wet meadows. It is a CRPR 2 species that is not known to occur on the Santa Rosa Plain. The nearest recorded occurrence is approximately 3 miles from

the Airport. Potentially suitable habitat for this species is found in freshwater marshes and possibly along the edges of ponds and creeks in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).

- **White Sedge (*Carex albida*)** is a perennial herb that occurs in freshwater marshes, swamps and bogs. It is a federal and state-listed Endangered species that historically occurred in four populations, all in Sonoma County. It is presumed extant at two locations (upper and lower Pitkin Marsh, approximately 3.5 miles from the Airport. The closest historic occurrence (now believed extirpated) was along Santa Rosa Creek approximately 3.0 miles south of the Airport Study Area. Potentially suitable habitat for this species is found in freshwater marshes and possibly along the edges of ponds and creeks in the Airport Study Area; however, the species is absent from the Airport Study Area based on the results of multiple seasons of protocol-level botanical surveys (see **Appendix H**).

Of the 29 special-status plant species described above in **Table 3.4-1**, a total of 23 were determined to be absent from the Airport Study Area due to a lack of suitable habitat and/or based on the results of protocol-level surveys. These species are the following:

- Baker's navarretia;
- Bent-flowered fiddleneck;
- Bristly sedge;
- California beaked-rush;
- Clara Hunt's milk-vetch;
- Dwarf downingia;
- Jepson's leptosiphon;
- Narrow-anthered California brodiaea;
- Legenere;
- Many-flowered navarretia
- Marsh microseris;
- Northern California black walnut;
- Pitkin Marsh lily;
- Rincon Ridge ceanothus;
- Round-headed beaked-rush;
- Saline clover;
- Seaside tarplant;
- Showy rancheria clover;
- Sonoma alopecurus;
- Vine Hill ceanothus;
- Vine Hill clarkia;
- White beaked-rush; and
- White sedge.

Six special status plant species were either found to be present within the Airport Study Area or have special mitigation requirements due to the presence of suitable habitat. These six species are the pappose tarplant, Lobb's aquatic buttercup, Gairdner's yampah, Burke's goldfields, Sebastopol meadowfoam, and Sonoma sunshine. Pappose tarplant, Lobb's aquatic buttercup, Gairdner's yampah, and Burke's goldfields were found during protocol-level surveys and are discussed in **Section 3.4.3**.

Sebastopol meadowfoam and Sonoma sunshine were determined to be absent based on the results of protocol-level surveys. However, because suitable habitat is present within the Airport Study Area, the Conservation Strategy and PBO require further analysis, which is included below in **Section 3.4.3**.

Animals

Species descriptions are provided below for those animal species in **Table 3.4-1** having suitable habitat within the Airport Study Area or in the vicinity of the Airport. The results of field assessments of habitat suitability and/or field sampling surveys are also summarized for each species. For salmonids, this section includes only those species that are present in the Project Vicinity, downstream of the Airport Study Area.

Invertebrates

- **California Freshwater Shrimp (*Syncaris pacifica*)** is a federal and state-listed Endangered species that occurs in low elevation perennial creeks in Marin, Sonoma, and Napa Counties. Optimal habitat is found in creeks that are 12 to 36 inches deep with exposed live roots of trees, such as alder (*Alnus* sp.), and willow (*Salix* sp.), along completely submerged undercut banks with overhanging vegetation and vines. During the winter, shrimp are found beneath the undercut banks among the fine roots or overhanging vegetation where they shelter from high water velocities. During the summer, shrimp may become restricted to deeper pools as the creeks begin to dry. These pools also generally have overhanging vegetation on which the shrimp forage for fine particulate matter.

In Sonoma County, California freshwater shrimp are known to have occurred or currently occur in 11 creeks; however there are no creeks in the vicinity of the Airport that are known to support California freshwater shrimp. The three closest creeks known to support California freshwater shrimp are over five miles away. Mark West Creek, located just south of the Airport Study Area, may also provide suitable habitat for California freshwater shrimp, based on the prevalence of exposed roots and vegetation extending into the water, and the creek's historic perennial flows.

Creeks within the Airport Study Area do not provide suitable habitat for California freshwater shrimp due to a lack of undercut banks that are needed to provide refuge during high flows, and due to a paucity of exposed roots and vegetation extending into the water on which the shrimp can move and forage (see **Appendix H**). The creeks did not provide suitable historical habitat because of their original ephemeral conditions. Their current more perennial hydrology appears to be associated primarily with urban runoff from the extensive developed and landscaped areas upstream of the Airport and winter storm flows. Additionally, California freshwater shrimp are highly vulnerable to habitat degradation and introduced aquatic predators. All of the creek segments assessed in the Airport Study Area are degraded to varying degrees by upstream uses (agriculture, urban and road drainage, and flood control activities), increased sedimentation, pollution from highway runoff, and/or the presence of non-native aquatic predators. All the above factors indicate that California freshwater shrimp are absent from the Airport Study Area.

Fish

- **Central California Coast Evolutionary Significant Unit (ESU) of steelhead (*Oncorhynchus mykiss*) – Steelhead** - is federally-listed as Threatened and is a California Species of Special Concern. Steelhead is a native salmonid of the North Pacific Ocean and the associated fresh water drainages of western North America. Steelhead historically inhabited most coastal creeks and rivers from Alaska to California, as well as inland rivers and creeks in the Pacific drainage.

Steelhead require specific types of habitat for nest (“redd”) building and spawning, for successful incubation of the eggs, and for feeding and rearing of juveniles prior to their becoming smolts and making their downstream migration to the sea. Steelhead spawn in streams with coarse, clean, well-oxygenated gravel for making redds and spawning. After emerging from the gravel, juvenile steelhead continue to require well-aerated, cool, clean water free from excessive loads of sediment, as well as a supply of invertebrate food and shelter for resting and protection from predators.

Steelhead fry are inclined to occupy riffles; however, in small California streams, such as Windsor Creek, riffle surface areas greatly diminish during the dry season relative to pools, and steelhead occur mainly in pools in these instances. Steelhead eggs hatch in three to four weeks. Juvenile steelhead typically spend one to two years rearing in freshwater before migrating to estuarine areas as smolts and then into the ocean to feed and mature.

Steelhead occur in suitable habitat throughout the Russian River drainage; however, spawning areas are concentrated in the middle and upper reaches of its tributary streams. Most steelhead enter the Russian River from December to February, but often remain in the main river for extended periods and do not enter smaller tributary streams, including Windsor and Mark West Creeks, until runoff events occur. Although suitable spawning habitat is present mainly in the tributary streams (e.g., Mark West Creek), the river and its major tributaries are essential movement corridors for fish migrating up and downstream to and from the spawning areas. In the Airport Vicinity, steelhead occur (depending on the season) in the Laguna de Santa Rosa, Mark West Creek, Pool Creek and Windsor Creek (see **Figure 3.4-2**).

Pool Creek (immediately northeast of the Airport), Windsor Creek (to which Airport Creek flows approximately 0.7 miles downstream of the Airport) and Mark West Creek (immediately south of the Airport) are all designated by the NMFS as Critical Habitat for steelhead (see Figure 3.4-2). There are no records of steelhead from Redwood or Airport Creeks. These creeks do not contain suitable spawning, rearing, or migration habitat for steelhead. Both creeks are warm water bodies that were probably ephemeral before upstream development and associated landscaping provided a perennial water source through urban runoff. Field observations and sampling data demonstrated the unsuitability of Redwood and Airport Creeks as habitat for steelhead or other salmonids (see **Appendix H**). Both creeks were observed to be slow flowing with mud banks and bottoms. Suitable spawning, rearing, or migration habitat for steelhead was not found; there were no observed riffle areas with suitable coarse gravelly spawning beds. In 2011, biologists sampled both creeks within the Airport Study Area, as well as upstream and downstream of the study area during the period when salmonids could potentially be

present as juveniles (summer).²⁵ Sampling results indicated that the only fish species present are those associated with warm water bodies, such as threespine stickleback (*Gasterosteus aculeatus*), fathead minnows (*Pimephales promelas*), and western mosquito fish (*Gambusia affinis*). All the above factors indicate that steelhead do not occur in Redwood and Airport Creeks within the Airport Study Area.

- Central California Coast Evolutionary Significant Unit (ESU) of Coho Salmon (*Oncorhynchus kisutch*) is a federal and State Endangered species. The coho salmon is an anadromous salmonid species. In contrast to the life history patterns of other anadromous salmonids, coho salmon on the west coast of North America generally exhibit a relatively simple 3-year life cycle. Adults typically begin their freshwater spawning migration in the late summer and fall, spawn by mid-winter, and then die. Juveniles rear in fresh water for up to 15 months, then migrate to the ocean as “smolts” in the spring. Coho salmon typically spend two growing seasons in the ocean before returning to their natal streams to spawn as 3 year-olds. Sufficient quantities of well-oxygenated water that is present year round, free of excessive suspended sediments and other pollutants are essential to the survival of coho salmon.

Coho salmon occur in suitable habitat in the Russian River drainage, including Mark West Creek where their numbers appear to have been enhanced by a local captive broodstock program.²⁶ Coho salmon enter the Russian River from mid-November to February. Although suitable spawning habitat is present mainly in the tributary streams (e.g., the upper Mark West Creek watershed), the river and its major tributaries are essential movement corridors for fish migrating up and downstream to and from the spawning areas. There are no records of coho salmon from Redwood or Airport Creeks. As described above, these creeks do not contain suitable spawning, rearing, or migration habitat for coho salmon, and no evidence of salmonids was found during stream sampling.

Amphibians

- **California Red-legged Frog (*Rana draytonii*) – CRLF** – is federally-listed as Threatened and is a California Species of Special Concern. CRLF occur in and along freshwater marshes, streams, ponds, and other semi-permanent water sources. Optimal habitat contains dense emergent or shoreline riparian vegetation closely associated with deep (i.e., greater than 2.3 ft), still, or slow-moving water. Suitable breeding ponds and pools usually have a minimum depth of 20 inches, but CRLF sometimes breed successfully in pools as shallow as 10 inches. Regardless of water depth, suitable breeding habitat must contain water during the entire development period for eggs and tadpoles (typically March through August). Adjacent upland habitats are also important to CRLF since they are used by adult and juvenile CRLF for estivation, and dispersal to other aquatic habitats. During times of dispersal, CRLF are known to relocate more than one mile away from breeding sites through upland habitats to reach other sources of water.

²⁵ LSA 2011. Results of Salmonid Field Survey of Airport and Redwood Creeks in the Vicinity of the Charles M. Schulz Sonoma County Airport. Memo-report to Jon Stout, Airport Manager. July 15, 2011.

²⁶ University of California, *Russian River Coho Salmon Captive Broodstock Program*, available at: <http://ucanr.org/sites/RussianRiverCoho/>. Accessed July 21, 2011.

CRLF are locally abundant within portions of the San Francisco Bay area and the central coast. There are no recorded occurrences of CRLF in the vicinity of the Airport, nor anywhere on the Santa Rosa Plain. The nearest known occurrence is approximately 12.7 miles southeast of the Airport Study Area in Ledson Marsh in Anadel State Park. Ponds and creek channels in the Airport Study Area are unlikely to provide suitable habitat for CRLF breeding and rearing due to the presence of non-native aquatic species such as American bullfrogs, largemouth bass, and bluegill. Additionally, there are no historical records of this species in the Windsor and Mark West Creek watersheds, nor anywhere on the Santa Rosa plain. All the above factors indicate that CRLF are absent from the Airport Study Area.

- **California Tiger Salamander (*Ambystoma californiense*) - CTS** - The Sonoma County Distinct Population Segment of the CTS is a federally-listed endangered species and state-listed as Threatened. Suitable habitat for CTS occur within seasonal wetlands, vernal pools, or slow-moving, calm streams that typically do not support fish, bullfrogs, red swamp crayfish (*Procambarus clarkii*), or signal crayfish (*Pacifastacus leniusculus*). Upland habitat with small mammal burrows must be adjacent or near to the breeding habitat. CTS spend the majority of their lives in the burrows of California ground squirrel (*Spermophilus beecheyi*) or Botta's pocket gopher burrows, or in other suitable underground retreats. On the Santa Rosa Plain, where California ground squirrels appear to be absent or very rare, CTS primarily use pocket gopher burrows. CTS emerge from their burrows on only a few nights each year during the rainy season to migrate to their breeding ponds. Breeding ponds and streams usually hold water through the month of May to allow time for larvae to fully metamorphose.

The majority of CTS occurrence records on the Santa Rosa Plain are located southwest of Santa Rosa, over 7.5 miles south of the Airport. Although the Airport is within the presumed historic geographic range of CTS, there are no records of natural occurrences of this species within the vicinity. The closest known occurrence of this species is an introduced population located approximately 3.2 miles southeast of the Airport at the Alton Lane Mitigation Site (see **Figure 3.4-2**), which is well outside their maximum migratory range of approximately 1.3 miles.²⁷ The landscape surrounding the Airport is dominated by agricultural land uses (e.g., vineyards) and developed areas generally not favorable to CTS; however, there are sizable patches of non-native grassland and pasture land that could be used by CTS for upland dispersal (see **Figure 3.4-6**).

All non-hardscaped lands (i.e., unpaved, non-compacted surfaces) in the Airport Study Area are suitable upland habitat for CTS (see **Figure 3.4-6**). Field assessments found that Botta's pocket gopher (*Thomomys bottae*) burrows occur commonly throughout the annual grasslands and ruderal areas (see **Appendix H**). Suitable breeding habitat for CTS is not present in the Airport Study Area. Field observations and dip-net/seine net sampling of vernal pools and ponds have not found any evidence of CTS larvae (see **Appendix H**). Vernal pools and seasonal wetlands in the Airport Study Area were found to be generally too shallow to provide suitable breeding habitat; seining of ponds revealed large populations of American bullfrogs and predatory fishes.

²⁷ U.S. Fish and Wildlife Service, *Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers (Corps) Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California*, November 2007.

Field sampling and distributional information suggest that CTS are absent from the Airport Study Area. Nevertheless, the study area provides suitable upland habitat that occurs within the presumed historic range of this species, as contained in the PBO and Conservation Strategy. Therefore, the potential for CTS to occur in the Airport Study Area cannot be ruled out.

A large portion of the Plain, including the Airport Study Area, is currently proposed as Critical Habitat for the Sonoma County Distinct Population Segment of CTS, pursuant to a proposed rule published August 18, 2009 (74FR 41662 41673). A final rule of this designation has not yet been approved; nevertheless, federal ESA guidelines require the proposed designation to be considered when assessing effects.

Reptiles

- **Western Pond Turtle (*Emys marmorata*)** is a California Species of Special Concern that occurs in permanent or nearly permanent waterbodies such as ponds, marshes, rivers, streams, and irrigation ditches. It prefers habitats with suitable basking sites such as rocks, logs, terrestrial islands within aquatic habitat, and human-made debris. Western pond turtles occur throughout much of the San Francisco Bay area, but have declined or are extirpated from many historic localities, especially in urban areas. Upland habitats are also important to western pond turtles for nesting, overwintering, and overland dispersal. Western pond turtles occur in Pond 6 and along Airport Creek within the Airport Study Area; they are also likely to be present in other ponds and along the Redwood Creek and Ordinance Creek corridors (see **Appendix H**). All of these ponds and creek corridors contain suitable basking sites for this species (primarily mud banks) and suitable adjacent upland habitat for overwintering and nesting. The stream corridors also provide suitable hibernation habitat (e.g., leaf litter, tree root masses) for pond turtles to retreat to during high water stages. Foraging western pond turtles are known to move from pool to pool along creek corridors for distances of up to 3 miles.²⁹ Therefore, Airport and Redwood Creeks may support foraging pond turtles from adjacent stream reaches both upstream and downstream from the Airport.

Female pond turtles typically construct nests between 33 - 623 feet from a waterbody, however nests have been located as far as 1,318 feet from an aquatic site.²⁸ Most known nest sites occur on dry, well-drained soils with a high clay/silt content and a low (<15 degree) slope in open areas of grassland or herbaceous cover with little shrub or tree cover.²⁹ These conditions prevail in the vicinity of Pond 6 and in the upland areas adjacent to Airport and Redwood riparian corridors. Therefore, a reasonable probability exists for nest sites to occur within upland areas proposed for grading in the vicinity of the Pond 6 and Airport Creek.

Pond 6 has an upland connection to Mark West Creek, which lies approximately 600 feet away, through a farm road passage beneath Laughlin Road (see **Figure 3.4-7**). This passage may provide a movement corridor for western pond turtles moving between Pond 6 and Mark West Creek. Similarly, the Airport Creek corridor lies between 300 and 900 feet of Ponds 1 – 4 (see **Figure 3.4-7**). These distances are all within the dispersal range of western pond turtles, which have the ability to move up to several mile across in dry habitat in search of other waters.²⁹ Pond turtles will disperse from ponds when the

²⁸ LSA 2009. Administrative Draft – Solano County Habitat Conservation Plan. Special Management Species Accounts Prepared for the Solano County Water Agency.

ponds dry, and will leave stream environments when waters are low and water temperatures are too hot, or under flood conditions.

Birds

- **Burrowing Owl (*Athene cunicularia*)** is a California Species of Special Concern that occurs in open, well-drained grasslands with abundant small mammal burrows, particularly those of California ground squirrels. Burrowing owls prefer areas with short vegetation and are often found in human-modified areas including riprap, concrete, and rubble piles. This species has undergone substantial population declines throughout central and coastal California, primarily due to habitat loss.

A single burrowing owl was observed within the eastern industrial portion of the Airport Study Area by LSA biologists during January 2003 (see Figure 3.4-4 and **Appendix H**). This observation is consistent with the premise that burrowing owls are expected to occur occasionally on the Santa Rosa Plain as a rare winter visitor or migrant, but are not known to nest on the Plain. The absence of ground squirrels on the Santa Rosa Plain and in the Airport Study Area greatly reduces the habitat suitability for burrowing owls.

Although the Airport Study Area does not support ground squirrels, there are potentially suitable burrow sites found at numerous culverts, debris and rubble piles around the Airport (see, for example, the locations of all culverts associated with Corps jurisdictional features - Appendix H). The former landfill area west of Taxiway W in particular contains various rubble and debris piles that could provide suitable burrow habitat (see **Figure 3.4-8**).

The paucity of underground retreats, such as ground squirrel burrows, would limit the suitability of the Airport Study Area as breeding or wintering habitat for burrowing owls. Botta's pocket gopher burrows occur commonly throughout the grassland/ruderal habitats in the Airport Study Area, but these burrows are generally too small to be used by burrowing owls. Nevertheless, burrowing owls have been documented to occasionally use the burrows of this species by enlarging the existing burrows where soils are not compacted.²⁹ Gophers are also a major prey species for burrowing owls, so an abundance of gophers at the Airport would provide a large prey base for burrowing owls.

Burrowing owls have adapted to human-altered and disturbed environments and often occur within airport infields where the following habitat attributes typically exist: (1) open, well-drained terrain, (2) short, sparse vegetation that allows visibility of approaching predators, and (3) underground burrows.³⁰ The grasslands within the infield of the Airport Study Area (between Runways 1/19 and 14-/32), and in the grasslands west and north of Runway 1-19, generally do not provide this combination of habitat attributes. Although these areas contain short grassland vegetation that is regularly mowed, much of these areas are poorly drained as evidenced by the prevalence of extensive areas of seasonal wetlands (see **Figure 3.4-1**). These drainage conditions are probably exacerbated by

²⁹ Shuford, W.D. and T. Gardali, editors. 2008. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1 (Burrowing Owl Account). Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

³⁰ LSA 2009. Administrative Draft Solano Habitat Conservation Plan – Natural Community and Species Accounts. Prepared for the Solano County Water Agency.

the regular wastewater irrigation that is conducted in much of the infield. More importantly, the lack of suitable underground burrows would suggest that occupied burrows probably do not occur in the infield.

Wildlife biologists have not observed evidence of occupied burrowing owl burrows (e.g. molted feathers, cat pellets, prey remains, whitewash at burrow entrances) within the Airport Study Area. However, systematic (protocol level) surveys for burrowing owls have not been conducted. Under CDFG guidelines, the observed presence of a single burrowing owl is sufficient to consider a site as occupied habitat, regardless of whether or not occupied burrows are seen.³¹ Therefore, based on the presence of limited suitable burrow sites (primarily culverts and debris/rubble piles) and the observed presence of one individual of this species, the potential for burrowing owls to be present in occupied burrows within the Airport Study Area cannot be ruled out.

- **Loggerhead Shrike (*Lanius ludovicianus*)** is a California Species of Special Concern that occurs in open habitats with scattered shrubs, trees, posts, fences, utility lines, and other perches. Shrikes primarily nest in the lower branches of dense shrubs and tall trees, although they have also been observed nesting in buildings and debris piles. There are no documented breeding occurrences of this species within 10 miles of the Study Area. Although not observed in the Airport Study Area, shrikes could potentially nest in the site's trees and large shrubs, and forage in the open grasslands.
- **Northern Harrier (*Circus cyaneus*)** is a California Species of Special Concern that is widespread in California. Its preferred habitats are freshwater wetlands and salt marshes, although they are also commonly found over grasslands and agricultural fields where they may build their nests on the ground. Northern harriers have been observed flying over the Airport Study Area; suitable nesting habitat is found within grasslands in the Study Area; however, no nests have been observed during multiple field surveys conducted during the breeding season (see **Appendix H**).
- **Tricolored Blackbird (*Agelaius tricolor*)** is a California Species of Special Concern at its nesting colonies. This species prefers to nest in large dense stands of emergent marsh vegetation, but will also nest in upland locations that support dense stands of herbaceous vegetation. There are no documented existing breeding occurrences of this bird species within the Airport Vicinity. Additionally, this species is known to have historically nested in the Airport Vicinity.³² (Burridge 1995). This species is unlikely to nest within the Airport Study Area due to the limited area of freshwater marsh habitat. Nevertheless, the potential for this species to nest within the marsh areas cannot be ruled out.
- **White-tailed Kite (*Elanus leucurus*)** is designated by CDFG as a Fully Protected Species that nests in densely foliated trees and large shrubs located near suitable foraging habitat such as grasslands, marshes, and agricultural fields. The bulk of the state's population found west of the Sierra Nevada occurs in lowlands and foothills, where it is often seen year-round. The closest CNDDDB nesting occurrence is approximately 4.4 miles from the Airport. White-tailed kites have been observed foraging in the Airport Study Area, and may nest in the isolated willow stands or in the riparian woodlands along Redwood and Airport Creeks.
- **Yellow-Breasted Chat (*Icteria virens*)** is a California Species of Special Concern at its nesting sites. It nests in large stands of willow riparian woodlands with dense growths of understory vegetation. It occurs in California as a migrant and summer resident. Nesting

³¹ California Burrowing Owl Consortium, *Burrowing Owl Survey Protocol and Mitigation Measures*, available at: <http://www.dfg.ca.gov/wildlife/nongame/docs/boconsortium.pdf>. Accessed July 13, 2011.

³² Burridge, B. (ed.). 1995. Sonoma County Breeding Bird Atlas. Madrone Audubon Society. Santa Rosa, CA.

has been observed by this species in Sonoma County outside the Santa Rosa Plain, but there are no documented breeding occurrences of this bird species within 10 miles of the Airport. This bird species is unlikely to nest in the Airport Study Area due to the limited willow riparian woodland present.

- **Yellow Warbler (*Dendroica petechia brewsteri*)** is a California Species of Special Concern that nests and forages primarily in riparian plant communities, particularly extensive willow thickets within riparian woodland habitat. Migratory populations breed from northern Alaska and Canada southward to middle United States, and in the west into Mexico. There are no documented breeding occurrences of this warbler within 10 miles of the Study Area. However, this bird species has been observed along the Airport Creek corridor within the Airport Study Area, and could nest within willow riparian zones along Airport Creek and other creeks in the Airport Study Area.

Mammals

- **American Badger (*Taxidea taxus*)** is a California Species of Special Concern that forages and digs burrows in grassland, scrub, and woodland habitats with friable soils. Badgers dig their own burrows to use as dens, and frequently reuse old burrows, although some have been known to dig a new den each night, especially in summer. Badgers eat ground squirrels, pocket gophers, and other small prey such as mice, reptiles, insects, earthworms, and birds. This species was once fairly widespread throughout the open grassland habitats of California but are now uncommon throughout most of the state, with the exception of the northern North Coast area. The closest CNDDDB occurrence of American badger is approximately 4.4 miles from the Airport (see **Figure 3.4-3**). American badgers have an average home range of 2,100 acres.³³ Consequently, the Airport Study Area is likely to be outside the range of the CNDDDB occurrence. However, undocumented occurrences of badgers could occur closer to the Airport.

Badgers are rare on the Santa Rosa Plain but nevertheless could inhabit grassland ruderal areas and the more open parts of oak woodlands in the Airport Study Area (see **Figure 3.4-1**). These grasslands/ruderal habitats in the former landfill west of Taxiway W, in the areas of Airport Creek and along Windsor Road generally provide the following suite of attributes potentially suitable for American badgers: (1) sufficient prey base – i.e. large populations of pocket gophers; (2) relatively open, uncultivated ground; and (3) dry friable soils that can be readily excavated. Although the first two attributes are present within the runway infield portion of the Airport Study Area and in the grasslands west and north of Runway 1/19, the third attribute is not present. As discussed above for burrowing owls, soils within the infield area are generally not well drained and subject to ponding as evidenced by the presence of extensive areas of wetlands and by the irrigation system. Portions of this area may however be dry enough in the summer to support this species.

Badgers were not observed within the Airport Study Area during field surveys; potential den sites were not observed, nor was there any evidence of badger digs (see **Appendix H**). However, systematic (protocol level) surveys for badgers have not been conducted and potentially suitable habitat occurs. Therefore, the potential for this species to be present cannot be ruled out.

³³ U.S Department of Agriculture- Forest Service, *Index of Species Information*, available at: <http://www.fs.fed.us/database/feis/animals/mammal/tata/all.html>. Accessed July 13, 2011.

- **Pallid Bat (*Antrozous pallidus*)** is a California Species of Special Concern that prefers open, lowland areas and roost in cliff fissures, abandoned buildings, and under bridges. Pallid bats are most commonly found in dry habitats with rocky areas for roosting. They primarily sleep in rock crevices and buildings. Pallid bats feed on insects such as crickets and scorpions, and are capable of consuming up to half their weight in insects every night. Several pallid bat occurrences have been documented in the Airport Study Area. The closest occurrence is approximately 2.9 miles from the Airport. Although riparian woodlands in the Airport Study Area could provide marginally suitable day roosting habitat, the woodlands are unlikely to support this species due to a lack of large hollows (cavities) suitable for such roosting. All open habitat types within the Airport Study Area (grasslands, ruderal areas, open woodlands) provide suitable foraging habitat for this species. The abandoned bunker south of Taxiway B and the old out-buildings in the southeastern corner of the Airport Study Area may provide suitable roost sites for this species (see **Figure 3.4-4**). The bunker is well removed from the area that would be disturbed by the Proposed Project (more than 900 feet away). Therefore the Proposed Project would not affect this species.
- **Townsend's Western Big-eared Bat (*Corynorhinus townsendii*)** is a California Species of Special Concern that lives in a variety of habitats, primarily moist sites within coastal conifer and broad-leaf forests, oak woodlands, arid grasslands and deserts, and high elevation forests and meadows. This bat species hibernates during the winter, often when temperatures are around 32° to 53°F, and forms feeding, maternity, and hibernation roosting colonies. Roosting sites include buildings, and other human-made structures free of human disturbance. There are no documented occurrences of this species within 10 miles of the Airport. Nevertheless, this species could forage in the Airport Study Area. Suitable roosting habitat is limited to the old out-buildings in the southeastern corner of the study area and the abandoned bunker south of Taxiway B (see **Figure 3.4-4**). The bunker is well removed from the area that would be disturbed by the Proposed Project (more than 900 feet away). Therefore the Proposed Project would not affect this species.

Of the 21 special-status animal species described above in Table 3.4-1, a total of nine were determined to be absent from the Airport Study Area due to a lack of suitable habitat or based on the results of surveys. These species are the following:

- California freshwater shrimp;
- California coastal chinook salmon ESU;
- Central California Coast coho salmon ESU;
- Central California Coast steelhead ESU;
- Central Valley steelhead ESU;
- Central Valley spring-run chinook salmon ESU;
- Sacramento River winter-run chinook salmon ESU;
- California red-legged frog; and
- Northern spotted owl.

Twelve special status animal species were either found to be present within the Airport Study Area or have suitable habitat. The following five species were observed during surveys within the Airport Study Area: burrowing owl, northern harrier, white-tailed kite, western pond turtle, and yellow warbler. Although the following seven species were not observed, potentially suitable habitat is present within the Airport Study Area; pallid bat, Townsend's big-eared bat, American

badger, California tiger salamander, loggerhead shrike, tri-colored blackbird, yellow-breasted chat. All of these species are discussed below in **Section 3.4.3**.

3.4.3 Environmental Impacts and Mitigation Measures

The following section presents a discussion of potential impacts to biological resources that could result from implementation of the Proposed Project. Mitigation measures are identified to reduce potentially significant impacts to less-than-significant levels. **Figure 3.4-1** depicts the grading limits of the Proposed Project with respect to that various habitats within the Airport Study Area. Impacts 3.4.1 through 3.4.14 are associated with the short-term project elements of the Proposed Project. **Impacts 3.4.15 through 3.4.22** are associated with the long-term project elements.

Impact 3.4.1: Loss or Disturbance of a Pappose Tarplant Population as a Result of Short-Term Project Elements

Grading for the RSA associated with the approach end of Runway 14 would occur within an area that supports one the Airport's two populations of pappose tarplant, which is a CRPR 1B species (see **Figure 3.4-9**). As a consequence, the Proposed Project is likely to cause a significant adverse affect to this species. The loss or disturbance of this rare plant population would be a significant impact.

Mitigation Measure 3.4.1

Following seed-set in the late summer/early fall (September - November), prior to the year in which construction is scheduled, seeds shall be collected from stands of pappose tarplant within the Airport Study Area. The harvested seeds shall be properly stored and shall be used to re-establish one or more new stands of tarplant within the Airport Study Area, following completion of grading. The Project Biologist³⁴ shall supervise and document compliance with the mitigation measure and shall subsequently prepare a report summarizing compliance to the County.

Implementation of this mitigation measure would reduce this impact to a less-than-significant level.

Impact 3.4.2: Impact to Occupied and Suitable Habitat for Burke's Goldfields, Sebastopol Meadowfoam, and Sonoma Sunshine as a Result of Short-Term Project Elements

The Proposed Project would not affect any existing occurrences of these three federal and state-listed Endangered species, nor would it affect any other wetlands where these species have historically occurred. However, under the Conservation Strategy and PBO, all of the Airport's vernal pools and other seasonal wetlands are considered to be suitable habitat for these species. Loss of such habitat is considered an impact under the premise that the habitat may retain a remnant seed bank for these three species.³⁵ Therefore, the Proposed Project would result in the loss of 4.4 acres of suitable habitat for these three species; this habitat loss would constitute a significant impact.

³⁴ A designated Project Biologist, subject to the approval of CDFG and USFWS shall be responsible for supervising and verifying compliance with all mitigation measures contained in Section 3.4.3.

³⁵ Many of the wetlands that would be affected by the Proposed Action occur within parts of the Airport that were previously graded and/or regularly irrigated. Therefore, the potential for these wetlands to have retained a remnant seedbank for federally-listed vernal pool plants is doubtful. Nevertheless, consistent with the Conservation Strategy and PBO, it is assumed that a remnant seedbank could exist.

Mitigation Measure 3.4.2

The County shall implement one of the following compensatory actions or a combination of the two in accordance with the interim mitigation guidelines of the Conservation Strategy and the requirements of the PBO:

- **Mitigation Credit Purchase.** The County of Sonoma shall acquire 6.6 acres of plant preservation mitigation credits from a USFWS and CDFG-approved off-site mitigation or conservation bank on the Santa Rosa Plain. The acquired credits shall consist of at least 2.2 acres of established habitat and 4.4 acres of occupied or established habitat for Burke's goldfields and Sonoma sunshine, resulting in an overall mitigation ratio of 1.5:1 for impacts to suitable habitat.^{36,37}
- **Dedicated Mitigation Site.** The County of Sonoma shall acquire at least 2.2 acres of established habitat and 4.4 acres of occupied or established habitat for Burke's goldfields and/or Sonoma sunshine at an off-site mitigation area on the Santa Rosa Plain. The off-site mitigation area shall be approved by the USFWS and CDFG and shall be managed in perpetuity under a USFWS/CDFG-approved conservation easement, management plan and non-wasting endowment.³⁸ A 5-year mitigation and monitoring plan for verifying compliance with this mitigation measure shall be prepared by the Project Biologist. The plan shall include detailed monitoring protocols, performance goals, reporting requirements, and potential remedial measures, and shall be subject to the review and approval of the USFWS/CDFG prior to the start of work.

Implementation of this mitigation measure would reduce the potential impact to Burke's goldfields, Sebastopol meadowfoam and Sonoma sunshine to a less-than-significant level.

Impact 3.4.3: Loss of Suitable CTS Habitat as a Result of Short-Term Project Elements

Grading and earthmoving activities associated with the Proposed Project would temporarily affect 91.6 acres and permanently affect another 38.4 acres of suitable habitat for CTS (see **Figure 3.4-1**). Temporary effects would occur in grassland and ruderal areas that would be disturbed by grading activities during construction but would not be paved or compacted. The Airport Study Area occurs within the boundaries of proposed Critical Habitat for the Sonoma County distinct population of the CTS. Therefore, the Proposed Project also has the potential to destroy or adversely modify Proposed Critical Habitat for CTS. The loss of suitable CTS habitat, and the destruction or adverse modification of proposed Critical Habitat for CTS, constitutes a significant impact.

Mitigation Measure 3.4.3A

The following CTS avoidance and minimization measures shall be implemented before and during construction work:

³⁶ Under the PBO, "occupied" habitat supports listed plant populations that existed prior to the establishment of a mitigation bank. "Established" habitat supports new or expanded populations of the listed plants that resulted from active seeding and management efforts conducted after a mitigation bank has been established.

³⁷ The Conservation Strategy and PBO require that mitigation for impacts to suitable habitat for these three species within sites north of Santa Rosa Creek (where the Airport occurs) mitigate within occupied or suitable habitat for Burke's goldfields and/or Sonoma sunshine, in recognition of the fact that Sebastopol meadowfoam generally occurs south of Santa Rosa Creek.

³⁸ A "non-wasting" endowment has sufficient principal so the interest income is enough to fund annual maintenance and management costs.

- **Approved Project Biologist.** A USFWS/CDFG approved biologist (Project Biologist) shall monitor the initial site disturbance of each area that is to be graded and shall have the authority to halt construction work if a CTS is observed or if otherwise needed to ensure compliance with the measures contained herein. Work shall commence only when authorized by the Project Biologist. Only USFWS/CDFG-approved biologists shall be allowed to handle CTS.
- Before the start of work each day, a biological monitor shall check for CTS under any equipment such as vehicles and stored pipes. The biological monitor shall also check all steep-walled holes or trenches greater than 1-foot deep for CTS. If a CTS is found, the biological monitor shall immediately contact the Project Biologist, who shall be responsible for capturing and translocating the CTS in accordance with the requirements of the PBO.
- **Equipment Maintenance.** All equipment shall be maintained in accordance with the Best Management Practices (BMPs) discussed in **Impact 3.8.3**. All fueling and maintenance of vehicles and other equipment and staging areas shall be located at least 200 feet from any aquatic habitat.
- **Construction Timing.** In order to avoid the potential for take of adult CTS, which migrate across upland areas during the rainy season, grading and clearing work shall only be conducted between April 15 and October 15, of any given year, depending on the level of rainfall and site conditions. Any grading or clearing work conducted between October 16 and April 14, shall only be conducted with the prior approval of CDFG and USFWS.
- **Revegetation.** Project areas temporarily disturbed by construction activities shall be revegetated with an erosion control seed mix containing grassland species native to the Plain.

Mitigation Measure 3.4.3B

As compensation for temporary impacts to 91.6 acres and permanent impacts to 38.4 acres of suitable CTS habitat, the County of Sonoma shall implement one of the following actions or a combination of both actions, in accordance with the interim mitigation guidelines of the Conservation Strategy and the requirements of the PBO:

1. **Mitigation Credit Purchase.** The County of Sonoma shall acquire 26.0 acres of CTS mitigation credits from a USFWS and CDFG-approved off-site mitigation or conservation bank on the Santa Rosa Plain, resulting in an overall mitigation ratio of 0.2:1.³⁹
2. **Dedicated Mitigation Site.** The County of Sonoma shall preserve at least 26.0 acres of CTS habitat at an off-site mitigation area on the Santa Rosa Plain. The off-site mitigation area shall be approved by the USFWS and CDFG, and shall be managed in perpetuity under a USFWS/CDFG-approved conservation easement, management plan and non-wasting endowment. The mitigation habitat may be at the same location as the plant mitigation habitat required under Mitigation Measure 3.4.2, above. A 5-year monitoring plan for verifying compliance with this mitigation measures shall be prepared by the Project Biologist. The monitoring plan shall include monitoring protocols, performance goals, reporting requirements, and potential remedial measures, and shall be subject to the review and approval of the USFWS and the CDFG prior to the start of work.

³⁹ Under USFWS and Corps policies for the Santa Rosa Plain, units of mitigation may serve multiple habitat/species mitigation needs. For example, mitigation banks offer the sale of credits that simultaneously meet CTS/plant/wetland mitigation needs. Therefore, the mitigation acreages described in the Section for impacts to various habitat types may also help fulfill CTS mitigation needs (e.g., the 4.4 acres of plant preservation/wetland creation credits under Mitigation Measure 3.4.2 may also provide 4.4 acres of CTS mitigation credits).

Implementation of these mitigation measures would reduce the potential impact to CTS habitat to a less-than-significant level.

Impact 3.4.4: Loss of Western Pond Turtles and Loss of Western Pond Turtle Habitat as a Result of Short-Term Project Elements

The Proposed Project would remove Ponds 4 and 6, as well as an approximate 1,500-foot reach of Airport Creek. All of these habitats are occupied or potentially occupied by western pond turtles, a California Species of Special Concern. The Proposed Project also would entail grading of upland areas adjacent to these aquatic features, potentially used as nesting, hibernating or dispersal habitat by pond turtles. As discussed in Section 3.4.2.4, there exist substantial areas of other suitable, connected habitat in other ponds and in Airport and Mark West Creeks that would be available for use by western pond turtles (and to which individual turtles could be relocated under the following mitigation measures). Therefore, the loss of occupied/suitable habitat under the Proposed Project is not a significant impact. However, the Proposed Project could result in the mortality or injury of individual pond turtles during construction, as a result of any of the following circumstances:

- 1) When disturbed, adult pond turtles typically will drop into the water and hide under rocks, logs or other debris, rather than migrate away from the water body. Pond and creek filling work would likely result in mortality or injury to such hiding turtles.
- 2) Earthmoving work could crush upland nesting sites of pond turtles.
- 3) Construction work could result in mortality or injury to adult pond turtles attempting to nest in adjacent upland sites within or near the construction area.

The mortality or injury to western pond turtles would constitute a significant impact.

Mitigation Measure 3.4.4

Prior to the commencement of any earthmoving activity, construction, or vegetation removal in the vicinity of Ponds 4 and 6 and along the reach of Airport Creek affected by the Proposed Project, the following measures shall be implemented:

- **Temporary Fence Installation.** The contractor shall place a temporary chain link fence, two to three feet high, buried at least six inches deep between the proposed grading areas of Ponds 4 and 6 and the adjacent Ponds 3 and 5 (see **Figure 3.4-9**) to discourage adult female turtles from entering and nesting in the impact areas. The final fence design shall be subject to the approval of CDFG. Similarly, to the extent feasible, fencing shall be placed at the upstream and downstream limits of the Airport Creek work area, extending up the banks and into the adjacent uplands (see **Figure 3.4-9**). Installation of the fencing shall be supervised by the Project Biologist. The fence mesh shall be of a size to allow hatchling turtles to pass through, but exclude adult females (approximately 3 by 3 inches). This will allow hatching turtles that have over-wintered in the proposed grading area to leave the nest and return to the aquatic habitat. After the first year of grading, construction within the fenced areas can be conducted throughout the year because nesting females would have been excluded from these areas and nests would not be present. After construction is complete, the turtle exclusion fence may be removed.
- **Pre-construction Surveys.** The Project Biologist shall survey the ponds and the creek habitat and any uplands that would be affected by construction work within 300 feet of the ponds and creek. This survey shall occur within two days of the onset of construction

activities. If any pond turtles are encountered during the surveys, construction work may not commence in the vicinity until the Project Biologist has relocated the pond turtle to nearby suitable, undisturbed aquatic habitat. The Project Biologist shall determine the best location for their release, based on the condition of the vegetation, soil, and other habitat features and the proximity to human activities.

- **Daily Surveys.** A designated construction monitor⁴⁰ shall conduct daily surveys in the fenced areas. If any western pond turtles are observed during the daily surveys, construction work shall cease until the Project Biologist has been notified and has relocated the turtles to nearby suitable, undisturbed habitat. The Project Biologist shall remain on call and be available, as needed, to relocate any western pond turtles discovered by the designated monitor during construction.
- **Other Occurrences of Pond Turtles.** If any western pond turtles are found in other construction areas where fencing was deemed unnecessary, work shall cease until the Project Biologist has moved the individuals. The Project Biologist shall have the authority to stop all activities until appropriate corrective measures have been completed.
- **Proper Field Practices.** To ensure that diseases are not conveyed between work sites by the Project Biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force⁴¹ shall be followed at all times.
- **Reporting.** The Project Biologist shall prepare a report documenting all pond turtle relocation work conducted for the Proposed Project. The report shall be submitted to the County within 30 days of completion of relocation work.

Implementation of these mitigation measures would reduce the potential impact to western pond turtles to a less-than-significant level.

Impact 3.4.5: Potential Impacts to Occupied Burrowing Owl Burrows as a Result of Short-Term Project Elements

Although the presence of breeding burrowing owls, a California Species of Special Concern, is unlikely in the Airport Study Area, the possibility of occupied burrows being present cannot be rejected (see Section 3.4.2.4). Therefore, earthmoving and grading activities for the Proposed Project in open grasslands and ruderal areas could have the potential to destroy burrowing owl burrows and or disturb breeding owls. These potential effects to burrowing owls would constitute a significant impact.

Mitigation Measure 3.4.5

The County of Sonoma shall implement the following actions to mitigate the impacts associated with the loss of occupied burrowing owl habitat.

- **Pre-construction Surveys.** The Project Biologist shall conduct pre-construction surveys within grasslands and within all potential human-made structures (e.g., culvert, debris piles) that will be affected by proposed project construction work. Surveys shall be conducted during the breeding season (February 1 to August 31), no more than 30 days prior to the anticipated start of construction. Surveys shall be conducted from one hour before to two hours after sunrise or two hours before to one hour after sunset in order to maximize the opportunity of observing owls on the site. If ground-disturbing work is

⁴⁰ A designated construction monitor shall be one or more supervisory construction personnel who are trained by the Project Biologist to verify compliance with all biological avoidance and minimization measures.

⁴¹ U.S. Fish and Wildlife Service. 2011. Declining Amphibian Task Force Code of Practices. *Ventura Fish and Wildlife Office – Survey Protocols and Guidelines*, available at: http://www.fws.gov/ventura/species_information/protocols_guidelines/. Accessed July 22, 2011.

delayed or suspended for more than 30 days following the preconstruction survey, the Project Biologist shall re-survey the site within 7 days of the start of construction. Work outside the breeding season does not require any pre-construction survey.

- **Standard Buffer Zones.** If breeding or wintering burrowing owls are observed in the construction area, avoidance measures shall be implemented in accordance with the standardized CDFG protocols. No disturbance shall occur within 160 feet of occupied burrows during the non-breeding season of September 1 through January 31 or within 250 feet during the breeding season of February 1 through August 31.
- **Non-standard Buffer Zones.** Construction buffers may be reduced from the distances provided above if a site-specific analysis prepared by the Project Biologist indicates that the nesting pair(s) or wintering owl(s) would not be adversely affected by construction activities. CDFG must approve this analysis before construction can proceed. If a smaller buffer is approved by CDFG, the Project Biologist shall conduct monitoring for a minimum of 10 consecutive days following the initiation of construction to verify that the nesting pair does not exhibit adverse reaction to construction activities (e.g., changes in behavioral patterns, reactions to noise), and to verify that the burrows are not in danger of collapse due to equipment traffic. Monitoring shall continue at least once a week through the nesting/wintering cycle at that site to verify that no change in behavior by the owls occurs.
- **Passive Relocation.** Passive relocation measures may be implemented to encourage owls to move away from the work area prior to construction, subject to the approval of CDFG. Passive relocation would entail the installation of one-way doors in the burrows. The doors would be left in place for a minimum of 48 hours, and monitored daily to evaluate owl exclusion and to ensure doors are functioning properly. Burrows would then be excavated, using hand tools whenever possible, and re-filled to prevent reoccupation. Sections of flexible plastic pipe would be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow.
- **Reporting.** The Project Biologist shall prepare a report documenting all passive relocation work conducted for the Proposed Project. The report shall be submitted to CDFG within 30 days of completion of relocation work.

Implementation of this mitigation measure would reduce the potential impact to burrowing owls to a less-than-significant level.

Impact 3.4.6: Removal or Disturbance of Nesting Birds as a Result of Short-Term Project Elements

Earthmoving and tree removal work could destroy occupied nests of native birds protected under the Migratory Bird Treaty Act and under Sections 3503, 3503.5, and 3513 of the CDFG Code. Construction activities could also disturb birds in occupied nests, causing nest abandonment. These potential effects to nesting birds would constitute a significant impact.

Mitigation Measure 3.4.6

The County of Sonoma shall implement the following actions to mitigate the impacts associated with the removal or disturbance of nesting birds.

- **Pre-construction Surveys.** If construction work is scheduled during the breeding season (February 1 through August 31), the Project Biologist shall conduct pre-construction surveys within all habitats to be disturbed by construction (including grassland/ruderal areas) and adjacent to the project disturbance zone to determine if nesting birds are present. Pre-construction surveys would not be required for

construction work carried out in the non-breeding season (September 1 through January 31). The preconstruction surveys shall be conducted within 15 days prior to the start of work.

- **Buffer Zones.** If birds are observed nesting, the Proposed Project shall avoid construction activity within a buffer zone around the nest (typically 50 to 250 feet of the nest) until the breeding season has ended, or the Project Biologist has confirmed that the young have fledged and are no longer reliant upon the nest or parental care for survival. The size of the nest buffer shall be determined by the Project Biologist, in consultation with CDFG, based on the location of the nest, the nesting species present, and types of construction activities that may cause potential nest abandonment.

Implementation of this mitigation measure would reduce the potential impact to nesting birds to a less-than-significant level.

Impact 3.4.7: Disturbance of Roosting Bats as a Result of Short-Term Project Elements

The Proposed Project would not affect roosting bats because the potential habitat (i.e., the bunker) is well removed from the area that would be disturbed by the Proposed Project (more than 900 feet away). This is considered to be a less-than-significant impact.

Mitigation Measure 3.4.7

No mitigation is warranted.

Impact 3.4.8: Potential Destruction or Disturbance of American Badger Dens as a Result of Short-Term Project Elements

Although the presence of American badgers, a California Species of Special Concern, is unlikely in the Airport Study Area, the possibility of occurrence cannot be rejected (see Section 3.4.2.4). Therefore, earthmoving, grading and construction activities for the Proposed Project in open grasslands and ruderal areas could have the potential to destroy American badger dens. These potential effects to American badgers would constitute a significant impact.

Mitigation Measure 3.4.8

The County of Sonoma shall implement the following actions to mitigate the impacts associated with the destruction or disturbance of American badger dens.

- **Pre-construction Surveys.** A pre-construction survey for the presence of badger dens and signs of badger occupancy shall be conducted by the Project Biologist in all grasslands that would be affected by the Proposed Project and within 100 feet of the project limits or as feasible. The survey shall be completed no more than seven days prior to the initiation of ground-disturbing activities. Pre-construction surveys shall be repeated as necessary if ground-disturbing activities are delayed or postponed.
- **Den Monitoring.** If potential dens are observed within the pre-construction survey area, then the Project Biologist shall implement a monitoring program to determine if the dens are active. Monitoring shall be done using remote triggered cameras or tracking media placed at the den entrance. Cameras or tracking media shall be operated for a minimum of three nights. If no activity is observed at the den during the monitoring period, then the den shall be excavated by hand on the morning following the third night of monitoring. The den shall be backfilled to prevent reuse. All den excavations shall be coordinated with the CDFG.
- **Monitoring of Active and Natal Dens.** If a den is determined to be active, the den shall be monitored for an additional 3 nights to determine if the badgers are using the den

continually. Special care shall be taken during the period of March through July when badger cubs may be present in the den. Excavation of natal dens shall not be allowed until it is determined by the Project Biologist that the young have left the den and are able to forage independently. The presence of a natal den within the Proposed Project area or buffer area shall be reported to CDFG within 24 hours of discovery.

- **Den Excavation.** During the entire year, no excavation of the dens shall be allowed until monitoring results demonstrate that the den has been unoccupied for at least three nights. Once the den has been determined to be unoccupied for a period of at least three consecutive nights, the den may be excavated by hand and backfilled.
- **Den Blocking.** Outside of the period when young may be present in the den (August through February), measures may be taken to discourage the use of continually occupied dens. This may include blocking the entrance to the den or other methods approved by CDFG. The den must be monitored during this period to ensure that badgers are not occupying the den. Excavation and backfilling may occur once the den is determined to be unoccupied for at least three consecutive nights.
- **Reporting.** The Project Biologist shall prepare a report documenting all badger den monitoring, excavation and blocking work conducted for the Project. The report shall be submitted to the County within 30 days of completion of relocation work.

Implementation of this mitigation measure would reduce the potential impact to American badgers to a less-than-significant level.

Impact 3.4.9: Conflicts with Approved Conservation Plans as a Result of Short-Term Project Elements

The Proposed Project would result in significant impacts to potential habitat for CTS, Burke's goldfields, Sebastopol meadowfoam and Sonoma sunshine. As such, the Proposed Project has the potential to conflict with the Conservation Strategy.⁴² Under the Conservation Strategy, the Airport is situated within the mapped area designated as "Potential for Presence of California Tiger Salamander and Listed Plants" (see Appendix H). Additionally, the northern and western portions of the Airport are part of the "Windsor Plant Conservation Area" under the Conservation Strategy (see Appendix H). In order to be consistent with the Conservation Strategy, the Proposed Project should be designed and conducted in accordance with the guidelines applicable to these two mapped areas, as follows:

Conservation Strategy Map - "Potential for Presence of California Tiger Salamander and Listed Plants." Within this area, non-hardscaped lands are considered to be suitable habitat for CTS; the species cannot be assumed to be absent from a site unless protocol level trapping surveys have demonstrated their absence. Protocol level surveys have not been conducted at the Airport due to the impracticability of conducting such surveys within an operationally active airport site. Therefore, this BRR recognizes all non-hardscaped lands within the Airport as suitable CTS habitat. Impacts for the temporary or permanent disturbance of these non-hardscaped lands should be mitigated in accordance with the Conservation Strategy; this mitigation requirement is met under Mitigation Measure 3.4.3.

Vernal pools and other seasonal wetlands within this mapped area are considered suitable habitat for three federally-listed plant species (Sonoma sunshine, Burke's goldfields and Sebastopol meadowfoam). Under the Conservation Strategy and the PBO, all such wetland

⁴² Conservation Strategy Team, *Final Santa Rosa Plain Conservation Strategy*, December 2005.

features must also be considered occupied habitat for the listed plants unless protocol level botanical surveys have demonstrated their absence. As described in this BRR, protocol level botanical surveys have been conducted at the Airport and the locations of all occupied habitat have been mapped. Consistent with the Conservation Strategy, the Proposed Project has been designed to avoid affecting all occupied habitat; effects are limited to 4.4 acres of suitable habitat. Impacts to all suitable habitat should be mitigated in accordance with the Conservation Strategy; this mitigation requirement is met under Mitigation Measure 3.4.2

Conservation Strategy - “Windsor Plant Conservation Area.” Under Objective No. 2 of the Conservation Strategy, the following objectives are listed for the Windsor Plant Conservation Area:

1. Establish 75 to 150 acres of plant preserves of 25 to 100 acres each in the Windsor Plant Conservation Area.
2. Maintain at least 10 occurrences of both Sonoma sunshine and Burke’s goldfields throughout their known range on the Plain.
3. Preserve the one known population of many-flowered navarretia on the Plain.

The Proposed Project is consistent with Objectives 1 and 2. The Airport previously established and placed under permanent protection and management three preserves, encompassing approximately 41 acres, within which Burke’s goldfields populations occur: (1) the Goldfields Preserve, (2) the Runway 14-32 Preserve, and (3) the SACMA Preserve (see **Figure 3.4-4**). These preserves are identified in the Conservation Strategy as components of the overall “Windsor Plant Conservation Area” which encompasses Airport lands and seeks to protect an adequate distribution and size of listed plant populations throughout the area. The Proposed Project has been designed to fully avoid any temporary or permanent impacts to these three preserves.

The Proposed Project is also consistent with Objective No. 3. The one known occurrence of many-flowered navarretia is found within parcels adjacent to the northwest of the current Airport boundaries that would not be affected by the Proposed Project.

Wetland Mitigation Requirements under Conservation Strategy. Section 5.3.1 of the Conservation Strategy states that vernal pools and seasonal wetlands on the Plain should be replaced at a minimum ratio of 1:1; higher ratios may be needed depending on the quality of the wetland that is impacted. The wetland replacement ratios provided below under **Mitigation Measure 3.4.10A** meet this requirement.

Mitigation Measure 3.4.9

No mitigation is warranted.

Impact 3.4.10: Loss of Jurisdictional Wetlands and Other Waters of the United States and State of California as a Result of Short-Term Project Elements

The Proposed Project would result in the filling of jurisdictional wetlands and other waters of the U.S. (see **Figure 3.4-1**). **Table 3.4-2** provides an overview of the loss of wetlands associated with the Proposed Project.

Table 3.4-2
WETLANDS IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT

Wetland / Other Water Type	Impact (In Acres)
Vernal Pools and Other Seasonal Wetlands	4.4
Perennial and Intermittent Streams (1,486 linear feet)	0.5
Ponds and Marshes	2.1
Willow Scrub	0.2
TOTAL	7.2

SOURCE: LSA Associates, 2011
 PREPARED BY: LSA Associates, 2011

The specific vernal pool and seasonal wetland areas that would be affected are labeled on **Figure 3.4-5**, and are summarized as follows:

- **Wetland Areas A, B, F and J** - Natural or created vernal pools and associated swales characterized by native and non-native vernal pool forbs and grasses, as described in Section 3.4.2.2. These features range from moderately shallow basins (approximately 6 – 12 inches deep) to deep pools (up to approximately 24 inches deep). Approximately 2.5 acres.
- **Wetland Areas G, H and L** – Shallow to moderately shallow (approximately 3 – 12 inches deep) depressional areas characterized largely by non-native seasonal wetland forbs and grasses as described in Section 3.4.2.2. Approximately 0.9 acres.
- **Wetland Area K** - Shallow to moderately shallow (approximately 3 – 12 inches deep) depressional areas and drainage ditches characterized largely by non-native seasonal wetland forbs and grasses as described in Section 3.4.2.2. Approximately <0.1 acres.
- **Wetland Area E** – Shallow to moderately shallow (12 inches or less) drainage swales characterized by native and non-native vernal pool forbs and grasses, as described in Section 3.4.2.2. Approximately <0.1 acres.
- **Wetland Areas D, I and M** – Shallow to deep (approximately 6 to greater than 24 inches) ditches and swales characterized by non-native seasonal wetland forbs and grasses as described in Section 3.4.2.2. Approximately 0.2 acres.
- **Wetland Areas C and N** – shallow to deep seasonal wetland vegetation surrounding Ponds 4 and 6, consisting of obligate native wetland plants (in deeper areas) to non-native seasonal wetland forbs and grasses in the shallower zones. Approximately 0.6 acres.

Jurisdictional stream channel impacts occur almost entirely on Airport Creek, as described in Section 3.4.2.2, with the exception of an approximately 0.02 acre proposed access road crossing of Upper Ordinance Creek, which is a channelized creek section. Impacts to ponds and associated marsh habitat are shown on **Figure 3.4-5** and occur at Ponds 4 and 6, as described in Section 3.4.2.2. The jurisdictional willow scrub that would be affected also occurs along Ponds 4 and 6.

The loss of 7.2 acres of jurisdictional wetlands and other waters of the U.S. would be a significant impact.

Mitigation Measure 3.4.10A

As compensation for the filling of 4.4 acres of jurisdictional vernal pools and other seasonal wetlands, as described in **Section 3.4.2.2**, one of the following mitigation measures or a combination of the two shall be implemented in accordance with the interim mitigation guidelines of the Conservation Strategy and the requirements of the PBO:⁴³

- **Mitigation Bank Credit Purchase.** A total of 4.4 acres of vernal pool creation credits shall be purchased from a Corps/RWQCB-approved off-site mitigation bank on the Santa Rosa Plain (resulting in an overall mitigation ratio of 1:1). Credit acquisition shall occur prior to the impacts.
- **Dedicated Off-site Mitigation Area.** At least 4.4 acres of new vernal pools shall be constructed at a dedicated off-site location (resulting in an overall mitigation ratio of 1:1). The off-site location shall be subject to the approval of the Corps and RWQCB and shall be managed in perpetuity under a Corps and RWQCB-approved conservation easement, management plan and non-wasting endowment. A Mitigation and Monitoring Plan, subject to the approval of the Corps and the RWQCB, shall be prepared for the approved off-site mitigation. The plan shall be implemented prior to or simultaneous with the impacts.

Mitigation Measure 3.4.10B

As compensation for the filling of 0.5 acre (1,486 linear feet) of jurisdictional stream channel, as described in **Section 3.4.2.2**, the following mitigation measure shall be implemented:

- **Stream Channel Replacement.** The Proposed Project's 850 linear feet of constructed stream channel shall have a minimum width (at the ordinary high water line) of 26 feet in order to allow for replacement at a 1:1 ratio of the 0.5 acre of stream channel that will be impacted by the Proposed Project. The re-established stream channel shall be replanted with low statured shrub and/or herbaceous species that meet FAA guidelines for lands within and adjacent to a runway's Obstacle Free Area (OFA).

Mitigation Measure 3.4.10C

As compensation for the filling of 2.1 acres of jurisdictional pond and marsh habitat, as described in **Section 3.4.2.2**, either of the following mitigation measures or a combination of the two shall be implemented:

- **Dedicated Off-site Mitigation Area.** At least 2.1 acres of pond and/or marsh habitat shall be constructed at a dedicated off-site location (resulting in an overall mitigation ratio of 1:1). The off-site location shall be subject to the approval of the Corps and RWQCB and shall be managed in perpetuity under a Corps/RWQCB-approved conservation easement, management plan, and non-wasting endowment. A Mitigation and Monitoring Plan, subject to the approval of the Corps and RWQCB, shall be prepared. The plan shall be implemented prior to or simultaneous with the impacts.
- **Mitigation Bank Credit Purchase.** A total of 2.1 acres of wetland credits shall be purchased from a Corps/RWQCB-approved off-site mitigation bank on the Santa Rosa Plain (resulting in an overall mitigation ratio of 1:1). Credit acquisition shall occur prior to the impacts.

⁴³The FAA is unlikely to approve the establishment of an on-site wetland mitigation area due to the potential for attracting birds and other wildlife hazardous to flight operations. Therefore, only off-site wetland mitigation options are provided.

Mitigation Measure 3.4.10D

As compensation for the filling of 0.2 acre of jurisdictional willow scrub, as described in **Section 3.4.2.2**, either of the following mitigation measures or a combination of the two shall be implemented:

- **Jurisdictional Willow Scrub Replacement.** At least 0.2 acres of willow plantings shall be established at a suitable off-site stream channel mitigation site within the Mark West Creek/Windsor Creek watershed area, subject to the approval of the Corps, RWQCB and CDFG. The willow planting area shall be below the channel's ordinary high water line to allow for the re-establishment of new jurisdictional willow scrub habitat.
- **Mitigation outside the Local Watershed.** If sufficient suitable stream reaches for willow planting cannot be found within the Mark West Creek/Windsor Creek watershed, then other stream reaches on the Santa Rosa Plain may also be used for compensatory mitigation, subject to the approval of the Corps, RWQCB and CDFG.

Implementation of these mitigation measures would reduce the potential impact to jurisdictional wetlands and other waters to a less-than-significant level.

Impact 3.4.11: Loss of Riparian Woodland and Non-Jurisdictional Willow Scrub as a Result of Short-Term Project Elements

The Proposed Project would result in the loss of 3.7 acres of riparian woodland and 1.0 acre of non-jurisdictional willow scrub habitat, as described in **Section 3.4.2.2**. The locations of impacts are shown on **Figure 3.4-1** and include the approximately 350-linear foot reach of willows along Airport Creek that is regularly maintained (trimmed) for runway safety purposes.

Approximately 3.4 acres of this impact would occur as a result of the filling of an approximate 1,500-linear foot reach of Airport Creek and re-routing of the filled reach into a new 850-linear-foot channel and a 650-linear-foot underground culvert. The remainder of the impact would be from removal of riparian vegetation along an approximately 565-linear-foot segment of Airport Creek. The loss of 4.7 acres of riparian woodland/willow scrub would be a significant impact.

Mitigation Measure 3.4.11

As compensation for the removal of 4.7 acres of riparian woodland/willow scrub vegetation, the County of Sonoma shall implement the following mitigation measure:

- **Riparian/Willow Mitigation Plan.** A detailed riparian mitigation and monitoring plan shall be prepared and implemented. The plan shall entail the planting of native tree and shrub species that typically occur on the Santa Rosa Plain, and shall occur along one or more stream reaches in the Mark West Creek/Windsor Creek watershed area, encompassing approximately 4.7 acres. If sufficient suitable stream reaches cannot be found within this watershed, then other stream reaches on the Santa Rosa Plain may be used. All plantings shall be local genetic stock obtained from the Santa Rosa Plain vicinity. The plan shall include planting designs and locations, species palette, quantities and specification of plantings, irrigation/watering plan, a monitoring plan, performance criteria, as well as a long-term, maintenance component.

The mitigation plan shall be subject to the review and approval of the RWQCB and CDFG. The plan shall be implemented prior to or simultaneous with the impacts.

Implementation of this mitigation measure would reduce the potential impact to riparian woodland/willow scrub to a less-than-significant level.

Impact 3.4.12: Loss of Oak Woodland and Individual Native Trees as a Result of Short-Term Project Elements

The Proposed Project would result in the loss of 0.8 acres of oak woodland, primarily in the vicinity of the Airport Creek channel relocation area northeast of the approach end of Runway 14 (see **Figure 3.4-1**). Additionally, various individual oak trees and other native trees would be affected by the Proposed Project. The loss of 0.8 acres of oak woodland, individual oaks and other native trees would be a significant impact.

Mitigation Measure 3.4.12

As compensation for the loss of 0.8 acres of oak woodland vegetation and other individual native trees, the County of Sonoma shall implement the following mitigation measures:

- **Tree Survey.** A tree survey shall be conducted by a certified arborist in all oak woodland areas and other areas with native trees that would be affected by the Proposed Project. The survey shall include all individual native trees with diameters of five inches diameter at breast height (DBH) that would be removed for the Proposed Project. The survey need not map the precise location of each affected tree but should be at a sufficient level of detail to ascertain the sizes and species of each native tree affected.
- **Mitigation Plan.** A detailed oak woodland mitigation and monitoring plan shall be prepared and implemented. The plan shall entail the planting of the same native tree species that are affected and shall occur, to the extent feasible, within the part of the Airport Study Area north of the approach end of Runway 14, but outside the Object Free Area (OFA) (see Mitigation Measure 3.4.13). If full replacement of trees in this area is not feasible, than trees may be planted in other suitable areas within the Airport Study Area, outside of the OFAs. Replacement oak trees shall be planted at a 3:1 replacement ratio; other native tree species shall be replaced at a minimum 1:1 ratio. If sufficient area outside the OFAs cannot be found within the Airport Study Area, then other locations on the Santa Rosa Plain may be used. All plantings shall be local genetic stock obtained from the Santa Rosa Plain vicinity. The plan shall include planting designs and locations, species palette, quantities and specification of plantings, irrigation/watering plan, a monitoring plan, performance criteria, as well as a long-term maintenance component.

Implementation of this mitigation measure would reduce the impact to oak woodland and individual native trees to a less-than-significant level.

Impact 3.4.13: Disturbance of Avoided Sensitive Habitats During Construction of Short-Term Project Elements

Earthmoving, grading and other construction work has the potential to disturb sensitive habitats (i.e., wetlands, ponds, marshes, woodlands, and willow scrub) located outside the actual project development area. Such disturbance could occur as a result of: (1) vehicular and construction equipment operation and movement, (2) material and equipment storage, (3) discharges/runoff of sediment and debris, and (4) unauthorized intrusions by construction personnel. The disturbance of avoided sensitive habitats during construction would be a significant impact.

Mitigation Measure 3.4.13

The County of Sonoma shall implement the following actions to mitigate the impacts associated with the disturbance of sensitive habitats during construction.

- **Pre-construction Fence Installation.** The Project Biologist shall identify and mark with flagging the boundaries of all sensitive habitats within the immediate vicinity of construction areas, prior to staging and construction/ground disturbing activities. The boundaries shall include as much of an upland buffer zone as is practicable based on the proximity of the work areas. Temporary construction fencing shall be erected by the contractor along the marked boundaries to prevent inadvertent entry into the sensitive habitats by equipment or personnel. If fencing is not feasible in some areas due to operational constraints by the FAA, sensitive locations will be delineated on the construction plans.
- **Sediment Control.** When working in the vicinity of an aquatic habitat, the contractor shall implement appropriate measures to confine any sediment, construction materials, and site runoff to the immediate work area. These measures shall include the use of silt fencing as appropriate based on site circumstances, as described in **Mitigation Measure 3.6.2.**
- **Regular Inspections.** For work activities within the vicinity of any sensitive habitat, a designated construction monitor⁴⁴ shall conduct daily pre-work inspections to ensure that all fencing is undisturbed and that no intrusions into the protected habitat areas have occurred. All damage or disturbance of the fencing shall be immediately repaired. If any intrusions or other disturbance of the protected habitats is observed, the Project Biologist and resident engineer shall be notified immediately. The Project Biologist shall determine what remedial work is required, and shall have the authority to require that all work in the vicinity of the disturbance be halted until the remedial work has been successfully implemented. The Project Biologist shall also regularly inspect and monitor construction-related activities to ensure that no intrusions or other disturbances within the fenced boundaries have occurred. At a minimum, inspections by the biologist shall occur on a weekly basis and/or within 24 hours of any storm event.

Implementation of this mitigation measure would reduce the impact to avoided sensitive habitats to a less-than-significant level.

Impact 3.4.14: Loss of Airport Creek Wildlife Movement Corridor as a Result of Short-Term Project Elements

The existing Airport Creek riparian vegetation provides a suitable corridor for the passage of wildlife across the site. The corridor's dense vegetative cover, mesic shaded conditions and aquatic habitat facilitate movement by fish and other aquatic fauna, amphibians, reptiles and small and large mammals.

This existing corridor would be replaced by an 850-linear-foot channel with low-growing vegetation but no appreciable overstory cover, and a 650-linear-foot underground culvert. The culvert is designed to be an arch or box culvert with a natural bottom. The preliminary design assumes that the culvert will consist of three adjacent box culverts. Each box culvert will be 6 feet tall and 10 feet wide. These culverts would physically permit the passage of wildlife; however, the project area will be fenced to exclude large mammals (e.g., deer). As a Part 139 certificated airport, the Airport is required to implement FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*, which includes conducting wildlife studies and taking appropriate measures to eliminate wildlife hazards near aircraft operating areas,

⁴⁴ A designated construction monitor shall be one or more supervisory construction personnel who are trained by the Project Biologist to verify compliance with all biological avoidance and minimization measures.

According to FAA Advisory Circular 150/5200-33B, deer are ranked as the wildlife species representing the greatest hazard to aircraft.⁴⁵

Although limiting access to certain wildlife species is an ongoing goal of the Airport and the Airport is currently taking active steps to exclude large wildlife from the Airport Study Area, the degradation of the Airport Creek wildlife movement corridor is considered to be a significant impact under CEQA. The only feasible way to mitigate loss of the existing corridor is to recreate one on Airport property. This could be accomplished either along Airport Creek's new alignment or elsewhere on the northern edge of Airport property. Adjacent roads make an off-airport corridor impractical. However, recreating a wildlife corridor on the Airport would be inconsistent with the provisions of FAA Advisory Circular 150/5200-33B. As noted in this Advisory Circular, the FAA considers "woodlands, water, or wetlands" on or near an airport to be potential wildlife hazard attractants. The Airport has a documented problem with deer on the airfield.⁴⁶ The Order states that "the FAA recommends immediately correcting, in cooperation with local, state, and Federal regulatory agencies, any wildlife hazards arising from existing wetlands [or woodlands or water] located on or near airports." Based upon this guidance, the Proposed Project includes fencing to exclude deer and other large mammals from the Airport. If the County were to retain or recreate the existing wildlife corridor, the Airport would be out of compliance with requirements established by CFR Part 139. Appendix H identified potential mitigation to offset the loss of the wildlife movement corridor. The County will plant herbaceous species along the relocated open channel, which will stabilize the channel and allow for the movement of small wildlife. However, based on the dictates of FAA Advisory Circular 150/5200-33B, there is no feasible mitigation to offset the loss of on-site wildlife migration corridor for large mammals. Therefore, degradation of a wildlife movement corridor is considered to be a significant impact.

Mitigation Measure 3.4.14

Mitigation Measure 3.4.3a calls for the County to plant herbaceous species along the relocated open channel banks in accordance with FAA guidelines for lands within and adjacent to the OFA. This replanting should allow for the development of partial channel cover that would be conducive to the passage of small wildlife.

Even with the implementation of this mitigation measure, the loss of a wildlife corridor for large mammals is considered to be significant and unavoidable.

Impact 3.4.15: Loss of Suitable Habitat for Burke's Goldfields, Sebastopol Meadowfoam, and Sonoma Sunshine Associated with Long-Term Project Elements

Implementation of the long-term project elements, as currently described in the Master Plan, would not affect any existing populations of these three federal and state-listed Endangered species, nor would it affect any wetlands where these species have historically occurred. However, under the Conservation Strategy and PBO, all of the Airport's vernal pools and other seasonal wetlands are considered to be suitable habitat for the three plant species. Loss of such habitat is considered an adverse impact because the habitat may retain a remnant seed bank. The long-term project elements are still conceptual, and specific development plans have not been prepared at this time. Until the precise scope, design, and location for each long-term project element is more clearly defined, any attempt to quantify impacts to these three species or any wetlands in the Airport Study Area would be purely speculative. Depending on where and

⁴⁵ Federal Advisory Administration, Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*, current edition.

⁴⁶ Lange, Steve, personal communication in 2010.

if these long-term project elements are implemented, a loss of suitable habitat for these three species could occur. For example, replacing the terminal building and control tower in their existing locations would have no impact on these species or any wetlands; however, relocating the control tower or expanding the footprint of the terminal building could affect these sensitive resources. This habitat loss would constitute a potentially significant impact. Each long-term project element will be studied in a focused project-level environmental analysis before it is approved or implemented. To reduce any potentially significant impacts to habitat for Burke's goldfields, Sebastopol meadowfoam, and Sonoma sunshine, the following mitigation measure shall be implemented for long-term project elements.

Mitigation Measure 3.4.15

As each new long-term project element is proposed under the Master Plan, a project-level environmental review shall be conducted to identify any potential impacts to habitat for Burke's goldfields, Sebastopol meadowfoam, and Sonoma sunshine, or wetland areas. If this review identifies impacts to these resources, the County shall either purchase mitigation credits from a USFWS/CDFG approved off-site mitigation or conservation bank on the Santa Rosa Plain or shall acquire land with established habitat for these species at an off-site mitigation area in the Santa Rosa Plain at a ratio approved by the resource agencies.

Implementation of this mitigation measure would reduce the potential impact to Burke's goldfields, Sebastopol meadowfoam, and Sonoma sunshine to a less-than-significant level.

Impact 3.4.16: Loss of Suitable CTS Habitat and Destruction or Adverse Modification of Proposed Critical Habitat for CTS Associated with Long-Term Project Elements

Grading and earthmoving activities associated with the long-term project elements would temporarily affect suitable habitat for CTS (see **Figure 3.4-1**). While it is anticipated that grading and earthmoving activities associated with the long-term project elements would be less than for the short-term project elements, the exact level of these activities cannot currently be quantified. The long-term project elements are still conceptual, and specific development plans have not been prepared. Until the precise scope, design, and location for each long-term project element is more clearly defined, any attempt to quantify impacts to critical habitat for CTS would be purely speculative. The Airport Study Area occurs within the boundaries of proposed Critical Habitat for the Sonoma County distinct population of the CTS. Depending on the location, design, and scope, the long-term project elements could have the potential to destroy or adversely modify Proposed Critical Habitat for CTS. The loss of suitable CTS habitat, and the destruction or adverse modification of proposed Critical Habitat for CTS constitutes a significant impact. Each long-term project element will be studied in a focused project-level environmental analysis before it is approved or implemented. To reduce any potentially significant impacts to suitable habitat or Critical Habitat for CTS, the following mitigation measures shall be implemented for long-term project elements.

Mitigation Measure 3.4.16A

During construction of each new long-term project element, all avoidance and minimization measures set forth in Mitigation Measure 3.4.3A (as those measures may be modified or supplemented by the resource agencies) shall be implemented.

Mitigation Measure 3.4.16B

As each new long-term project element is proposed under the Master Plan, a project-level environmental review shall be conducted to identify any potential impacts to suitable habitat or Critical Habitat for CTS. If this review identifies impacts to these resources, the County shall either purchase mitigation credits from a USFWS/CDFG approved off-site mitigation or conservation bank on the Santa Rosa Plain or shall acquire land with established habitat for these species at an off-site mitigation area in the Santa Rosa Plain at a ratio approved by the resource agencies..

Implementation of these mitigation measures would reduce the potential impact to CTS to a less-than-significant level.

Impact 3.4.17: Potential Loss of Occupied Burrowing Owl Habitat Associated with Long-Term Project Elements

Earthmoving and grading activities for the long-term project elements in open grasslands and ruderal areas could have the potential to destroy burrowing owl burrows and or disturb breeding owls. As noted previously, grading and earthmoving activities associated with the long-term project elements are expected to be less than for the short-term project elements. However, the exact level of these activities cannot currently be quantified. The long-term project elements are still conceptual, and specific development plans have not been prepared. Until the precise scope, design, and location for each long-term project element is more clearly defined, any attempt to quantify impacts to burrowing owl habitat would be purely speculative. Depending on the location, design, and scope, the long-term project elements could have the potential to destroy or adversely modify occupied burrowing owl habitat. These potential effects to burrowing owls would constitute a significant impact. Each long-term project element will be studied in a focused project-level environmental analysis before it is approved or implemented. To reduce any potentially significant impacts associated with the loss of occupied burrowing owl habitat, the following mitigation measure shall be implemented for long-term project elements.

Mitigation Measure 3.4.17

During construction of each new long-term project element, the County shall implement the measures identified in Mitigation Measure 3.4.5 to reduce impacts associated with the loss of occupied burrowing owl habitat.

Implementation of this mitigation measure would reduce the potential impact to burrowing owls to a less-than-significant level.

Impact 3.4.18: Removal or Disturbance of Nesting Birds Associated with Long-Term Project Elements

Earthmoving and tree removal work associated with the long-term project elements could destroy occupied nests of native birds protected under the Migratory Bird Treaty Act and under Sections 3503, 3503.5, and 3513 of the CDFG Code. Construction activities could disturb birds in occupied nests, causing nest abandonment. While grading and earthmoving activities associated with the long-term project elements are expected to be less than for the short-term project elements, the exact level of these activities cannot currently be quantified. The long-term project elements are still conceptual, and specific development plans have not been prepared. Until the precise scope, design, and location for each long-term project element is more clearly defined, any attempt to quantify impacts to nesting birds would be purely speculative. Depending on the location, design, and scope, the long-term project elements could have the potential to remove or disturb nesting birds in the Airport Study Area. These potential effects to

nesting birds would constitute a significant impact. Each long-term project element will be studied in a focused project-level environmental analysis before it is approved or implemented. To reduce any potentially significant impacts to nesting birds, the following mitigation measure shall be implemented for long-term project elements.

Mitigation Measure 3.4.18

During construction of each new long-term project element, the County shall implement the measures identified in Mitigation Measure 3.4.6 to reduce impacts associated with the removal or disturbance of nesting birds.

Implementation of this mitigation measure would reduce the potential impact to nesting birds to a less-than-significant level.

Impact 3.4.19: Potential Destruction or Disturbance of American Badger Dens Associated with Long-Term Project Elements

Earthmoving, grading and construction activities for the long-term project elements in open grasslands and ruderal areas could have the potential to destroy American badger dens. While grading and earthmoving activities associated with the long-term project elements are expected to be less than for the short-term project elements, the exact level of these activities cannot currently be quantified. The long-term project elements are still conceptual, and specific development plans have not been prepared. Until the precise scope, design, and location for each long-term project element is more clearly defined, any attempt to quantify impacts to American badger dens would be purely speculative. Depending on the location, design, and scope, the long-term project elements could have the potential to destroy or disturb American badger dens. These potential effects to American badgers would constitute a significant impact. Each long-term project element will be studied in a focused project-level environmental analysis before it is approved or implemented. To reduce any potentially significant impacts to American badger dens, the following mitigation measure shall be implemented for long-term project elements.

Mitigation Measure 3.4.19

During construction of each new long-term project element, the County shall implement the measures identified in Mitigation Measure 3.4.8 to reduce impacts associated with the destruction or disturbance of American badger dens.

Implementation of this mitigation measure would reduce the potential impact to American badger dens to a less-than-significant level.

Impact 3.4.20: Conflicts with Approved Conservation Plans Associated with Long-Term Project Elements

The long-term project elements of the Proposed Project would result in significant impacts to CTS, Burke's goldfields, Sebastopol meadowfoam and Sonoma sunshine. As such, the long-term project elements have the potential to conflict with the Conservation Strategy. However, with implementation of the Mitigation Measures 3.4.2 and 3.4.3, the long-term project elements would be fully consistent with Conservation Strategy (see **Appendix H** for further analysis of the compliance with the Conservation Strategy). Therefore, the long-term project elements would be consistent with approved conservation plans with the implementation of the identified mitigation measures. This is considered to be a less-than-significant impact.

Mitigation Measure 3.4.20

No mitigation is warranted.

Impact 3.4.21: Loss of Jurisdictional Wetlands and Other Waters of the United States and State of California Associated with Long-Term Project Elements

The long-term project elements of the Proposed Project could result in the filling of jurisdictional seasonal wetlands. However, the long-term project elements are still conceptual, and specific development plans have not been prepared at this time. Until the precise scope, design, and location for each long-term project element is more clearly defined, any attempt to quantify impacts to the wetlands in the Airport Study Area would be purely speculative. Depending on where and if these long-term project elements are implemented, a loss of jurisdictional wetlands could occur. The loss of jurisdictional seasonal wetlands would be a significant impact. Each long-term project element will be studied in a focused project-level environmental analysis before it is approved or implemented. To reduce any potentially significant impacts to jurisdictional wetlands, the following mitigation measure shall be implemented for long-term project elements:

Mitigation Measure 3.4.21

As each new long-term project element is proposed under the Master Plan, a project-level environmental review shall be conducted to identify any potential impacts to jurisdictional wetlands. If this review identifies impacts to these resources, the County shall either purchase mitigation credits from a USFWS/CDFG approved off-site mitigation or conservation bank on the Santa Rosa Plain or shall acquire land with established habitat for these species at an off-site mitigation area in the Santa Rosa Plain at a ratio approved by the resource agencies.

Implementation of this mitigation measure would reduce the potential impact to jurisdictional wetlands to a less-than-significant level.

Impact 3.4.22: Disturbance of Avoided Wetlands during Construction Associated with Long-Term Project Elements

Earthmoving, grading and other construction work for the long-term project elements has the potential to disturb vernal pools and other seasonal wetlands located outside the actual development area. Such disturbance could occur as a result of: (1) vehicular and construction equipment operation and movement, (2) material and equipment storage, (3) discharges/runoff of sediment and debris, and (4) unauthorized intrusions by construction personnel. The disturbance of avoided sensitive habitats during construction would be a significant adverse impact.

Mitigation Measure 3.4.22: Protective fencing, silt fencing and regular inspections

As each new long-term project element is proposed under the Master Plan, a project-level environmental review shall be conducted to identify any potential wetland impacts. If this review identifies a potential to disturb vernal pools and other seasonal wetlands located outside the actual long-term project element development area, the County shall implement the measures set forth in Mitigation Measure 3.4.13.

Implementation of this mitigation measure would reduce the potential impact to vernal pools and other seasonal wetlands located outside the actual development area to a less-than-significant level.

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