4.5 VEGETATION AND WILDLIFE

This section discusses the presence of any species on the Airport listed as threatened or endangered pursuant to the *Endangered Species Act of 1973* (ESA), and describes the habitat necessary to support these species. “Threatened” means that surviving populations of the species are so small that the species could become extinct without protection, while “endangered” means that the entire species is in danger of extinction. In addition, other species that hold a special status either through other Federal laws or through State of California protection are assessed for potential impacts.

4.5.1 ENVIRONMENTAL SETTING

4.5.1.1 Regulatory Framework

**FEDERAL LAWS AND POLICIES**

*Endangered Species Act of 1973*

The U.S. Congress passed the ESA in 1973 to protect those species that are endangered or threatened with extinction (Federally listed species). ESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

ESA prohibits the unauthorized “take” of endangered or threatened wildlife species. “Take” is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (ESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations (CFR) §17.3). Harassment is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in an unauthorized take can result in civil or criminal penalties. ESA, Section 7, consultations have been initiated because it was determined that the proposed project might affect endangered or threatened species.

*Magnuson-Stevens Fishery Conservation and Management Act*

In 1996, acknowledging the importance of fish habitat to the productivity and sustainability of marine fisheries, Congress added new habitat conservation provisions to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the Federal law that governs U.S. marine fisheries management. The act mandates the identification of Essential Fish Habitat (EFH) for managed species, as well as measures to conserve and enhance the habitat necessary for fish to carry out their life cycles. Section 303(a)(7) of the
Magnuson-Stevens Act requires Regional Fishery Management Councils to be formed for purposes of describing and identifying EFH for each Federally managed species.

**Migratory Bird Treaty Act**

The Federal Migratory Bird Treaty Act (MBTA), first enacted in 1916, prohibits any person, unless permitted by regulations, to: “pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention for the protection of migratory birds...or any part, nest, or egg of any such bird.” (16 U.S.C. 703).

The list of migratory birds includes nearly all bird species native to the U.S. The statute was extended in 1974 to include parts of birds, as well as eggs and nests. Thus, it is illegal under MBTA to directly kill, or destroy a migratory bird, or the active nest of a migratory bird without a permit. Activities that result in removal or destruction of an active nest (a nest with eggs or young being attended by one or more adults) would violate the MBTA. Removal of unoccupied nests, or bird mortality resulting indirectly from disturbance activities, is not considered a violation of the MBTA. The Migratory Bird Treaty Reform Act (MBTRA) of 2004 further defined species protected under the act and excluded all non-native species.

**STATE OF CALIFORNIA LAWS AND POLICIES**

**California Endangered Species Act**

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to ESA but pertains to state-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing environmental documents. The purpose is to ensure that the lead agency’s actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of habitat essential to the continued existence of those species if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur, and allows CDFG to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. CESA allows CDFG to authorize exceptions to the state’s prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved (Fish & Game Code § 2081).
California Fish and Game Code

Section 3503.5 of the California Fish and Game Code states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Disturbance activities that result in abandonment of an active bird-of-prey nest in areas adjacent to the disturbance may also be considered a violation of the Fish and Game Code.

California Special Status Species

In addition to formal listing under ESA and CESA, species receive additional consideration by CDFG, U.S. Fish and Wildlife Service (USFWS) and lead agencies during the environmental process. Species that may be considered for review are included on a list of “Species of Special Concern,” developed by these resource agencies. It tracks species in California whose numbers, reproductive success, or habitat may be in decline.

A Biological Assessment (see Appendix I) is to be prepared to determine whether a proposed action is likely to adversely affect listed species or designated critical habitat, jeopardize the continued existence of species that are proposed for listing, or adversely modify a proposed Critical Habitat. The preparation of a Biological Assessment is mandatory for major construction activities.

In compliance with the ESA and CESA, agencies overseeing Federally-funded projects are required to obtain from the USFWS and the CDFG information concerning any species listed, or proposed to be listed on the Endangered Species List, which may be present in the area of the proposed development. The impact of the project on any such species must be evaluated and appropriate measures to avoid or compensate for these impacts must be enacted. The Detailed Study Area (DSA) was evaluated for the potential for existence of Federal and State of California protected plant or animal species, and their respective habitats.

California Environmental Quality Act (CEQA) Guidelines Section 15380

Although threatened and endangered species are protected by specific Federal and State statutes, California Environmental Quality Act (CEQA) Guidelines section 15380(b) provides that a species not listed on the Federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the ESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the Guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a “candidate species” that has not yet been listed by either the USFWS or CDFG. Thus, CEQA provides an agency with the ability to protect a species from a project’s potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.
California Native Plant Society (CNPS)

The California Native Plant Society (CNPS) maintains a list of plant species native to California with low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

- List 1A: Plants presumed Extinct in California.
- List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.
- List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.
- List 3: Plants about which we need more information – A Review List.
- List 4: Plants of limited distribution – A Watch List.

State Jurisdiction of the Waters of the United States

The CDFG is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Section 1602, a private party must notify CDFG if a proposed project will “substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds...except when the department has been notified pursuant to Section 1601.” If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFG may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFG identifying the approved activities and associated mitigation measures.

MARIN COUNTY LAWS AND POLICIES

Marin Countywide Plan

The Marin Countywide Plan provides guidance and recommendations regarding preservation and management of natural resources within the County. The City-Centered Corridor along Highway 101 and adjacent to the Bay is designated for concentrated urban development and for protection of designated environmental resources. Gnoss Field would presumably fall under this portion of the Countywide Plan. Applicable executive summaries of the County guidelines to Gnoss Field are provided below. Additional detail is available in the Marin Countywide Plan including goals and objectives for preservation of specific biological resources within the County.
Bayfront Conservation Zone

The Bayfront Conservation Zone includes tidal marshes, seasonal marshes, lagoons, natural wetlands, and low-lying grasslands overlying historic marshlands. Three subzones exist within the Bayfront Conservation Zone: 1) the Tidelands Subzone, areas subject to tidal action; 2) the Diked Bay Marshlands and Agricultural Subzone, former marshlands which have been diked and often filled for agricultural and urban uses; and 3) the Shoreline Subzone, steep shoreline areas between roadways and Tidelands Subzones. The County has adopted a zoning overlay district in unincorporated bayfront areas, requiring environmental assessment of existing conditions within the Bayfront Conservation Zone prior to preparation of master plans and development plans. Policies in this Plan encourage land uses that enhance wildlife and aquatic habitat, such as agriculture, wastewater reclamation, restoration of lands to tidal status, and flood basin.

In the Diked Bay Subzone, land uses are encouraged which provide or protect wetlands and which do not require diking, filling, or dredging. Other uses may be allowed if they are consistent with zoning designations and impacts are minimized and mitigated. Uses must also conform to applicable Federal and State regulations. Restoration of bay marshlands offers significant potential for habitat value and would be encouraged whenever possible. Policies in this document preserve the dramatic viewsheds and coastal habitats in the Shoreline Subzone.

Stream and Creekside Conservation Areas

Policies in this document establish buffer zones called Stream Conservation Areas (SCAs) for the protection of riparian systems, streams, and related habitats. SCAs exist along perennial and intermittent streams, as defined by solid and dashed blue lines on U.S. Geological Survey (USGS) quad maps. A Stream Conservation Area consists of a watercourse, surrounding banks, and a strip of land extending laterally from the top of both banks. Uses allowable in the Stream Conservation Area include: necessary water supply and flood control projects, improvements to fish and wildlife habitat, grazing, agriculture, maintenance of channels for erosion control, water monitoring installations, and trails. Prohibited uses include, but are not limited to: roads and utility lines (except at crossings), confinement of livestock, dumping, use of motorized vehicles, and new structures.

Species Protection

The lands in Marin County provide habitat for a rich variety of plants and animals. However, several species of plants and animals and some natural communities in Marin County are becoming increasingly rare, due to changes in the landscape caused by human activities. Through the development review process, Marin County seeks to protect the natural habitat from detrimental human activity.
4.5.1.2 Existing Conditions

Biotic communities at and in the vicinity of DVO were surveyed as part of this environmental analysis. The full report is included in Appendix I, *Fish, Wildlife, and Plants*, of this document.¹ Two major biological communities occur within the immediate vicinity of DVO including annual grassland and high brackish marsh. Annual grassland is the dominant upland plant community within the DSA and is characterized primarily by an assemblage of non-native grasses and forbs and typically supports breeding, foraging, and shelter habitat for several species of wildlife. High brackish marsh, a wetland community, is the major plant community within the DSA outside of the developed airfield. Lesser amounts of other wetland types are also present. High brackish marsh typically supports breeding and foraging habitat for a variety of wildlife. Each of the biological communities including associated common plant and wildlife species observed, or that are expected to occur within these communities are described in the following discussions. Locations of biotic communities and wildlife habitats within the DSA are shown in Exhibit 4.5-1, *Vegetation and Wildlife Habitats*.

**ANNUAL GRASSLAND**

Annual Grassland is the dominant upland plant community within the DSA (see Exhibit 4.5-1, *Vegetation and Wildlife Habitats*). Annual grassland is characterized primarily by an assemblage of non-native grasses and forbs and typically supports breeding, foraging, and shelter habitat for several species of wildlife. Species observed or expected to occur in this habitat include savannah sparrow (*Passerculus sandwichensis*), western meadowlark (*Sturnella neglecta*), white-tailed kite (*Elanus leucurus*), western burrowing owl (*Athene cunicularia hypugaea*), northern harrier (*Circus cyaneus*), black-tailed jackrabbit (*Lepus californicus*), and gopher snake (*Pituophis melanoleucus*).²

**HIGH BRACKISH MARSH**

High Brackish Marsh, a wetland community, is the major plant community within the DSA outside of the developed airfield. Lesser amounts of other wetland types are also present as described in Section 4.19, Wetlands. High Brackish Marsh typically supports breeding and foraging habitat for a variety of wildlife. Species observed within this community include northern harrier (*Circus cyaneus*), red-winged blackbird (*Agelaius phoeniceus*), short-eared owl (*Asio flammeus*), black necked stilt (*Himantopus mexicanus*), killdeer (*Charadrius vociferus*), marsh wren (*Cistothorus palustris*), and San Pablo song sparrow (*Melospiza melodia samuelis*).³

¹ *Biological Resources Assessment, Marin County Airport*, Prepared by Foothill Associates, 2011. See Appendix I.
² *Biological Resources Assessment, Marin County Airport*, Prepared by Foothill Associates, 2011. See Appendix I.
³ *Biological Resources Assessment, Marin County Airport*, Prepared by Foothill Associates, 2011. See Appendix I.
EXHIBIT: FINAL Vegetation and Wildlife Habitats

Legend
- Non-Jurisdictional
- Annual Grassland
- Depressional Seasonal Wetland
- High Brackish Marsh
- Perennial Drainage
- Ditch/Canal
- Jurisdictional Waters of the U.S.
- Previously Identified Burrowing Owl Locations
- Detailed Study Area
- Airport Property Boundary

Environmental Impact Report
Gnoss Field Airport

FINAL
7/15/2013 Prepared by Landrum & Brown
Filename: P:\DVO-Gnoss Field\GIS\MXD\EIR\EIR_Exhibits\EIR_Document\4.5-1_Vegetation and Wildlife Habitats.mxd

Exhibit: 4.5-1
SPECIAL STATUS SPECIES

Special-status species are plant and animal species that have been afforded special recognition by Federal and/or state agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS);
- Listed as threatened or endangered under the California Endangered Species Act or otherwise fully protected under California state law; or
- Protected under other regulations, such as the Migratory Bird Treaty Act (MBTA).

Special-status species considered for this analysis are based on a USFWS list of Federally threatened or endangered species; Federally designated critical habitat that could potentially be affected by the project; and query of the California Department of Fish and Game’s (CDFG) California Natural Diversity Data Base (CNDDB) for the Petaluma River quadrangle and the eight surrounding quadrangles. Tables 4.5-1 and 4.5-2 include the common names and scientific names for each Federal and State of California threatened or endangered plant and wildlife species, respectively, and their potential for occurrence within the DSA.

PLANTS

Federally Threatened and Endangered Plant Species

Based on the USFWS list, special-status plant species have the potential to occur onsite or in the vicinity of the DSA. However, based on field observations and literature review specific to the special-status plants listed in Table 4.5-1, no Federally threatened or endangered plant species are known to be present or are considered to have a high potential to occur within the DSA. The late blooming plant species that is considered to have a low potential to occur onsite is the soft bird’s beak (Cordylanthus mollis ssp. mollis). Surveys to identify the presence of soft bird’s beak were performed on the site in March 2008, July 2009, and July, August, and September of 2010. No occurrences of soft bird’s beak were found during these surveys (see Appendix I). Based upon the lack of observed occurrence, the marginally-suitable nature of the available habitat on-site (primarily due to the alteration of the site’s hydrologic and plant community structure by surrounding levees), and the fact that the majority of the potential habitat is within a highly disturbed, actively grazed, non-native agricultural community, it has been concluded that this species is absent from the site.4

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4 Biological Resources Assessment, Marin County Airport, Prepared by Foothill Associates, 2011. See Appendix I
State Of California Threatened and Endangered Plant Species

Based on a records search of the CNDDDB, special-status plant species have the potential to occur onsite or in the vicinity of the DSA. However, based on field observations and literature review specific to the special-status plants listed in Table 4.15-2 no State of California threatened or endangered plant species are known to be present or are considered to have a high potential to occur within the DSA. The late blooming plant species that are considered to have a low potential to occur on-site is the soft bird’s beak (*Cordylanthus mollis* ssp. *mollis*). Surveys to identify the presence of soft bird’s beak were performed on the site in March 2008, July 2009, and July, August, and September of 2010. No occurrences of soft bird’s beak were found during these surveys (see Appendix I). Based upon the lack of observed occurrence, the marginally-suitable nature of the available habitat on-site (primarily due to the alteration of the site’s hydrologic and plant community structure by surrounding levees), and the fact that the majority of the potential habitat is within a highly disturbed, actively grazed, non-native agricultural community, it has been concluded that this species is absent from the site.5

Other Plant Species of Concern

Through the tribal coordination process as part of this document, the FAA and Marin County held a meeting in December 2008 with representatives of the Federated Indians of Graton Rancheria (FIGR) (see Appendix H). At that meeting, FIGR representatives identified 42 native plant species that they consider to be sacred and culturally significant. See Appendix H for this list of FIGR Native Plants. Of the 42 plant species identified by the FIGR as sacred and culturally significant, one species, the Showy Indian Clover (*Trifolium amoenum*), is both a Federal and State of California threatened or endangered plant species. However, based on field observations and literature review specific to the special-status plant species, it was determined that the DSA does not contain suitable habitat for this species.6 The remaining plant species identified by the FIGR are not Federally or State of California threatened or endangered species.

WILDLIFE

Federally Threatened and Endangered Wildlife

Based on the USFWS list, field observations, and literature reviews, no Federally threatened or endangered plant, animal, or bird species are present within the DSA. However, consultation with the USFWS has identified portions of the project site as potential habitat for the salt marsh harvest mouse and California clapper rail. The Salt marsh harvest mouse is strongly associated with pickleweed-dominated saltwater marshes of San Francisco, Suisun, and San Pablo Bay. California clapper rail is found in salt and brackish water marshes on the California coast. Both of these types of habitats are present in the DSA.

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5 Biological Resources Assessment, Marin County Airport, Prepared by Foothill Associates, 2011. See Appendix I
6 Biological Resources Assessment, Marin County Airport, Prepared by Foothill Associates, 2011. See Appendix I
In addition, while there is no habitat for the California red-legged frog (*Rana aurora draytonii*) in the DSA, there is a low potential for it to be present onsite during the winter months as a result of dispersing from nearby areas.

By letter of March 5, 2010 the National Marine Fisheries Service concluded that the Sponsor’s Proposed Project, and the alternative projects considered in detail in this EIS/EIR, do not have the potential to affect federally listed fish species or designated critical habitat for federally listed fish species under the cognizance of the Service (Appendix I).

By letter of November 16, 2011 the FAA initiated Endangered Species Act, Section 7, consultation with the U.S. Fish and Wildlife Service for the proposed project (Appendix I).

**California Special Status Species of Concern**

The biological resources assessment identified a number of California special status species within the DSA, including: Salt marsh harvest mouse (*Reithrodontomys raviventris*), California clapper rail (*Rallus longirostris obsoletus*), northern harrier (*Circus cyaneus*); san pablo song sparrow (*Melospiza melodia samuelis*); western burrowing owl (*Athene cunicularia hypugaea*); white-tailed kite (*Elanus leucurus*); and other raptors (hawks, owls and vultures). In addition, there is low potential for the California red-legged frog (*Rana aurora draytonii*) to be present onsite during the winter months.

**Federally and State Threatened and Endangered Fish Species**

The Proposed Project is located on the inland side of levees that separate the runway extension project area from the Petaluma River and San Pablo Bay. Coordination with the USFWS\(^7\) and NMFS\(^8\) confirmed that there no Federally threatened or endangered fish species would be expected to occur in the runway extension project area or be affected by the Proposed Project (see Appendix I). The NMFS also stated that the Proposed Project would not affect Essential Fish Habitat as defined by the Magnuson-Stevens Fishery Conservation and Management Act. No State of California threatened or endangered fish species occur in the runway extension project area.

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\(^7\) *Biological Assessment, Gnoss Field Airport, Marin County, California*, Prepared by Landrum & Brown and Foothill Associates, 2011. See Appendix I

\(^8\) Letter from National Marine Fisheries Service to Federal Aviation Administration, March 5, 2010 (see Appendix I for copy of letter).
### Table 4.5-1
FEDERALLY THREATENED AND ENDANGERED SPECIES THAT OCCUR OR HAVE THE POTENTIAL TO OCCUR WITHIN THE DETAILED STUDY AREA
Gnoss Field Airport

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>FEDERAL STATUS</th>
<th>POTENTIAL HABITAT IN DSA</th>
<th>POTENTIAL FOR OCCURRENCE IN DSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soft bird’s beak</td>
<td><em>Cordylanthus mollis</em> ssp. <em>mollis</em></td>
<td>Endangered</td>
<td>Marginal potential habitat in DSA</td>
<td>Concluded species is absent based on negative species survey in DSA.</td>
</tr>
<tr>
<td>WILDLIFE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California clapper rail</td>
<td><em>Rallus longirostris</em> <em>obsoletus</em></td>
<td>Endangered</td>
<td>Habitat is present in DSA</td>
<td>USFWS has determined that the area of the proposed runway extension is habitat for the California clapper rail. The FAA concurred with this determination. Suitable marsh habitat for this species exists to the south of the study area and the species could seasonally (winter) forage within the survey area.</td>
</tr>
<tr>
<td>Animals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salt marsh harvest mouse</td>
<td><em>Reithrodontomys-raviventris</em></td>
<td>Endangered</td>
<td>Habitat is present in DSA</td>
<td>USFWS has determined that the brackish marsh area north of the proposed runway extension is habitat for the salt marsh harvest mouse. The FAA concurred with this determination. Marginal habitat for this species occurs within the study area, specifically within the areas of man-made drainage, which provide (limited) connectivity with suitable habitats adjacent to the Petaluma River and east of a levee used to isolate the Airport from tidal flows and processes. Although pickleweed is present in the DSA, it does not contain pickleweed-dominated marsh. Rather, the marsh is dominated by saltgrass and alkali heath.</td>
</tr>
<tr>
<td>Amphibians/Reptiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California red-legged frog</td>
<td><em>Rana aurora draytonii</em></td>
<td>Threatened</td>
<td>Habitat is present in DSA during winter months</td>
<td>There is low potential for the frog to be present onsite during winter months as a result of dispersing from adjacent localized freshwater habitat areas. If the species migrates into the site outside of the winter months (i.e. during the region’s dry period), it is not anticipated to survive.</td>
</tr>
</tbody>
</table>

Source: *Biological Resources Assessment, Marin County Airport, Prepared by Foothill Associates, 2011. See Appendix I.*
Table 4.5-2
STATE OF CALIFORNIA SPECIES WITH SPECIAL STATUS THAT OCCUR OR HAVE THE POTENTIAL TO OCCUR WITHIN THE DETAILED STUDY AREA
Gnoss Field Airport

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>FEDERAL STATUS</th>
<th>STATE STATUS</th>
<th>POTENTIAL HABITAT IN DSA</th>
<th>POTENTIAL FOR OCCURRENCE IN DSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PLANTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soft bird’s beak</td>
<td>Cordylanthus mollis ssp. mollis</td>
<td>Endangered</td>
<td>CR</td>
<td>Marginal potential habitat in DSA</td>
<td>Concluded species is absent based on negative species survey in DSA.</td>
</tr>
<tr>
<td><strong>WILDLIFE</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California clapper rail</td>
<td>Rallus longirostris obsoletus</td>
<td>Endangered</td>
<td>Endangered/CFP</td>
<td>Habitat is present in DSA</td>
<td>USFWS has determined that the area of the proposed runway extension is habitat for the California clapper rail. The FAA concurred with this determination. Suitable marsh habitat for this species exists to the south of the study area and the species could seasonally (winter) forage within the survey area.</td>
</tr>
<tr>
<td>Loggerhead shrike</td>
<td>Lanius ludovicianus</td>
<td>--</td>
<td>CSC</td>
<td>Marginal potential habitat in DSA</td>
<td>Concluded species is unlikely to occur in the DSA based on the absence of suitable habitat.</td>
</tr>
<tr>
<td>Northern harrier</td>
<td>Circus cyaneus</td>
<td>--</td>
<td>CSC</td>
<td>Habitat is present in DSA</td>
<td>Concluded species are present based on positive species survey in DSA.</td>
</tr>
<tr>
<td>San Pablo song sparrow</td>
<td>Melospiza melody samuelis</td>
<td>--</td>
<td>CSC</td>
<td>Habitat is present in DSA</td>
<td>Concluded species are present based on positive species survey in DSA.</td>
</tr>
</tbody>
</table>
Table 4.5-2, Continued
STATE OF CALIFORNIA SPECIES WITH SPECIAL STATUS THAT HAVE THE POTENTIAL TO OCCUR WITHIN THE DETAILED STUDY AREA (DSA)
Gnoss Field Airport

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>FEDERAL STATUS</th>
<th>STATE STATUS</th>
<th>POTENTIAL HABITAT IN DSA</th>
<th>POTENTIAL FOR OCCURRENCE IN DSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birds, Continued</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tricolored blackbird</td>
<td><em>Agelaius tricolor</em></td>
<td>--</td>
<td>CSC</td>
<td>Marginal potential habitat in DSA</td>
<td>Concluded species is unlikely to occur in the DSA based on the absence of suitable habitat.</td>
</tr>
<tr>
<td>Western burrowing owl</td>
<td><em>Athene cunicularia hypugae</em></td>
<td>--</td>
<td>CSC</td>
<td>Habitat is present in DSA</td>
<td>Concluded species are present based on positive species survey in DSA.</td>
</tr>
<tr>
<td>White-tailed kite</td>
<td><em>Elanus leucurus</em></td>
<td>--</td>
<td>CFP</td>
<td>Habitat is present in DSA</td>
<td>Concluded species are present based on positive species survey in DSA.</td>
</tr>
<tr>
<td>Other Raptors (Hawks, Owls and Vultures)</td>
<td>Protected under Migratory Bird Treaty Act (MBTA)</td>
<td>Protected under Section 3503.5 of the California Fish and Game Code</td>
<td>Protected under Section 3503.5 of the California Fish and Game Code</td>
<td>High potential habitat in DSA</td>
<td>Concluded species are present based on positive species survey in DSA.</td>
</tr>
<tr>
<td><strong>Animals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American badger</td>
<td><em>Taxidea taxus</em></td>
<td>--</td>
<td>CSC</td>
<td>Marginal potential habitat in DSA</td>
<td>Concluded species is unlikely to occur in the DSA based on the absence of suitable habitat.</td>
</tr>
<tr>
<td>Pallid bat</td>
<td><em>Antrozous pallidus</em></td>
<td>--</td>
<td>CSC</td>
<td>Marginal potential habitat in DSA</td>
<td>Concluded species is unlikely to occur in the DSA based on the absence of suitable habitat.</td>
</tr>
</tbody>
</table>
Table 4.5-2, Continued
STATE OF CALIFORNIA SPECIES WITH SPECIAL STATUS THAT HAVE THE POTENTIAL TO OCCUR WITHIN THE DETAILED STUDY AREA (DSA)
Gnoss Field Airport

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>FEDERAL STATUS</th>
<th>STATE STATUS</th>
<th>POTENTIAL HABITAT IN DSA</th>
<th>POTENTIAL FOR OCCURRENCE IN DSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt marsh harvest mouse</td>
<td>Reithrodontomys-raviventris</td>
<td>Endangered</td>
<td>Endangered/CFP</td>
<td>Habitat is present in DSA</td>
<td>USFWS has determined that the brackish marsh area north of the proposed runway extension is habitat for the salt marsh harvest mouse. The FAA concurred with this determination. Marginal habitat for this species occurs within the study area, specifically within the areas of man-made drainage, which provide (limited) connectivity with suitable habitats adjacent to the Petaluma River and east of a levee used to isolate the Airport property from tidal flows and processes. Although pickleweed is present in the DSA, it does not contain pickleweed-dominated marsh. Rather, the marsh is dominated by saltgrass and alkali heath.</td>
</tr>
</tbody>
</table>
Table 4.5-2, Continued
STATE OF CALIFORNIA SPECIES WITH SPECIAL STATUS THAT HAVE THE
POTENTIAL TO OCCUR WITHIN THE DETAILED STUDY AREA (DSA)
Gnoss Field Airport

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>FEDERAL STATUS</th>
<th>STATE STATUS</th>
<th>POTENTIAL HABITAT IN DSA</th>
<th>POTENTIAL FOR OCCURRENCE IN DSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animals, Continued</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Townsend’s big-eared Bat</td>
<td>Corynorhinus townsendii</td>
<td>--</td>
<td>CSC</td>
<td>Marginal potential habitat in DSA</td>
<td>Concluded species is unlikely to occur in the DSA based on the absence of suitable habitat.</td>
</tr>
<tr>
<td>Amphibians/Reptiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California red-legged frog</td>
<td>Rana aurora draytonii</td>
<td>Threatened</td>
<td>CSC</td>
<td>Habitat is present in DSA during winter months</td>
<td>There is low potential for the frog to be present onsite during winter months as a result of dispersing from adjacent localized freshwater habitat areas. If the species migrates into the site outside of the winter months (i.e. during the region’s dry period), it is not anticipated to survive.</td>
</tr>
</tbody>
</table>

KEY:
State of California Classifications: CFP = California Fully Protected; CSC = California Species of Special Concern; CR = California State Rare;
Source: Biological Resources Assessment, Marin County Airport, Prepared by Foothill Associates, 2011. See Appendix I
4.5.2 ENVIRONMENTAL IMPACTS AND MITIGATION

4.5.2.1 Significance Criteria

Based on Appendix G, of the CEQA Guidelines impacts to biological resources would normally be considered significant if the project would result in any of the following:

- 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, policies, or regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or USFWS;
- Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

An evaluation of whether an impact to biological resources would be significant must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or Federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. This is necessary because although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.
4.5.2.2 Environmental Impacts of the Proposed Project

Impact 4.5-1: Fill approximately 11.83 acres of wetlands protected by Section 404 of the CWA, of which 2.66 acres are also protected by Section 10 of the RHA (potentially significant unless mitigated).

Fill material would be needed for the extension of the perimeter levees and the runway extension. The amount of fill was determined from the design profile, the pavement structural section width, and side slopes required to meet FAA design standards and the existing site topography. In addition, construction staging activities (material storage, equipment staging, etc.) would be conducted on site in close proximity to where the runway extension would occur.

As a result of the fill material and the construction staging activities, all of the wetlands within the area disturbance would be impacted through filling (See Section 4.19, Wetlands, Exhibit 4.19-2, Area of Disturbance). For the purposes of this analysis, the area of disturbance for the project was estimated to be a total of 23.35 acres (23.02 acres on the north side and 0.33 acres on the south side). The construction of the Proposed Project would result in the following impacts on wetlands and aquatic resources within the area of disturbance:

- Fill 10.29 acres of High Brackish Marsh wetland
- Fill 0.59 acres of perennial drainage
- Fill 1.57 acres of ditches/canals
- Fill 0.15 acres of depressional seasonal wetland

As part of the Proposed Project, 0.77 acres of new ditch/canal wetlands would be created to extend the drainage ditches around the runway and RSA on the north side of the Airport. Therefore, this would result in an overall decrease in area of 0.80 acres of ditch/canal features. Although the ditch/canal system would be extended in length, there would be a net decrease in the area of ditch/canal due to the irregular shape of the existing drainage system ditch versus the more uniform shape of the proposed drainage system ditch. The replacement ditch/canal system would extend around the new runway and taxiway extensions and would serve the same hydrologic function as the existing ditch/canal, which is to collect surface water and to transport it west to east across the site towards the Petaluma River. The proposed project as designed would fit in with the existing topography to avoid and minimize impacts to wetlands to the extent practical. In addition, the project sponsor proposes to minimize the potential direct and secondary impacts on wetlands by requiring all construction activities be conducted pursuant to guidelines included in FAA, Standards for Specifying Construction of Airports and locally required Best Management Practices.

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9 Preliminary Design Report Runway Extension Gnoss Field Marin County, California FAA AIP Project No. 3-06-0167-08. Cortright & Seibold, December 20, 2002.

In total, the Proposed Project would impact approximately 11.83 acres of wetlands regulated under Section 404 of the CWA, of which 2.66 acres are also regulated under Section 10 of the RHA. A summary of the wetland impacts is provided in Table 4.5-3.

**Table 4.5-3**
**ACREAGE OF WETLANDS AND OTHER WATERS FILLED BY PROPOSED PROJECT**
Gnoss Field Airport

<table>
<thead>
<tr>
<th>WETLAND TYPE</th>
<th>ACREAGE FILLED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressional Seasonal</td>
<td>0.15</td>
</tr>
<tr>
<td>Riverine Seasonal I</td>
<td>0.00</td>
</tr>
<tr>
<td>Slope Seep</td>
<td>0.00</td>
</tr>
<tr>
<td>High Brackish Marsh</td>
<td>10.29</td>
</tr>
<tr>
<td>Perennial Drainage</td>
<td>0.59</td>
</tr>
<tr>
<td>Ditch/Canal*</td>
<td>1.57 removed</td>
</tr>
<tr>
<td></td>
<td>0.77 created</td>
</tr>
<tr>
<td></td>
<td>0.80 net impact</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>11.83</strong></td>
</tr>
</tbody>
</table>

Note: The Proposed Project proposes to extend and maintain the ditch/canal system around the extended runway and taxiway, offsetting a portion of the area filled. It is expected that potential impacts to the ditch/canal would be temporary during construction.


**Mitigation Measure 4.5-1:** The Marin County Airport does not have enough property to mitigate for the fill of 11.83 acres of wetlands on-site. In addition, the FAA would not support a mitigation program that created new wetlands on airport property north of the proposed runway extension. Accordingly, mitigation for filled wetlands, with the exception of the ditches/channel that will be mitigated on site, will have to be located off-site.

The National Environmental Policy Act (NEPA), EO 11990 *Protection of Wetlands*, and Department of Transportation (DOT) Order 5660.1A *Preservation of the Nation’s Wetlands*, all require consideration of mitigation measures for adverse environmental impacts. The USACOE regulations at 33 CFR 332 describes compensatory mitigation requirements. The USACOE regulations at 33 CFR 332.3 (b) identify the order of preference for different types of compensatory mitigation for aquatic impacts from most preferable to least preferable as:

- Mitigation bank credits
- In-lieu fee program credits
- Permittee-responsible mitigation under a watershed approach
- Permittee-responsible mitigation through on-site and in-kind mitigation
- Permittee-responsible mitigation through off-site and/or out-of-kind mitigation
The USACOE mitigation regulations at 33 CFR 332.3 (b)(1) state that compensatory mitigation projects should not be located where they will increase the risks to aviation by attracting wildlife to areas where aircraft-wildlife strikes may occur (e.g. near airports). As on-site and in-kind wetland mitigation for this project could potentially attract wildlife and increase the risk of aircraft-wildlife strikes, on-site, in-kind aquatic resource mitigation at DVO would be inconsistent with USACOE compensatory mitigation regulations and FAA Advisory Circular 150/5200-33B Hazardous Wildlife Attractants on or Near Airports.

USACOE mitigation regulations at 33 CFR 332.3 (f) also require that compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions, and that a minimum one-to-one acreage or linear foot mitigation compensation ratio be used unless another functional or condition assessment method or other suitable metric is available to evaluate the loss of aquatic resource function.

The USACOE maintains a listing of approved Wetland Mitigation Banks in the San Francisco Bay Area. The following are noted as potential mitigation alternatives.

Marin Countywide Plan Policy BIO-3.2 states that where avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration and/or habitat creation at a minimum ratio of 2 acres for each acre lost (2:1 replacement ratio) for on-site mitigation and a minimum 3:1 replacement ratio for off-site mitigation. Mitigation wetlands should be of the same type as those lost and provide habitat for the species that use the existing wetland. Mitigation should also be required for incursion within the minimum WCA setback/transition zone. FAA regulations prohibit the creation of wetlands next to airports and would not allow the creation of wetland habitat on-site even though it would be possible to create new wetlands in the area around the airport. The County in implementing its wetland mitigation policy would have to take into consideration the FAA restriction in determining the appropriate ratio of compensatory mitigation.

SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE

Several San Francisco Bay National Wildlife Refuge (Refuge) projects needing funding are potential mitigation alternatives. Initial contact has been made with Mendel Stewart, Manager of the San Francisco Bay National Refuge and Don Brubaker, North Bay Refuges Manager within the Several San Francisco Bay National Wildlife Refuge. Several projects associated with the restoration of tidal marsh habitat areas were discussed. These projects, in general, are relatively large with multi-million dollar costs. As mitigation for impacts to wetlands, the County may contribute towards a larger effort that would be built in the appropriate timeframe. Impacts to wetlands would be compensated by the contribution of funding or purchase of credits for in-kind habitat creation or restoration. Potential sites for the tidal marsh creation/restoration include:

- The Cullinan Ranch Restoration Project which is a 1,549 acre tidal marsh restoration project near Vallejo. The U.S. Fish and Wildlife Service and the California Department of Fish and Game issued a Final Environmental Impact Statement/Environmental Impact Report in May 2009, and the U.S. Fish and Wildlife Service issued a Record of Decision for this project on April 9, 2010. Construction of the site appears imminent and may begin in time to service the project;

- The Sonoma Creek Enhancement Project, which is a 500 acre project associated with the San Pablo Bay National Wildlife Refuge (NWR). The project would be implemented at the mouth of the Sonoma Creek where it enters the bay on the western bank. The project is being funded jointly by the NWR, Audubon Society, and the localized mosquito abatement district. Engineering and design of the project is complete, but permitting has yet to be completed. Contribution to this project may be a viable alternative; and

- Other alternatives are possible within the San Francisco Refuge complex, but timing and quantification of creation/restoration to complete mitigation are factors that would require continued coordination.

**OFFSITE RESTORATION BY PRIVATE ENTITY**

A private individual was contacted regarding a parcel of land they indicated they owned that is approximately 7,500 feet from the Airport. The individual indicated interest in developing salt marsh harvest mouse habitat to sell for mitigation credits or develop a project-specific agreement with Marin County for mitigation. There is the potential to fund this project with the purchase of mitigation credits which would be associated with the site. By working with a private individual, it may be easier to negotiate terms and conditions to suit the project mitigation requirements.

**OFFSITE RESTORATION BY CONSERVATION GROUP OR PUBLIC ENTITY**

The San Francisco Bay Joint Venture (SFBJV) is one of 18 Joint Ventures established under The Migratory Bird Treaty Act and funded under the annual Interior Appropriations Act. It brings together public and private agencies, conservation groups, development interests, and others to restore wetlands and wildlife habitat in San Francisco Bay watersheds and along the Pacific coasts of San Mateo, Marin, and Sonoma counties.

The Sonoma Land Trust’s 2,327-acre Sears Point Wetlands and Watershed Restoration Project is another example of a potential off-site restoration site in which participation by Marin County might be considered allowable mitigation by the U.S. Army Corps of Engineers. The project is located in southern Sonoma County on the edge of San Pablo Bay between the Petaluma River and Tolay Creek. The project includes diked agricultural baylands, alluvial fans, hillslopes reaching elevations of 400 feet above sea level, and numerous small drainages.
The impacts to jurisdictional ditch/canal features identified for the Proposed Project will be ‘replaced in kind’ on site in an amount that would be at a minimum of 2:1. Therefore, permits for these identified impacts may not be necessary as the mitigation is built into the Proposed Project, thereby reducing wetland impacts to a less-than-significant level.

An Individual Permit under Section 404 of the CWA would be required to construct the Proposed Project. Permitting under Section 10 of the RHA would also be required. As the owner and operator of the Airport, it will be the responsibility of Marin County to apply for all permits as required by all applicable regulatory agencies. The USACOE requires, in general, that if a practicable alternative does not exist that meets the purpose and need of the Proposed Project and avoids or minimizes impacts to wetlands and/or streams, compensatory mitigation in the form of preservation and/or restoration may be required.

As an alternative to the purchase of mitigation credits, or in conjunction with the purchase of mitigation credits, the project sponsor could prepare a specialized wetland mitigation plan in conjunction with its application for an Individual Permit. The wetland mitigation plan will be finalized during the USACOE Section 404 and RHA Section 10 permitting processes. It should be noted that the impacts to jurisdictional ditch/canal features identified for the project will be ‘replaced in kind’ on site in an amount that would be at a minimum of 2:1. Therefore, permits for these identified impacts may not be necessary as the mitigation is built into the project.

**Significance After Mitigation** – Purchase of credits at a recognized mitigation bank or the approval of an alternative feasible wetland mitigation plan as part of the Section 404 and Section 10 Individual Permit requirements would reduce the wetland fill impacts of the project to a less-than-significant level.

**Responsibility and Monitoring** – The Marin County Department of Public Works shall be responsible for the Mitigation Monitoring and Reporting Plan which will incorporate the provisions of Mitigation Measure 4.5-1.

**Impact 4.5-2:** The Proposed Project would permanently impact habitat for two Federal Threatened and Endangered wildlife species and would temporarily impact this habitat during construction activities (significant unless mitigated).

**Permanent and Temporary Habitat Impacts**

The Proposed Project would not result in a direct taking of any Federally threatened or endangered species. However, the USFWS has concluded that the undeveloped areas within the project site are considered habitat for both the salt marsh harvest mouse (SMHM) and California clapper rail (CCR). These areas consist primarily of high brackish marsh, other wetlands, and annual grasslands, and open water ditch/channels. The Proposed Project would adversely affect the SMHM and the
California clapper rail due to the permanent removal of 6.88 acres of vegetation and 1.54 acres of open water ditch/channel, as well as the temporary removal of 16.05 acres of vegetation considered by the USFWS to be habitat for these species.\textsuperscript{12}

The Proposed Project would permanently remove 6.88 acres of vegetation and 1.54 acres of open water ditch/channel habitat shared by the SMHM and the CCR, which would be converted to pavement and other areas maintained for Airport uses. Within this area, there are wetlands and aquatic areas containing pickleweed, as well as adjacent upland grassland areas. In the absence of mitigation, the permanent loss of 6.88 acres of this vegetation and 1.54 acres of open water ditch/channel habitat including wetlands and aquatic habitat, would be considered a significant impact. However, mitigation would reduce it to a less than significant level.

An additional 16.05 acres of SMHM and CCR habitat would be temporarily impacted during which construction activities (construction staging, material and equipment storage, and haul routes) would remove the vegetation. Similar to the area where permanent impacts would occur, this area contains wetlands and aquatic areas containing pickleweed, as well as adjacent upland grassland areas. Within this area, it is anticipated that vegetation would be removed and wetland areas would be filled due to the construction activities. Upon completion of the construction and removal of exclusion fencing, the temporarily impacted areas would be allowed to re-vegetate and would again be suitable habitat for the SMHM. Therefore, this temporary impact would be less than significant.

Table 4.5-4 provides a summary of the permanent and temporary impacts for the Proposed Project. Exhibit 4.5-2, Permanent and Temporary Impact Areas, depicts these impact areas.

<table>
<thead>
<tr>
<th>Impact and Habitat Type</th>
<th>Area in acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Impact Area – High Brackish Marsh/Annual Grassland</td>
<td>6.88</td>
</tr>
<tr>
<td>Permanent Impact Area – Open Water Ditch/Channel</td>
<td>1.54</td>
</tr>
<tr>
<td>Temporary Impact Area</td>
<td>16.05</td>
</tr>
<tr>
<td>TOTAL</td>
<td>22.9324.47</td>
</tr>
</tbody>
</table>

Sources: Foothill Associates and Landrum & Brown, 2011

\textsuperscript{12} Permanent impacts consist of areas that will be converted to pavement or other non-vegetated land. Temporary impacts consist of areas where vegetation will be removed during construction but will be re-vegetated throughout seeding and natural processes after construction.
Based on the ESA Section 7 consultation with the USFWS, this EIR considers the upland and wetland habitat being disturbed by the project to be habitat for the SMHM, and the upland, wetland, and open water ditch/channel habitat to be habitat for the CCR, even though some of the upland annual grassland habitat is of limited value to these species. Therefore, when these habitat areas of limited value are temporarily disturbed, and then revegetated, they are still considered threatened and endangered species habitat.

However, as discussed in Section 4.19, Wetlands for purposes of determining wetland impacts to these same areas, the wetland losses are considered to be permanent losses. This difference in impact calculation occurs because it is assumed that the temporary impact areas would be re-vegetated in a way that would continue to provide upland habitat for endangered and threatened species, even though some of these areas that are being converted from high brackish marsh to upland annual grassland would no longer meet the definition of wetland habitat. Therefore, the discussion of wetland impacts in Section 4.19, Wetlands and the acres of wetland impacts shown in Table 4.19-2 do not match the acres of habitat impacts shown in Table 4.5-4 for endangered and threatened species. See Section 4.19, Wetlands for additional discussion about the wetland impacts and potential mitigation.

Construction Impacts

Individual SMHM and CCR may be harassed by noise and vibrations associated with construction activities and the operation of heavy equipment. The most likely effect would be to displace SMHM and CCR as they move farther from these activities to avoid disturbance. The level of harassment of individual SMHM and CCR may vary depending on the type of equipment being used; different pieces of equipment have different noise levels and, thus, cause more or less disturbance. Noise and vibrations may result in displacement of SMHM from protective cover and their territories. These disturbances are likely to disrupt normal behavior patterns of breeding, foraging, sheltering, and dispersal. Displaced SMHM may have to compete for resources with other SMHM if they move to adjacent occupied habitat, and may be more vulnerable to predators. Disturbance to female SMHM from March to November may cause abandonment or failure of the current litter. Thus, displaced SMHM may suffer from increased predation, competition, mortality, and reduced reproductive success during the construction period.

Construction activities could attract predators of the SMHM to the area if trash and food waste are left on the ground. Also SMHM may also become more susceptible to predation due to the temporary loss of cover.

Individual SMHM could be injured or killed during the operation of heavy equipment. SMHM and their young could be injured or killed if motorized equipment is used to remove the marsh vegetation. Although adult SMHM may be able to escape injury if the mice are flushed out of the vegetation prior to removal, less mobile SMHM (e.g., young SMHM before they have been weaned) would not be able to escape injury and may be killed if a nest were crushed by vegetation removal activities conducted during the SMHM’s breeding season (March 1 through November 30).
BACK OF EXHIBIT 4.5-2
Mitigation Measure 4.5-2: The following provides an overview of mitigation for impacts to two Federally threatened and endangered species.

Table 4.5-5 provides acreage of habitat disturbed and the acreage of habitat compensation required by the USFWS Biological Opinion for impacts to SMHM and the CCR habitat resulting from implementation of the Proposed Project. A range of acreage for the off-site habitat compensation is shown in Table 4.5-5 because the USFWS Biological Opinion requires higher habitat compensation for temporary habitat impacts that last 1 to 2 years as compared to temporary habitat impacts that last less than 1 year. These differences in habitat compensation requirements are discussed in detail in the following mitigation measures and Appendix I.

<table>
<thead>
<tr>
<th>Table 4.5-5</th>
<th>ACRES OF SALT MARSH HARVEST MOUSE AND CALIFORNIA CLAPPER RAIL HABITAT DISTURBED AND RESTORED/COMPENSATED</th>
<th>Gnos Field Airport</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Habitat Type</td>
<td>Permanent Impacts’ (acres)</td>
<td>Temporary Impacts’ (acres)</td>
</tr>
<tr>
<td>High Brackish Marsh/Annual Grassland</td>
<td>6.88</td>
<td>16.05</td>
</tr>
<tr>
<td>Open Water Ditch/Channel*</td>
<td>2.31</td>
<td>0.00</td>
</tr>
</tbody>
</table>

- Permanent Impacts = effects to habitat lasting for more than 2 years.
- Temporary Impacts = includes short-term temporary effects (lasting for less than 1 year) and long-term temporary effects (lasting for more than 1 year but less than 2 years).
- The Proposed Project will result in a net loss of 1.54 acres of open water ditch/channel habitat.
- The total amount of off-site restoration depends on how quickly the areas of high brackish marsh/annual grassland habitat are restored on-site. See Appendix I, Table I-2 and Table I-3 for details of calculations.
- The open water ditch/channel habitat is considered habitat for the California clapper rail, but not the salt marsh harvest mouse (USFWS Biological Opinion April 3, 2013).

Mitigation Measure 4.5-2a: Mitigation for Salt Marsh Harvest Mouse Habitat Loss

As previously described in Mitigation Measure 4.5-1 of this section, the Proposed Project requires mitigation for loss of wetlands. The mitigation areas for wetland loss would also qualify as mitigation areas for Salt Marsh Harvest Mouse (SMHM) habitat loss. In addition, habitat mitigation for the SMHM will occur in tandem with habitat mitigation for the California clapper rail (CCR), as they are both associated with high brackish marsh wetland habitat. Mitigation for CCR habitat loss is described under Mitigation Measure 4.5-2c.
Habitat Compensation Measures

The USFWS Biological Opinion requires on-site habitat restoration for short-term temporary impacts and long-term temporary impacts to SHMH habitat. The USFWS Biological Opinion also requires off-site habitat compensation for short-term temporary impacts, long-term temporary impacts, and permanent impacts to SHMH habitat. The Biological Opinion requires that Marin County develop a habitat compensation plan for USFWS approval using all the following compensation ratios:

- 1:1 ratio (replaced:removed) on-site habitat restoration or replacement for short-term temporary SMHM habitat impacts (lasting for less than one year);
- 1.1:1 ratio (replaced:removed) off-site habitat replacement for short-term temporary SMHM habitat impacts (lasting for less than one year);
- 1:1 ratio (replaced:removed) on-site habitat restoration or replacement for long-term temporary SMHM habitat impacts (lasting for more than one year but less than two years);
- 2:1 ratio (replaced:removed) off-site habitat restoration or replacement for long-term temporary SMHM habitat impacts (lasting for more than one year but less than two years); and
- 3:1 ratio (replaced:removed) off-site habitat restoration or replacement for permanent SMHM habitat impacts (lasting for more than two years).  

Based on these ratios, the total amount of off-site endangered species habitat compensation would be between 42.9 acres and 57.3 acres. The exact amount of off-site habitat compensation will depend on what percentage of temporary habitat impacts last one year or less, requiring only 1.1:1 off-site compensatory habitat replacement, as opposed to temporary habitat impacts that last between 1 to 2 years, and require 2:1 off-site compensatory habitat replacement. The habitat compensation will provide breeding, feeding, or sheltering habitat commensurate with or better than the habitat lost as a result of the construction of the Proposed Project. This additional habitat will help maintain the geographic distribution of the species and will contribute to the recovery of the species.

These compensation ratios may be adjusted by the USF&WS based on the quality of the habitat being removed and the quality of the habitat to be created or enhanced to replace it. If after review of a habitat compensation plan, the USF&WS determines that adequate high quality habitat acceptable to the Service can be provided at a lower compensation ratio, the lower compensation ratio shall be deemed adequate mitigation to reduce the impact on the SMHM to less-than-significant.

The following are noted as potential mitigation alternatives for both wetland and SMHM habitat loss.

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13 USFWS, Biological Opinion, April 3, 2013, page 6, Table 1.
SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE

Several San Francisco Bay National Wildlife Refuge (Refuge) projects needing funding are potential mitigation alternatives. Initial contact has been made with Mendel Stewart, Manager of the San Francisco Bay National Refuge and Don Brubaker, North Bay Refuges Manager within the Several San Francisco Bay National Wildlife Refuge. Several projects associated with the restoration of tidal marsh habitat areas were discussed. These projects, in general, are relatively large with multi-million dollar costs. As mitigation for impacts to wetlands, the County may contribute towards a larger effort that would be built in the appropriate timeframe. Impacts to wetlands would be compensated by the contribution of funding or purchase of credits for in-kind habitat creation or restoration. Potential sites for the tidal marsh creation/restoration include:

- The Cullinan Ranch Restoration Project which is a 1,549 acre tidal marsh restoration project near Vallejo. The U.S. Fish and Wildlife Service and the California Department of Fish and Game issued a Final Environmental Impact Statement/Environmental Impact Report in May 2009, and the U.S. Fish and Wildlife Service issued a Record of Decision for this project on April 9, 2010. Construction of the site appears imminent and may begin in time to service the project;

- The Sonoma Creek Enhancement Project, which is a 500 acre project associated with the San Pablo Bay National Wildlife Refuge (NWR). The project would be implemented at the mouth of the Sonoma Creek where it enters the bay on the western bank. The project is being funded jointly by the NWR, Audubon Society, and the localized mosquito abatement district. Engineering and design of the project is complete, but permitting has yet to be completed. Contribution to this project may be a viable alternative; and

- Other alternatives are possible within the San Francisco Refuge complex, but timing and quantification of creation/restoration to complete mitigation are factors that would require continued coordination.

OFFSITE RESTORATION BY PRIVATE ENTITY

A private individual was contacted regarding a parcel of land they indicated they owned that is approximately 7,500 feet from the Airport. The individual indicated interest in developing salt marsh harvest mouse habitat to sell for mitigation credits or develop a project-specific agreement with Marin County for mitigation. There is the potential to fund this project with the purchase of mitigation credits which would be associated with the site. By working with a private individual, it may be easier to negotiate terms and conditions to suit the project mitigation requirements.
OFFSITE RESTORATION BY CONSERVATION GROUP OR PUBLIC ENTITY

The San Francisco Bay Joint Venture (SFBJV) is one of 18 Joint Ventures established under The Migratory Bird Treaty Act and funded under the annual Interior Appropriations Act. It brings together public and private agencies, conservation groups, development interests, and others to restore wetlands and wildlife habitat in San Francisco Bay watersheds and along the Pacific coasts of San Mateo, Marin, and Sonoma counties.

The Sonoma Land Trust’s 2,327-acre Sears Point Wetlands and Watershed Restoration Project is another example of a potential off-site restoration site in which participation by Marin County might be considered allowable mitigation by the U.S. Army Corps of Engineers. The project is located in southern Sonoma County on the edge of San Pablo Bay between the Petaluma River and Tolay Creek. The project includes diked agricultural baylands, alluvial fans, hillslopes reaching elevations of 400 feet above sea level, and numerous small drainages.

The impacts to jurisdictional ditch/canal features identified for the Proposed Project will be ‘replaced in kind’ on site in an amount that would be at a minimum of 2:1. Therefore, permits for these identified impacts may not be necessary as the mitigation is built into the Proposed Project, Thereby reducing wetland impacts to a less-than-significant level.

An Individual Permit under Section 404 of the CWA would be required to construct the Proposed Project. Permitting under Section 10 of the RHA would also be required. As the owner and operator of the Airport, it will be the responsibility of Marin County to apply for all permits as required by all applicable regulatory agencies. The USACOE requires, in general, that if a practicable alternative does not exist that meets the purpose and need of the Proposed Project and avoids or minimizes impacts to wetlands and/or streams, compensatory mitigation in the form of preservation and/or restoration may be required.

As an alternative to the purchase of mitigation credits, or in conjunction with the purchase of mitigation credits, the project sponsor could prepare a specialized wetland mitigation plan in conjunction with its application for an Individual Permit. The wetland mitigation plan will be finalized during the USACOE Section 404 and RHA Section 10 permitting processes. It should be noted that the impacts to jurisdictional ditch/canal features identified for the project will be ‘replaced in kind’ on site in an amount that would be at a minimum of 2:1. Therefore, permits for these identified impacts may not be necessary as the mitigation is built into the project.
Protective Measures

Mitigation Measure 4.5-2b: Protection of Salt Marsh Harvest Mouse During Construction

To minimize effects to the SMHM, areas of disturbance related to the project shall be completely fenced off with SMHM exclusion fencing as necessary. Prior to installation, the USFWS shall review and approve location and design specifications for proposed SMHM exclusion fencing. A USFWS approved biologist shall be on-site to monitor installation of the SMHM exclusion fencing to insure no SMHM are harmed during fence construction. A USFWS-approved biologist shall also be on-site to inspect and approve fence installation methods and the finished installation.

The salt marsh harvest mouse exclusion fencing should be made of a heavy plastic sheeting material that does not allow salt marsh harvest mice to pass through or climb, and the bottom shall be buried to a depth of at least 4 inches so that the listed mouse cannot crawl under the fence. Fence height shall be at least 12 inches higher than the highest adjacent vegetation with a maximum height of 4 feet. All supports for the exclusion fencing shall be placed on the inside of the work area. Marin County shall ensure that the exclusion fencing is inspected and secured before the start of each work day and that no salt marsh harvest mice are able to enter the work area.

When conducting land clearing activities, including grubbing and vegetation removal, it may be necessary to remove vegetation utilizing hand tools or removal with small construction equipment (i.e. Bobcat or similar) acceptable to the CDFG and the USFWS. A USFWS-approved biologist shall be onsite during initial ground disturbance and vegetation removal to monitor for SMHM. Installation of exclusion fencing would occur in progression with land clearing activities. Vegetation clearing would occur from south to north and exclusion fencing would remain open on the northern end of the temporary impact area to provide an “escape route” for SMHM during initial clearing and excavation.

The construction contractor shall use only non-motorized hand tools to remove salt marsh vegetation during the mouse’s breeding season (March 1 through November 30) under the supervision of a USFWS-approved biological monitor. If a salt marsh harvest mouse nest is observed, all work shall cease within 100 feet of the nest until the USFWS-approved biological monitor has determined that the young salt marsh harvest mice have been weaned and left the nest. Vegetation removal occurring outside of the salt marsh harvest mouse’s breeding season (December 1 - February 28) may utilize mechanized or motorized equipment. The USFWS-approved biological monitor shall supervise the vegetation removal, walk ahead of the vegetation removal equipment, and flush any salt marsh harvest mice out of the way.

Upon completion of vegetation removal in the impact area the SMHM exclusion fencing shall be closed to preclude SMHM from potentially re-entering the temporary impact area. Upon completion of vegetation removal/ground clearing
activities and installation of the SMHM exclusion fencing, the construction area would no longer be considered habitat for SMHM and the biological monitor would no longer be required onsite. A USFWS-approved biologist shall be onsite to monitor initial ground clearing activities and to instruct Marin County staff and/or construction contractor in the materials and methods required for proper installation of SMHM exclusion fencing. The USFWS-approved biologist shall train the construction crew on approved avoidance measures and on the life history of SMHM and train Marin County and/or construction contractor staff in appropriate monitoring techniques and methods for SMHM protection so that these individuals can conduct daily monitoring on their own for the duration of the project work. The USFWS approved biologist shall also be available on an “on-call” basis for the duration of the project.

If a SMHM is observed on the project site, work shall stop and the USFWS-permitted or approved biologist shall be notified. If this species vacates the work area on its own volition, then work can proceed. If this species does not vacate the project site, then no work shall be restarted until the USFWS has been notified and additional avoidance measures, if any, are discussed and implemented.

To ensure that all salt marsh and upland refugia habitat temporarily disturbed during construction of the proposed project is replanted or reseeded with appropriate local native plant species. The project sponsor shall install native salt marsh plant species including salt grass, dwarf spikerush, alkali heath, gumplant, and pickleweed as appropriate for the location of the disturbed areas and per a USFWS-approved revegetation and monitoring plan with success criteria. The revegetation monitoring plan shall be submitted to and approved by the USFWS prior to the initiation of construction of the proposed project. The revegetation and monitoring plan shall include photographs and annual reporting documenting the site conditions pre- and post-project. Any areas temporarily disturbed that do not meet the success criteria in the revegetation and monitoring plan within 2 years will be considered a permanent effect and shall be compensated off-site at USFWS-approved location at a 3:1 ratio.

Incidental Take

The USFWS provided the following incidental take statement in the Biological Opinion received on April 3, 2013. The USFWS anticipated incidental take of individual SMHM would be difficult to detect or quantify because of the variable, unknown size of any resident population over time, their elusive and cryptic behavior, and the difficulty of finding killed or injured animals. Due to the difficulty in quantifying the number of SMHM that will be taken as a result of the implementation of the Proposed Project, the USFWS quantified the take of listed species incidental to the Proposed Project as the following:

- The harassment and harm of all SMHM within the 22.93 acres of marginal quality high brackish marsh/annual grassland habitat disturbed during construction of the Proposed Project.
The USFWS determined that this level of anticipated take resulting from the Proposed Project is not likely to jeopardize the continued existence of the SMHM.

**Mitigation Measure 4.5-2c: Mitigation for California Clapper Rail Habitat Loss**

As previously described in Mitigation Measure 4.5-1 of this section, this project requires mitigation for loss of wetlands. The mitigation areas for wetland loss are the same as mitigation areas for California Clapper Rail (CCR) habitat loss. In addition, habitat mitigation for the CCR will occur in tandem with habitat mitigation for the Salt Marsh Harvest Mouse (SMHM) as they are both associated with high brackish marsh wetland habitat. Mitigation for SMHM habitat loss is described under Mitigation Measure 4.5-2a.

**Habitat Compensation Measures**

The USFWS Biological Opinion requires on-site habitat restoration for short-term temporary impacts and long-term temporary impacts to CCR habitat. The USFWS Biological Opinion also requires off-site habitat compensation for short-term temporary impacts, long-term temporary impacts, and permanent impacts to CCR habitat. The Biological Opinion requires that Marin County develop a habitat compensation plan for USFWS approval using all the following compensation ratios:

- **1:1 ratio** (replaced:removed) on-site habitat restoration or replacement for short-term temporary California clapper rail habitat impacts (lasting for less than one year);
- **1.1:1 ratio** (replaced:removed) off-site habitat replacement for short-term temporary California clapper rail habitat impacts (lasting for less than one year);
- **1:1 ratio** (replaced:removed) on-site habitat restoration or replacement for long-term temporary California clapper rail habitat impacts (lasting for more than one year but less than two years);
- **2:1 ratio** (replaced:removed) off-site habitat restoration or replacement for long-term temporary California clapper rail habitat impacts (lasting for more than one year but less than two years); and
- **3:1 ratio** (replaced:removed) off-site habitat restoration or replacement for permanent California clapper rail habitat impacts (lasting for more than two years).\(^{14}\)

Based on these ratios, the total amount of off-site habitat compensation will be between 42.9 acres and 57.3\(^{15}\) acres for the Proposed Project. The exact amount of off-site habitat compensation will depend on what percentage of temporary habitat impacts last one year or less, requiring only 1.1:1 off-site compensatory habitat replacement, as opposed to temporary habitat impacts that last between one to two years, which require 2:1 off-site compensatory habitat replacement. The habitat

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\(^{14}\) USFWS, *Biological Opinion*, April 3, 2013, page 6, Table 1.

\(^{15}\) See Table I-2 and I-3, in Appendix I for calculations of these acreage values.
compensation will provide breeding, feeding, or sheltering habitat commensurate with or better than the habitat lost as a result of the effects from the construction of the Sponsor’s Proposed Project. This additional habitat will help maintain the geographic distribution of the species and will contribute to the recovery of the species.

These compensation ratios may be adjusted by the USF&WS based on the quality of the habitat being removed and the quality of the habitat to be created or enhanced to replace it. If after review of a habitat compensation plan, the USF&WS determines that adequate high quality habitat acceptable to the Service can be provided at a lower compensation ratio, the lower compensation ratio shall be deemed adequate mitigation to reduce the impact on the CCR to less-than-significant.

The following are noted as potential mitigation alternatives for both wetland and CCR habitat loss.

SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE

Several San Francisco Bay National Wildlife Refuge (Refuge) projects needing funding are potential mitigation alternatives. Initial contact has been made with Mendel Stewart, Manager of the San Francisco Bay National Refuge and Don Brubaker, North Bay Refuges Manager within the Several San Francisco Bay National Wildlife Refuge. Several projects associated with the restoration of tidal marsh habitat areas were discussed. These projects, in general, are relatively large with multi-million dollar costs. As mitigation for impacts to wetlands, the County may contribute towards a larger effort that would be built in the appropriate timeframe. Impacts to wetlands would be compensated by the contribution of funding or purchase of credits for in-kind habitat creation or restoration. Potential sites for the tidal marsh creation/restoration include:

- The Cullinan Ranch Restoration Project which is a 1,549 acre tidal marsh restoration project near Vallejo. The U.S. Fish and Wildlife Service and the California Department of Fish and Game issued a Final Environmental Impact Statement/Environmental Impact Report in May 2009, and the U.S. Fish and Wildlife Service issued a Record of Decision for this project on April 9, 2010. Construction of the site appears imminent and may begin in time to service the project;

- The Sonoma Creek Enhancement Project, which is a 500 acre project associated with the San Pablo Bay National Wildlife Refuge (NWR). The project would be implemented at the mouth of the Sonoma Creek where it enters the bay on the western bank. The project is being funded jointly by the NWR, Audubon Society, and the localized mosquito abatement district. Engineering and design of the project is complete, but permitting has yet to be completed. Contribution to this project may be a viable alternative; and

- Other alternatives are possible within the San Francisco Refuge complex, but timing and quantification of creation/restoration to complete mitigation are factors that would require continued coordination.
OFFSITE RESTORATION BY PRIVATE ENTITY

A private individual was contacted regarding a parcel of land they indicated they owned that is approximately 7,500 feet from the Airport. The individual indicated interest in developing salt marsh harvest mouse habitat to sell for mitigation credits or develop a project-specific agreement with Marin County for mitigation. There is the potential to fund this project with the purchase of mitigation credits which would be associated with the site. By working with a private individual, it may be easier to negotiate terms and conditions to suit the project mitigation requirements.

OFFSITE RESTORATION BY CONSERVATION GROUP OR PUBLIC ENTITY

The San Francisco Bay Joint Venture (SFBJV) is one of 18 Joint Ventures established under The Migratory Bird Treaty Act and funded under the annual Interior Appropriations Act. It brings together public and private agencies, conservation groups, development interests, and others to restore wetlands and wildlife habitat in San Francisco Bay watersheds and along the Pacific coasts of San Mateo, Marin, and Sonoma counties.

The Sonoma Land Trust’s 2,327-acre Sears Point Wetlands and Watershed Restoration Project is another example of a potential off-site restoration site in which participation by Marin County might be considered allowable mitigation by the U.S. Army Corps of Engineers. The project is located in southern Sonoma County on the edge of San Pablo Bay between the Petaluma River and Tolay Creek. The project includes diked agricultural baylands, alluvial fans, hillslopes reaching elevations of 400 feet above sea level, and numerous small drainages.

The impacts to jurisdictional ditch/canal features identified for the Proposed Project will be ‘replaced in kind’ on site in an amount that would be at a minimum of 2:1. Therefore, permits for these identified impacts may not be necessary as the mitigation is built into the Proposed Project, Thereby reducing wetland impacts to a less-than-significant level.

An Individual Permit under Section 404 of the CWA would be required to construct the Proposed Project. Permitting under Section 10 of the RHA would also be required. As the owner and operator of the Airport, it will be the responsibility of Marin County to apply for all permits as required by all applicable regulatory agencies. The USACE requires, in general, that if a practicable alternative does not exist that meets the purpose and need of the Proposed Project and avoids or minimizes impacts to wetlands and/or streams, compensatory mitigation in the form of preservation and/or restoration may be required.

As an alternative to the purchase of mitigation credits, or in conjunction with the purchase of mitigation credits, the project sponsor could prepare a specialized wetland mitigation plan in conjunction with its application for an Individual Permit. The wetland mitigation plan will be finalized during the USACE Section 404 and RHA Section 10 permitting processes. It should be noted that the impacts to jurisdictional ditch/canal features identified for the project will be ‘replaced in kind’
on site in an amount that would be at a minimum of 2:1. Therefore, permits for these identified impacts may not be necessary as the mitigation is built into the project.

**Mitigation Measure 4.5-2d: Protection of California Clapper Rail During Construction**

*Protective Measures*

To avoid potential impacts to the species, initial excavation and grading associated with the project shall be scheduled during annual summer and fall dry periods when standing water and seasonally available foraging areas are not present. Once that work is complete the runway extension area would no longer be suitable habitat for California clapper rail and no further seasonal restriction for California clapper rail would be required. Following rainfall events, consolidated precipitation is pumped off the site and into the Petaluma River (which happens during the winter and spring of every year). Due to the absence of suitable foraging habitat during the summer and fall dry period, the rail would not occur within the Airport expansion area during that period, and would not be negatively affected by summer/fall (dry period) construction.

*Incidental Take*

The USFWS provided the following incidental take statement in the Biological Opinion received on April 3, 2013. The USFWS anticipated incidental take of individual CCRs will be difficult to detect or quantify because of the variable, unknown size of any resident population over time, their elusive and cryptic behavior, and the difficulty of finding killed or injured animals. Due to the difficulty in quantifying the number of CCRs that will be taken as a result of the implementation of the Proposed Project, the USFWS is quantifying take incidental to the Proposed Project as the following:

- The harassment of all California clapper rails within the 25.24 acres of non-breeding high brackish marsh/annual grassland and open water ditch/channel habitats disturbed during construction of the Proposed Project.

The USFWS determined that the level of anticipated take resulting from the Proposed Project is not likely to jeopardize the continued existence of the CCR.

*Significance After Mitigation –* Implementation of Mitigation Measures 4.5-2a, 4.5-2b, 4.5-2c, and 4.5-2d would reduce impacts to the two affected Federal Threatened and Endangered Species to a less-than-significant level.

*Responsibility and Monitoring –* The Marin County Department of Public Works shall be responsible for ensuring that all design and construction documents and specifications contain all elements of Mitigation Measures 4.5-2a through 4.5-2d, and that they are adhered to during construction. The Marin County Department of Public Works shall also be responsible for the Mitigation Monitoring and Reporting Plan which will incorporate the provisions of Mitigation Measures 4.5-2a and 4.5-2b.
Impact 4.5-3: The Proposed Project could potentially impact California Special Status Species (potentially significant).

The Detailed Study Area (DSA) consists of the existing airport, annual grassland, and high brackish marsh. Known or potential biological constraints on the DSA include the following:

- Potential nesting habitat and foraging habitat for raptors, including western burrowing owl; and

- Sensitive habitats including jurisdictional waters of the United States (depressional seasonal wetland, riverine seasonal wetland, slope seep, high brackish marsh, perennial drainage, and ditches). Wetland impacts are discussed under Impact 4.5-1.

Burrowing owls were observed during the biological assessment on the levees surrounding the runway. Potential impacts would be associated with loss of burrows and/or foraging habitat. However, the area surrounding the Airport and the DSA includes habitat similar to the habitat that would be removed due to the Proposed Project. Proven methods for relocating western burrowing owls exist that minimize long-term impacts to individual and communities of owls.

Several other species of raptors forage and may nest on or immediately adjacent to the DSA. A northern harrier, an American kestrel, a red-tailed hawk, and a white-tailed kite were observed foraging within the DSA during site surveys. There are some suitable nesting sites within the airfield and in scattered locations of the DSA. Active raptor nests are protected by the California Fish and Game code Section 3503.5 and the MBTA.

Therefore project construction could potentially impact raptor and western burrowing owl nests. The impact on nests during the nesting season would be significantly adverse. Construction impacts at locations where there is not an active nest or foraging habitat is deemed less-than-significant due to the abundance of suitable habitat for nesting and foraging in the surrounding area. Likewise airport operations do not at present, and will not in the future, cause significant disturbance to nesting owls and raptors. This is evident from the biological survey that found active burrowing owl nests on the levee near the existing airport runway. Therefore, long term airport operations will have a less-than-significant impact on future nesting and foraging in the surrounding area.

**Mitigation Measure 4.5-3:** The County will follow the guidelines of CDFG Staff Report on Burrowing Owl Mitigation dated March 7, 2012. The County will conduct protocol level breeding season surveys a season before any projected construction related activities occur. This protocol survey will be used to establish baseline site data for mitigation and areas for pre-construction surveys.

In order to determine the presence and location(s) of active burrows prior to construction, a pre-construction clearance survey shall be conducted no more than 30 days prior to the onset of construction. The time lapse between surveys and site disturbance shall be as short as possible and generally shall not exceed 7 days.
Additional surveys shall be performed when the initial disturbance is followed by periods of inactivity of the development is phased spatially and/or temporally over the project areas for more than a week. Burrowing owls can be present during all times of the year in California, so this survey shall be completed even if the initiation of construction is outside of the typical February 1 to August 31 migratory bird breeding season.

The initial pre-construction surveys shall be conducted outside the owl breeding season (from February 1 to August 31) but as close as possible to the date that ground-disturbing activities will begin, to avoid the problem of waiting until March or April when the project would be delayed if owls are detected. If burrowing owls are identified during initial pre-construction surveys, mitigate for permanent impacts to nesting, occupied and satellite burrows and burrowing owls habitat such that the habit acres, number of burrows and burrowing owls impacted are replaced.

Compensatory habitat will be selected by the County to 1) provide similar vegetation communities that provide for burrowing owl nesting, foraging, wintering, and dispersal for both breeding and non-breeding seasons comparable to or better than those of the impact area, 2) provide habitat on the Airport property first before considering other County locations, and 3) provide area where land use activities incompatible with burrowing owl are prohibited. Additionally the County will monitor the compensatory habitat for up to five years and make improvements in that time as necessary to address long-term ecological sustainability and maintenance of the site for burrowing owls. Marin County shall abide by CDFG’s recommendation that 6.5 acres of foraging habitat for burrowing owl to be preserved for each active burrow that would be impacted by project activities. The mitigation area shall be defined in consultation with CDFG. In order to determine the presence and location(s) of active burrows prior to construction, a pre-construction clearance survey shall be conducted no more than 30 days prior to the onset of construction. Burrowing owls can be present during all times of the year in California, so this survey shall be completed even if the initiation of construction is outside of the typical February 1 to August 31 migratory bird breeding season.

If active owl burrows are located during the pre-construction survey, a 250-foot buffer zone, or as determined appropriate by a qualified biologist in consultation with the CDFG, shall be established around each burrow with an active nest until the young have fledged and are able to exit the burrow. Any occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist verifies through non-invasive methods that either: a) the birds have not begun egg laying and incubation; or b) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. In the case of occupied burrows without active nesting, active burrows after the young have fledged, or if development commences after the breeding season (typically February 1 to August 31), passive relocation of the birds should be performed. Passive relocation involves installing a one-way door at the burrow entrance, which encourages the owls to move from the occupied
burrow. The County will not close a burrow when it can be avoided. CDFG shall be consulted for current guidelines and methods for passive relocation of any owls found on the site prior to any proposed burrow closure.

**Significance After Mitigation** – Implementation of the recommended mitigation measures will reduce the impact on nesting raptors to a less-than-significant level.

**Responsibility and Monitoring** – The Marin County Department of Public Works, in coordination with CDFG, shall be responsible for the Mitigation Monitoring and Reporting Plan which will incorporate the provisions of Mitigation Measure 4.5-3

**Impact 4.5-4: The Proposed Project could potentially impact Special Status Species protected under the Migratory Bird Treaty Act (MBTA) (potentially significant).**

The shrubs and grasslands in the DSA provide suitable nesting habitat for a number of common and special-status birds. Migratory birds likely use the Airport vicinity during the migration periods as they have a tendency to disperse widely among urban habitat for breeding and migration. Implementation of the Proposed Project would not eliminate migration corridors or reduce the amount of suitable habitat in the region for use by migrating birds. Since similar habitats to that which will be eliminated are common in the Airport vicinity. However, there is a potential significant impact on nesting birds.

**Mitigation Measure 4.5-4:** In order to minimize potential impacts to nesting birds’ vegetation, including the White-tailed Kite, removal shall be scheduled to the greatest extent possible, during non-nesting seasons (September 1 – January 31). If vegetation removal has to occur during the typical nesting season (February 1 - August 31), special precautions for identifying species and nests should be taken. A wildlife specialist shall conduct a preconstruction survey for nesting birds if vegetation removal is scheduled close to the nesting season. A focused survey for active bird nests shall be conducted by a qualified biologist within 15 days prior to vegetation clearing. If an area identified for clearance has not been surveyed within the past 15 days, then a new survey shall be conducted. If nests are observed, the qualified biologist/wildlife specialists shall determine appropriate buffer distances in consultation with CDFG, provide recommendation as to how the nests can be relocated without harm to the birds. If nests cannot be avoided/relocated, construction activity shall be prohibited in the vicinity of the nest until the fledglings are gone and there are no attempts to re-nest.

**Significance After Mitigation** – Implementation of the recommended mitigation measures will reduce the impact on nesting raptors to a less-than-significant level.

**Responsibility and Monitoring** – The Marin County Department of Public Works shall be responsible for the Mitigation Monitoring and Reporting Plan which will incorporate the provisions of Mitigation Measure 4.5-4.
4.5.3 CUMULATIVE IMPACTS OF THE PROPOSED PROJECT

Wetland impacts are cumulative in that wetlands are a limited natural resource in the San Francisco Bay Area. The Marin Countywide Plan encourages in kind mitigation for filled wetlands at a ratio of 2:1, off-site not in kind mitigation for wetland lost is to be replaced at a 3:1 ratio. Likewise the US Army Corps of Engineers requires preparation and implementation of a wetland mitigation plan in the Corps permit process. Compliance with the wetland mitigation requirements of Marin County and US Army Corps of Engineers will ensure that the cumulative impacts on wetlands from the project is less-than-significant.

With implementation of proper mitigation procedures, the disturbance of annual grassland habitat would not cause a significant impact to any special status species. As discussed in this chapter, the Proposed Project would remove approximately 22.86 acres of plant and wildlife habitat, which includes 0.15 acres of depressional seasonal wetlands, 10.29 acres of high brackish marsh, 0.59 acres of perennial drainage, 1.57 acres of ditch/canal, and 10.26 acres of annual grasslands. The loss of 10.26 acres of annual grassland habitat is not significant as this habitat is the most common habitat in the area and is common both locally and regionally. The losses of aquatic habitat is considered significant, but would be mitigated to a less-than-significant level. A suitable mitigation bank or mitigation area would be determined through formal Endangered Species Act (ESA) Section 7 consultation with the USFWS. During formal ESA Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS), mitigation ratios and location of the mitigation effort would be determined.

Coordination with the USACOE and local wetland banks is on-going. Marin County would be responsible for developing a mitigation plan acceptable to the USACOE. Conceptual options include:

- San Francisco Bay National Wildlife Refuge
- Offsite Restoration by Private Entity
- Offsite Restoration by Conservation Group or Public Entity

The following projects have the potential to cause cumulative impacts to the same biological resources as the Proposed Project due to their geographic proximity.

- Sonoma Marin Area Rail Transit Project – this project would result in the permanent loss of approximately 31.7 acres of wetland habitat and temporary disturbance of upland habitat. A portion of this acreage is within the GSA for the Sponsors’ Proposed Project and its alternatives. Temporary impacts to upland habitat would be minimized to the extent possible and permanent loss of wetlands would be mitigated through wetland replacement at a minimum ratio of 1:1. This project also has the potential to disturb nesting birds. Impacts to nesting birds would be mitigated through surveying, limiting construction activity to periods when birds are not present, and adherence to appropriate buffers around nesting locations.  

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• Marin Sonoma Narrows HOV Widening Project – right-of-way acquisition for this project would cause the loss of up to 7.3 acres of wetlands, depending upon the access option that is selected. A portion of these wetlands are located within the GSA for this project. Impacts to wetlands would be mitigated through wetland replacement at ratios to be determined by the U.S. Army Corps of Engineers. The project also has the potential to disturb nesting birds. Impacts to nesting birds would be avoided by conducting surveys and removing nesting locations prior to construction.  

• Redwood Landfill Solid Waste Facility – construction and implementation of this project has the potential to disturb the western burrowing owl and other bird species. This impact is not considered significant due to the abundance of habitat for these species located to the west of the landfill.

Because the impacts from these other projects are expected to be mitigated to below significant levels through wetland and habitat replacement, as well as monitoring and avoidance of species, cumulative impacts would be less-than-significant after mitigation implementation.

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