5.10 WETLANDS AND STREAMS

This section provides detailed descriptions of wetlands and other aquatic resources impacted by the runway extension alternatives. A Geographic Information System program was used to calculate impacts to wetlands and other waters, based on the areas of disturbance, for each alternative.

5.10.1 SIGNIFICANCE CRITERIA

Federal Aviation Administration (FAA) Order 1050.1F, *Environmental Impacts: Policies and Procedures*, states impacts to wetlands would be considered significant when an action would:

- Adversely affect a wetland’s function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;
- Substantially alter the hydrology needed to sustain the affected wetland system’s values and functions or those of a wetland to which it is connected;
- Substantially reduce the affected wetland’s ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);
- Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
- Promote development of secondary activities or services that would cause the circumstances listed above to occur; or
- Be inconsistent with applicable state wetland strategies.

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, states impacts to surface waters would be considered significant when an action would:

- Exceed water quality standards established by Federal, state, local and tribal regulatory agencies; or
- Contaminate public drinking water supply such that public health may be adversely affected.

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, states additional factors to consider when determining an action would have a significant impact on water quality include whether the action would have the potential to:

- Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values;
- Adversely affects surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or
• Present difficulties based on water quality impacts when obtaining a permit or authorization.

5.10.1.1 Wetland and Stream Regulations and Policies

The Clean Water Act (CWA), Section 404 requires that applicants obtain a permit from the U.S. Army Corps of Engineers (USACOE) to place dredged or fill material into aquatic sites within CWA jurisdiction including wetlands, streams, and open waters. The CWA Section 404 (b) (1) Guidelines (Title 40 Code of Federal Regulations (CFR) Part 230, Subparts B-F) requires a sequencing process to first avoid, then minimize, and finally provide compensatory mitigation for impacts to aquatic resources during the CWA Section 404 permit process. The CWA Section 404 (b) (1) Guidelines also limits the USACOE to permitting the least environmentally damaging practicable alternative to accomplish the project purpose.

In addition to the CWA and Rivers and Harbors Act (RHA), the Federal Aviation Administration (FAA) must also follow Executive Order (EO) 11990 Protection of Wetlands and Department of Transportation (DOT) Order 5660.1A Preservation of the Nation’s Wetlands, which require that Federal assistance to construct an activity in a wetland can only be provided when (1) there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. In making findings under EO 11990 and DOT Order 5660.1A, the FAA may take into account economic, environmental and other pertinent factors.

Marin County and the FAA met with the USACOE, the U.S. Environmental Protection Agency (USEPA), the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), and the Marin County Flood Control District on May 14, 2008 for a CWA Section 404 permit pre-application meeting regarding the Gnoss Field Runway Extension Project. Marin County and the FAA described the project and the FAA Environmental Impact Statement (EIS) process and the USACOE described overall CWA Section 404 permitting requirements.

This section evaluates the potential impacts to wetlands and other aquatic resources of the Alternatives. Also, as required by the CWA, EO 11990, and DOT Order 5660.1A, this section identifies the least environmentally damaging practicable alternative that meets the project purpose of allowing the family grouping of critical aircraft at DVO to operate without operational weight restrictions under hot weather conditions (see Appendix D-1, Runway Length Analysis for details). This section identifies options for compensatory mitigation for impacts to wetlands and waters within CWA jurisdiction necessary to meet the mitigation requirements of the CWA and the National Environmental Policy Act (NEPA). Although portions of the Detailed Study Area (DSA) are also within RHA, Section 10, jurisdiction it is anticipated that meeting CWA Section 404 permit requirements will also address any RHA Section 10 permit compensatory mitigation requirements. The USACOE is a cooperating NEPA agency for this SEIS. It is anticipated that Marin County would submit a CWA, Section 404 permit application to the USACOE for evaluation during project design.
FEDERAL JURISDICTION OF THE WATERS OF THE UNITED STATES

The USACOE regulates discharge of dredged or fill material into waters of the United States under Section 404 of the CWA. “Discharges of fill material” are defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [Title 33 CFR § 328.2(f)]. In addition, Section 401 of the CWA (Title 33 USC § 1341) requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge would comply with the applicable effluent limitations and water quality standards.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present.

5.10.2 METHODOLOGY

A review of historic and recent aerial photographs, topographic maps, and soils survey data was conducted before a wetland delineation occurred in March and April 2008. Biologists visually inspected the entire site and collected data at points within wetland areas consistent with germane court decisions. Observations were recorded on Wetland Determination Data Forms for the Arid West Region. Correlations were developed between the three parameters (vegetation, hydrology, and soils) to make wetland determinations in accordance with the USACOE wetland delineation manual (USACOE Waterways Experiment Station, Environmental Laboratory, 1987) and appropriate regional supplements to the manual. The determination of other waters of the U.S. was identified based on the potential presence or absence of an ordinary high water mark as defined in Title 33 CFR § 328.3(e).

5.10.3 WETLAND AND SURFACE WATER CONDITIONS

WETLANDS

The USACOE issued a CWA and RHA jurisdictional determination for Gnoss Field in August 2009. A copy of the jurisdictional wetland determination letter and map from the USACOE was included in Appendix J, Wetlands of the June 2014 Final EIS. The USACOE determined all wetlands on the Airport are within CWA jurisdiction and a portion of the wetlands on the Airport are also within RHA jurisdiction. After the jurisdictional determination was made in August 2009, Marin County experienced a drought event that spanned 2012 through 2016 which may have resulted in a degradation of the wetlands present on the Airport. However, this Final SEIS uses

the wetland delineation approved in August 2009 to estimate potential impacts to
wetlands in order to maintain consistency with the Final EIS and to account for the
maximum potential impacts to wetlands as a result of the Sponsor’s Proposed Project,
Alternative B. Furthermore, Marin County will re-verify the CWA jurisdictional
determination during project design and CWA permit processing. Jurisdictional
wetlands located within the DSA are shown in Chapter Four, Affected Environment
on Exhibit 4-10, Jurisdictional Wetlands and Waters of the U.S.

Wetland communities at DVO include depressional seasonal wetlands, riverine
seasonal wetlands, slope seep wetlands, high brackish marsh wetlands, perennial
drainage and ditches/canals totaling 74.70 acres. Approximately 78.9 percent
(58.96 acres) of the delineated wetlands are high brackish marsh wetlands,
approximately 4.8 percent (3.59 acres) are depressional seasonal wetlands, and
approximately 0.7 percent (0.52 acres) are riverine seasonal wetlands.

Additionally, approximately 4.0 percent (2.95 acres) of the delineated wetlands are
seep, approximately 3.3 percent (2.49 acres) are perennial drainage, and
approximately 8.3 percent (6.20 acres) are ditches. Table 5.10-1 provides a
summary of the existing wetlands located at DVO.

Table 5.10-1
SUMMARY OF WETLANDS AND OTHER WATERS
Gnoss Field Airport

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>SECTION 404 ONLY WATERS1</th>
<th>SECTION 404 AND SECTION 10 WATERS2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressional Seasonal Wetland</td>
<td>3.59</td>
<td>0.00</td>
<td>3.59</td>
</tr>
<tr>
<td>Riverine Seasonal Wetland</td>
<td>0.52</td>
<td>0.00</td>
<td>0.52</td>
</tr>
<tr>
<td>Slope Seep Wetland</td>
<td>1.89</td>
<td>1.06</td>
<td>2.95</td>
</tr>
<tr>
<td>High Brackish Marsh Wetland</td>
<td>51.56</td>
<td>7.40</td>
<td>58.96</td>
</tr>
<tr>
<td>Perennial Drainage</td>
<td>1.81</td>
<td>0.67</td>
<td>2.48</td>
</tr>
<tr>
<td>Ditch/Canal</td>
<td>5.82</td>
<td>0.38</td>
<td>6.20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>65.20</strong></td>
<td><strong>9.51</strong></td>
<td><strong>74.70</strong></td>
</tr>
</tbody>
</table>

1 Section 404 of the CWA
2 Section 10 of the RHA – all wetlands within RHA jurisdiction are also within CWA jurisdiction.

Source: Delineation of Wetlands and Request for CWA and RHA Jurisdictional Determination for Gnoss Field Airport Marin County, California, Prepared by Foothill Associates, July 2009. See Appendix J.

5.10.4 FUTURE CONDITIONS: 2024

The following discusses the potential impacts to wetlands that would result from implementing the Sponsor’s Proposed Project or its alternatives. The FAA conducted an evaluation of alternatives in accordance with the CWA, Section 404 (b)(1) guidelines as part of the alternatives analysis in Chapter Three, *Alternatives*, of this Final SEIS. The findings of that evaluation are summarized at the end of this section.

**Alternative A:**

*No Action*

Alternative A (No Action) would not result in the loss or conversion of any wetlands, open waters, or streams. No new construction would occur under this alternative. Existing conditions of wetlands and streams would be expected to continue.

**Alternative B:**

*Extend Runway to the Northwest by 1,100 Feet (Sponsor’s Proposed Project)*

This alternative includes the proposed 1,100-foot extension of Runway 13/31 at the existing runway width of 75 feet, an equivalent extension of the parallel taxiway, an extension of the existing FAA standard 120-foot wide Runway Safety Area (RSA) centered on the runway centerline to match the length of the runway, construction of FAA standard 240-foot RSA extending beyond each end of Runway 13/31, a corresponding increase in the Airport’s existing perimeter levees to surround the new runway extension, and a corresponding increase in the length of the Airport’s existing drainage ditches adjacent to the runway to convey stormwater away from the runways.

As a result of the fill material and the construction staging activities, all of the wetlands within the area of disturbance would be impacted through filling (See Exhibit 5.10-1, *Alternative B Area of Disturbance Jurisdictional Wetlands and Waters of the U.S.*). The area of disturbance for Alternative B (Sponsor’s Proposed Project) is approximately 22.93 acres (22.56 acres at the north end of Runway 13 and 0.37 acres at the south end of Runway 13). The construction of Alternative B 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 this alternative, 1,004 feet of ditch/canal would be removed; however, there would be 3,182 feet of ditch/canal created to extend the drainage ditches around the runway and RSA on the north side of the Airport. Therefore, this alternative would result in an overall increase in length of 2,178 feet of the 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. 1.57 acres of ditch/canal would be removed as a result of this alternative, but 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 alternative would result in an overall decrease in area of 0.80 acres of ditch/canal features.

In total, Alternative B 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 5.10-2.

Implementation of Alternative B would result in significant impacts to wetlands and aquatic resources because it would adversely affect the maintenance of natural systems supporting wildlife – as discussed in more detail in Section 5.9 - unless compensatory mitigation is provided. As described in Section 5.10.6, several options for compensatory mitigation for wetland and aquatic habitat losses associated with the implementation of Alternative B are available. A detailed compensatory mitigation plan would be required to obtain the necessary authorizations to construct Alternative B. With implementation of a mitigation plan to compensate for the losses of wetland and aquatic habitat resulting from the construction of Alternative B, the environmental impact of Alternative B would not be significant.

**Alternative D:**

**Extend Runway to the Southeast by 240 Feet and to the Northwest by 860 Feet**

This alternative includes a 1,100-foot extension of Runway 13/31 (240 feet to the southeast and 860 feet to the northwest) for a total runway length of 4,400 feet at the existing runway width of 75 feet. Alternative D includes the construction and extensions of the parallel taxiways adjacent to the runway extensions to the full length of the extended runway and an extension of the existing FAA standard 120-foot wide RSA centered on the runway centerline to match the length of the runway. This alternative also proposes the construction of a 240-foot RSA extending beyond the end of both runway ends and an expansion of the length of the levee and drainage ditch system.
NOTE: Existing airfield layout shown so that wetland impacts can be more easily identified.

Alternative B Area of Disturbance
Jurisdictional Wetlands and Waters of the U.S.
As a result of the fill material and the construction staging activities, all of the wetlands within the area of disturbance would be impacted through filling (See Exhibit 5.10-2, Alternative D Area of Disturbance Jurisdictional Wetlands and Waters of the U.S.). For the purposes of this analysis, the area of disturbance was estimated for Alternative D to be a total of 26.67 acres (19.82 acres north of the existing runway and 6.85 acres south of the existing runway).

The use of fill material during construction and implementation of Alternative D would result in the following impacts to wetlands within the area of disturbance:

- Fill 11.11 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 this alternative, 1,004 feet of ditch/canal would be removed; however, there would be 2,685 feet of ditch/canal created to extend the drainage ditches around the runway and RSA on the north side of the Airport. Therefore, this alternative would result in an overall increase in length of 1,681 feet of the 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. 1.57 acres of ditch/canal would be removed as a result of this alternative, but 0.69 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 alternative would result in an overall decrease in area of 0.88 acres of ditch/canal features.

In total, Alternative D would impact approximately 12.73 acres of wetlands protected by Section 404 of the CWA, of which 2.56 acres are also regulated under Section 10 of the RHA. A summary of the wetland impacts is provided in Table 5.10-2.

Implementation of Alternative D would result in significant impacts to wetlands and aquatic resources because it would adversely affect the maintenance of natural systems supporting wildlife – as discussed in more detail in Section 5.9 - unless compensatory mitigation is provided. As described in Section 5.10.6, several options for compensatory mitigation for wetland and aquatic habitat losses associated with the implementation of Alternative D are available. A detailed compensatory mitigation plan would be required to obtain the necessary authorizations to construct Alternative D. With implementation of a mitigation plan to compensate for the losses of wetland and aquatic habitat resulting from the construction of Alternative D, the environmental impact of Alternative D would not be significant.
Alternative E: Extend Runway to the Northwest by 300 Feet

Alternative E includes a shift of Runway 13/31 106 feet to the north and extension of Runway 13/31 300 feet to the northwest from 3,300 feet to a total length of 3,600 feet at the existing runway width of 75 feet. In addition, this alternative would include the relocation of existing taxiways to new runway end, an extension of the parallel taxiway to match the full length of the runway, widening of the existing FAA standard 120-foot wide RSA centered on the runway centerline to match the width of 150 feet centered on the runway centerline, inclusion of FAA standard 300-foot RSA at each end of the runway in addition to the 300-foot runway extension, a corresponding realignment of drainage channels to drain the extended runway, taxiway and RSA, and a corresponding increase in the length of the Airport’s existing drainage ditches adjacent to the runway to convey stormwater away from the runway.

As a result of the fill material and the construction staging activities, all of the wetlands within the area of disturbance would be impacted through filling (See Exhibit 5.10-3, Alternative E Area of Disturbance Jurisdictional Wetlands and Waters of the U.S.). The area of disturbance for Alternative E is approximately 18.34 acres (15.32 acres on at the north end of Runway 13 and 3.02 acres at the south end of Runway 13). The construction of Alternative E would result in the following impacts on wetlands and aquatic resources within the area of disturbance:

- Fill 5.49 acres of High Brackish Marsh wetland
- Fill 0.59 acres of perennial drainage
- Fill 1.60 acres of ditches/canals
- Fill 0.17 acres of depressional seasonal wetland

As part of this alternative, 1,128 feet of ditch/canal would be removed; however, there would be 1,995 feet of ditch/canal created to extend the drainage ditches around the runway and RSA on the north side of the Airport. Therefore, this alternative would result in an overall increase in length of 867 feet of the 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. 1.60 acres of ditch/canal would be removed as a result of this alternative, but 0.58 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 as well as to replace the existing channel underneath the new taxiway on the south side of the Airport. Therefore, this alternative would result in an overall decrease in area of 1.02 acres of ditch/canal features.
NOTE: Existing airfield layout shown so that wetland impacts can be more easily identified.
NOTE: Existing airfield layout shown so that wetland impacts can be more easily identified.
In total, Alternative E would impact approximately 7.27 acres of wetlands regulated under Section 404 of the CWA, of which 1.11 acres are also regulated under Section 10 of the RHA. A summary of the wetland impacts is provided in Table 5.10-2.

Implementation of Alternative E would result in significant impacts to wetlands and aquatic resources because it would adversely affect the maintenance of natural systems supporting wildlife – as discussed in more detail in Section 5.9 - unless compensatory mitigation is provided. As described in Section 5.10.6 several options for compensatory mitigation for wetland and aquatic habitat losses associated with the implementation of Alternative E are available. A detailed compensatory mitigation plan would be required to obtain the necessary authorizations to construct Alternative E. With implementation of a mitigation plan to compensate for the losses of wetland and aquatic habitat resulting from the construction of Alternative E, the environmental impact of Alternative E would not be significant.
### Table 5.10-2
**ACREAGE OF WETLANDS AND OTHER WATERS FILLED BY ALTERNATIVE**
Gnoss Field Airport

<table>
<thead>
<tr>
<th>WETLAND TYPE</th>
<th>ALTERNATIVE A</th>
<th>ALTERNATIVE B</th>
<th>ALTERNATIVE D</th>
<th>ALTERNATIVE E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressional Seasonal</td>
<td>0.00</td>
<td>0.15</td>
<td>0.15</td>
<td>0.17</td>
</tr>
<tr>
<td>Riverine Seasonal</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Slope Seep</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>High Brackish Marsh</td>
<td>0.00</td>
<td>10.29</td>
<td>11.11</td>
<td>5.49</td>
</tr>
<tr>
<td>Perennial Drainage</td>
<td>0.00</td>
<td>0.59</td>
<td>0.59</td>
<td>0.59</td>
</tr>
<tr>
<td>Ditch/Canal*</td>
<td>0.00</td>
<td>1.57 removed</td>
<td>1.57 removed</td>
<td>1.60 removed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.77 created</td>
<td>0.69 created</td>
<td>0.58 created</td>
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<tr>
<td></td>
<td></td>
<td>0.80 net impact</td>
<td>0.88 net impact</td>
<td>1.02 net impact</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>0.00</strong></td>
<td><strong>11.83</strong></td>
<td><strong>12.73</strong></td>
<td><strong>7.27</strong></td>
</tr>
</tbody>
</table>

* Alternatives B, D, and E propose to extend and maintain the ditch/canal system around the new runway and taxiway, offsetting a portion of the area filled. It is expected that potential impacts to the ditch/canal in Alternatives B, D, and E would be temporary during construction.

5.10.5 COMPLIANCE WITH CLEAN WATER ACT, RIVERS AND HARBORS ACT PERMIT REQUIREMENTS, AND FEDERAL WETLAND POLICIES

Construction of Alternative B, D, or E would require that Marin County obtain a USACOE CWA Section 404 permit to authorize the filling of wetlands and other waters to construct the project. To obtain a CWA Section 404 permit, Marin County would submit a permit application to the USACOE to place fill in waters within CWA jurisdiction. Marin County typically defers applying for USACOE permits for County projects until after the County has made a determination of the environmental effects of the project under the California Environmental Quality Act (CEQA), and issues a County determination to proceed with the project. Marin County uses this approach to ensure the County does not limit its choice of alternatives or mitigation measures before completion of CEQA compliance in accordance with the California Code of Regulations, Title 14, Chapter 3: Guidelines for Implementation of the California Environmental Quality Act, Article 1. Section 15004 (b) (2) Time of Preparation.3

As the amount of fill within CWA jurisdiction for this project exceeds 0.5 acre, the project would need to be authorized by an USACOE Individual (Standard) Permit. The USACOE would follow its regulatory program regulations at Title 33 CFR §§ 320 – 332 during the processing of the CWA permit for this project including:

- Issuing a Public Notice Soliciting Public and Agency Comments on the proposed project;
- Completing an evaluation as to whether the proposed project complies with the CWA Section 404 (b) (1) Guidelines 40 CFR Part 230 Guidelines for the Specification of Disposal Sites for Dredged or Fill Material, including whether the proposed avoidance, minimization, and compensatory mitigation measures for the proposed project are sufficient;
- Completing a public interest review of the proposed project;
- Completing a NEPA evaluation of the proposed project;
- Completing compliance with any required special-purpose environmental laws for the proposed project;
- Establish the party responsible for providing compensatory mitigation for environmental impacts to aquatic resources;
- Establishing mitigation ratios for compensatory mitigation for environmental impacts to aquatic resources;
- Evaluating the proposed compensatory mitigation site location, site location protection instrument, mitigation work plan, mitigation objectives, mitigation maintenance plan, ecological performance standards, monitoring requirements and adaptive management plan;

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3 E-mail from Marin County Environmental Consultant J. Roberto to FAA Environmental Protection Specialist D. Pomeroy, May 2, 2013.
• Establishing any required financial assurances required for the compensatory mitigation site; and

• Issuing a CWA permit decision for the proposed project, including identifying any special conditions for avoidance, minimization, and compensatory mitigation for impacts to wetlands and aquatic resources if the USACOE issues a permit.

The USACOE is a cooperating NEPA agency for this Final SEIS and could choose to adopt this Final SEIS to assist in meeting its evaluation requirements for this project in accordance with Title 40 CFR § 1506.3, 33 CFR § 230.21, and 33 CFR § 325 Appendix B. The USACOE could also choose to accept the FAA’s CWA Section 404 (b) (1) Guidelines 40 CFR Part 230 analysis, and the FAA’s demonstrated compliance with other special purpose environmental laws including the Endangered Species Act (ESA), Section 7, for endangered species, and the National Historic Preservation Act (NHPA) Section 106 for historic properties during the USACOE’s permit evaluation process. Alternatively, the USACOE could also choose to supplement the SEIS with more detailed or specific project or compensatory mitigation information that is not available as of the writing of this SEIS.

Marin County will use the information in this Final SEIS and the County’s Final Environmental Impact Report (EIR) to prepare its CWA Section 404 permit application for this project. If USACOE identifies additional information is needed to process the CWA Section 404 permit application for this project, the County will provide that information as part of the CWA Section 404 permitting process. If significant new circumstances or information bearing on the Proposed Action or relevant to the environmental concerns of the Proposed Action are identified during the USACOE CWA Section 404 permitting process, the FAA would prepare a supplement to this Final SEIS in accordance with 40 CFR § 1502.9 (c), FAA Order 1050.1F, paragraph 9-3, and FAA Order 5050.4B, paragraphs 1401 – 1402.

In order for the USACOE to issue a CWA permit, the proposed activity must comply with the CWA Section 404 (b) (1) Guidelines. These Guidelines establish several requirements including that the USACOE can only permit the least environmentally damaging practicable alternative that meets the overall project purpose.

As discussed in prior Final EIS, off-site alternatives such as using another airport or another mode of transportation are not practicable as they do not meet the project purpose. No on-site alternatives other than extending the existing runway at DVO by a minimum of 300 feet to a total runway length of 3,600 feet would meet the project’s purpose and need as described in Chapter Two, Purpose and Need. In addition, FAA design standards for an ARC B-II airport require a 300-foot runway safety area at each end of the 3,600-foot runway.
As any runway extension must be the same width as the existing runway, and must be aligned on the same compass direction as the existing runway, the opportunities to avoid and minimize impacts to wetlands and other waters associated with construction of a runway extension and associated runway safety areas at the Airport are limited to how much of the runway extension is constructed on each end of the existing runway, and the overall length of the runway extension. As a 300-foot runway extension is the minimum extension that meets the project purpose, as described in detail in Appendix D-1, the only mitigation measures to avoid or minimize impacts to wetlands relate to how much of the proposed runway extension is constructed on each end of the existing runway.

An evaluation of the project alternatives in relation to the CWA Section 404 (b) (1) Guidelines 40 CFR Part 230 Guidelines for the Specification of Disposal Sites for Dredged or Fill Material is provided below. Alternative A – No Action, avoids all impacts to wetlands and aquatic resources but does not meet the project purpose. Alternative C – Extend Runway to the Southeast by 1,100 feet, was not evaluated in detail in this Final SIES as it would require filling of Black John Slough, and therefore clearly has a greater impact on wetland and aquatic resources than Alternatives B, D, or E.

Alternative B – Extend Runway to the Northwest by 1,100 feet, and Alternative D – Extend Runway to the Southeast by 240 feet and to the Northwest by 860 feet, provide an 1,100-foot runway extension that was required to meet the project purpose for the previous critical aircraft for this project – the Cessna 525 business jet – but is 800 feet longer than necessary to meet the project purpose for the current critical aircraft – the family grouping of B-II turboprop aircraft. Alternative E – Extend Runway to the Northwest by 300 feet, was developed to meet the project purpose for the current critical aircraft – the family grouping of B-II turboprop aircraft. Alternative E has similar, but reduced, impacts on wetlands and aquatic resources as compared to Alternatives B and D. Alternative E requires filling only 5.49 acres of high brackish marsh wetland as compared to 10.29 acres and 11.11 acres of high brackish marsh wetland under Alternatives B and D, respectively. As described in Section 5.9, Alternative E also has a lesser impact on endangered species than Alternatives B and D. As Alternative E has less impact on endangered species and wetlands than Alternatives B and D, Alternative E is identified as the least environmentally damaging practicable alternative that meets the overall purpose of the proposed project, and is therefore the alternative whose implementation is consistent with the CWA Section 404 (b) (1) Guidelines.

Implementation of Alternative E would meet the requirements of EO 11990 Protection of Wetlands and DOT Order 5660.1A Preservation of the Nation’s Wetlands, because there is no less environmentally damaging practicable alternative to constructing the Proposed Project than Alternative E. Alternative E minimizes harm to wetland areas and aquatic resources as compared to Alternatives B and D. Alternatives to implement the Proposed Project that proposed constructing a shorter runway extension of less than 300 feet do not meet the project purpose and are not practicable under EO 11990 or DOT Order 5660.1A. Alternatives such as Alternatives B or D would meet the project purpose but have greater impacts on wetlands than
Alternative E. Implementing Alternatives B or D, when Alternative E is available and practicable, would be inconsistent with EO 11990 and DOT Order 5660.1A.

5.10.6 MITIGATION

5.10.6.1 Regulations for Compensatory Mitigation

The CWA, the NEPA, EO 11990 *Protection of Wetlands*, and DOT Order 5660.1A *Preservation of the Nation’s Wetlands*, all require consideration of mitigation measures for adverse environmental impacts. In addition, the USACOE regulations at Title 33 CFR 332 provide detailed requirements regarding the approval of compensatory mitigation. The USACOE regulations at 33 CFR 332.3 (b) also 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 CWA and RHA regulatory program compensatory 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. Based on USACOE regulations and the FAA NEPA requirements, a minimum of a one-to-one acreage replacement for aquatic resources eliminated by Alternative B, D, or E would be necessary to reduce aquatic resource impacts to a not significant level. However, as the following describes, compensatory mitigation for impacts to aquatic resources resulting from implementation of Alternative B, D, or E are anticipated to exceed a one-to-one replacement ratio.
The Marin Countywide Plan, Natural Systems and Agriculture Element, Biological Resources Section, Wetland Conservation Biological Goal Bio-3, Policy Bio-3.2 (Marin Countywide Plan page 2-25) identifies County policies of requiring a 2:1 ratio (replaced:impacted) for on-site compensatory wetland mitigation and a 3:1 ratio (replaced:impacted) for off-site compensatory wetland mitigation. As discussed in Section 5.9.5 and Appendix I, Biological Resources, Table I-1 of this SEIS, the USFWS Biological Opinion for this project requires endangered species habitat compensation for impacts of the proposed project that exceed the minimum one-to-one compensatory mitigation ratio identified in the USACOE CWA mitigation regulations.

As habitat compensation for both the California clapper rail (CCR) and salt marsh harvest mouse (SMHM) requires off-site habitat compensation, and these species prefer tidal salt marsh, it is likely that Marin County will choose to coordinate the wetland mitigation requirements identified in the CWA Section 404 permit with the habitat compensation requirements of the USFWS Biological Opinion. Such an approach is specifically allowed under the USACOE compensatory mitigation regulations at 33 CFR Part 332. In general, replacing the high brackish marsh and annual grassland to be temporarily or permanently removed as a result of the DVO runway extension project at a compensatory mitigation site considered suitable for restoration to tidal salt marsh in the 2013 USFWS Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California (USFWS Recovery Plan)\(^4\) would result in the establishment or enhancement of tidal salt marsh habitat that would provide greater wetland functions, and improved habitat for the CCR and SMHM, as compared to the wetlands, perennial drainages, and ditches/canals being removed.

The habitat acreages necessary to compensate for wetland and aquatic resource impacts under Alternatives B, D, and E based on the 3:1 (replaced:impacted) off-site habitat compensation ratio identified in the Marin Countywide Plan, Natural Systems Goal Bio-3, Policy Bio-3.2, are shown in Table 5.10-3, Table 5.10-4 and Table 5.10-5, respectively. Under Alternative B, 35.49 acres of compensatory mitigation acreage would be needed to compensate at a 3:1 ratio for the removal of 11.83 acres of wetland and aquatic habitat. Under Alternative D, 38.19 acres of compensatory mitigation acreage would be needed to compensate at a 3:1 ratio for the removal of 12.73 acres of wetland and aquatic habitat. Under Alternative E, 21.87 acres of compensatory mitigation acreage would be needed to compensate at a 3:1 ratio for the removal of 7.27 acres of wetland and aquatic habitat. These acreage values are different than the endangered species habitat impact acreages provided in SEIS Section 5.9 because Section 5.9 includes habitat impacts and habitat compensation for both upland and wetland endangered species habitat impacts, while Final SEIS Section 5.10 is specific to wetland and aquatic resources impacts.

\(^4\) U.S. Fish and Wildlife Service, Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California, 2013 Xviii + 605 pp
### Table 5.10-3
**COMPENSATORY MITIGATION WETLAND AND AQUATIC HABITAT ACREAGE REQUIRED – ALTERNATIVE B**
Gnoss Field Airport

<table>
<thead>
<tr>
<th>WETLAND TYPE</th>
<th>ALTERNATIVE B WETLAND AND AQUATIC HABITAT ACRES IMPACTED</th>
<th>ALTERNATIVE B COMPENSATORY MITIGATION RATIO REQUIRED&lt;sup&gt;1&lt;/sup&gt;</th>
<th>ALTERNATIVE B COMPENSATORY MITIGATION WETLAND AND AQUATIC HABITAT ACREAGE REQUIRED&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressional Seasonal</td>
<td>0.15</td>
<td>3:1</td>
<td>0.45</td>
</tr>
<tr>
<td>Riverine Seasonal</td>
<td>0.00</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>Slope Seep</td>
<td>0.00</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>High Brackish Marsh</td>
<td>10.29</td>
<td>3:1</td>
<td>30.87</td>
</tr>
<tr>
<td>Perennial Drainage</td>
<td>0.59</td>
<td>3:1</td>
<td>1.77</td>
</tr>
<tr>
<td>Ditch/Canal*</td>
<td>1.57 removed 0.77 created 0.80 net impact</td>
<td>3:1</td>
<td>2.40</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>11.83</strong></td>
<td>-</td>
<td><strong>35.49</strong></td>
</tr>
</tbody>
</table>

<sup>1</sup> Per Marin Countywide Plan, Natural Systems and Agriculture Element, Biological Resources Section, Wetland Conservation Biological Goal Bio-3, Policy Bio-3.2.

<sup>2</sup> Compensatory Mitigation Acreage Required = Acres Impacted x Compensation Ratio = (example: 0.15 acres x 3 = 0.45 acres)
Table 5.10-4
COMPENSATORY MITIGATION WETLAND AND AQUATIC HABITAT ACREAGE REQUIRED – ALTERNATIVE D
Gnoss Field Airport

<table>
<thead>
<tr>
<th>WETLAND TYPE</th>
<th>ALTERNATIVE D WETLAND AND AQUATIC HABITAT ACRES IMPACTED</th>
<th>ALTERNATIVE D COMPENSATORY MITIGATION RATIO REQUIRED&lt;sup&gt;1&lt;/sup&gt;</th>
<th>ALTERNATIVE D COMPENSATORY MITIGATION WETLAND AND AQUATIC HABITAT ACREAGE REQUIRED&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressional Seasonal</td>
<td>0.15</td>
<td>3:1</td>
<td>0.45</td>
</tr>
<tr>
<td>Riverine Seasonal</td>
<td>0.00</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>Slope Seep</td>
<td>0.00</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>High Brackish Marsh</td>
<td>11.11</td>
<td>3:1</td>
<td>33.33</td>
</tr>
<tr>
<td>Perennial Drainage</td>
<td>0.59</td>
<td>3:1</td>
<td>1.77</td>
</tr>
<tr>
<td>Ditch/Canal*</td>
<td>1.57 removed&lt;br&gt;0.69 created&lt;br&gt;0.88 net impact</td>
<td>3:1</td>
<td>2.64</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>12.73</strong></td>
<td></td>
<td><strong>38.19</strong></td>
</tr>
</tbody>
</table>

<sup>1</sup> Per Marin Countywide Plan, Natural Systems and Agriculture Element, Biological Resources Section, Wetland Conservation Biological Goal Bio-3, Policy Bio-3.2.

<sup>2</sup> Compensatory Mitigation Acreage Required = Acres Impacted x Compensation Ratio = (example: 0.15 acres x 3 = 0.45 acres)
Table 5.10-5
COMPENSATORY MITIGATION WETLAND AND AQUATIC HABITAT ACREAGE REQUIRED – ALTERNATIVE E
Gnoss Field Airport

<table>
<thead>
<tr>
<th>WETLAND TYPE</th>
<th>ALTERNATIVE E WETLAND AND AQUATIC HABITAT ACRES IMPACTED</th>
<th>ALTERNATIVE E COMPENSATORY MITIGATION RATIO REQUIRED(^1)</th>
<th>ALTERNATIVE E COMPENSATORY MITIGATION WETLAND AND AQUATIC HABITAT ACREAGE REQUIRED(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressional Seasonal</td>
<td>0.17</td>
<td>3:1</td>
<td>0.51</td>
</tr>
<tr>
<td>Riverine Seasonal</td>
<td>0.00</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>Slope Seep</td>
<td>0.00</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>High Brackish Marsh</td>
<td>5.49</td>
<td>3:1</td>
<td>16.47</td>
</tr>
<tr>
<td>Perennial Drainage</td>
<td>0.59</td>
<td>3:1</td>
<td>1.77</td>
</tr>
<tr>
<td>Ditch/Canal*</td>
<td>1.60 removed 0.58 created 1.02 net impact</td>
<td>3:1</td>
<td>3.06</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7.27</strong></td>
<td></td>
<td><strong>21.87</strong></td>
</tr>
</tbody>
</table>

\(^1\) Per Marin Countywide Plan, Natural Systems and Agriculture Element, Biological Resources Section, Wetland Conservation Biological Goal Bio-3, Policy Bio-3.2.

\(^2\) Compensatory Mitigation Acreage Required = Acres Impacted x Compensation Ratio = (example: 0.17 acres x 3 = 0.51 acres)
5.10.6.2 Use of USACOE Approved Mitigation Bank for Compensatory Mitigation of Wetland and Aquatic Resources Impacts

The USACOE compensatory mitigation regulations at 33 CFR Part 332 identify use of a USACOE-approved mitigation bank as the most preferable form of compensatory mitigation to offset unavoidable impacts to aquatic resources within CWA Section 404 or RHA Section 10 jurisdiction authorized by a USACOE permit. The USACOE San Francisco District maintains a listing of approved Wetland Mitigation Banks in the San Francisco Bay Area on its public website. As of November 2018, the Burdell Mitigation Bank was the only USACOE approved wetland mitigation bank that included Marin County in its service area.

The Burdell Mitigation Bank is located approximately 4,000 feet east of DVO. As of November 2018, there was one wetland mitigation credit available for sale from the Burdell Mitigation Bank. As each credit can be used to mitigate for filling of 0.1 acre of wetlands, Marin County could complete compensatory wetland mitigation for 0.1 acre of wetland fill by purchasing all remaining credits available for sale from the Burdell Mitigation Bank. There are also 12 wetland mitigation credits that were purchased from the Burdell Mitigation Bank, which have not yet been used for a specific project. If those additional 12 credits became available and were purchased by Marin County, those credits could be used to provide compensatory mitigation for an additional 1.2 acres of wetland fill. As a maximum of 13 wetland mitigation credits providing compensation for 1.3 acres of wetland fill might be available from the Burdell Mitigation Bank, the Burdell Mitigation Bank could provide part, but not all, of compensatory wetland mitigation for wetland impacts of Alternatives B, D, or E.

The Burdell Mitigation Bank has not been specifically approved for use by the USFWS to provide habitat compensation for impacts to the California Rideway’s rail or the salt marsh harvest mouse. Marin County would need to seek specific authorization from the USFWS to determine whether purchase of wetland mitigation credits from the Burdell Mitigation Bank could also be credited towards the habitat compensation requirements needed to address the endangered species habitat compensation requirements of Alternative B, D, or E. If the USACOE approves additional mitigation banks with an adequate number and resource type of compensatory mitigation credits available to mitigate for the environmental impacts to aquatic resources prior to Marin County completing the permitting process for this proposed project, Marin County could consider purchasing compensatory mitigation credits from a newly approved mitigation bank to provide compensatory mitigation for the proposed project.

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5.10.6.3 Use of USACOE-Approved In-Lieu Fee Program Compensatory Mitigation Bank Credits for Compensatory Mitigation of Wetland and Aquatic Resources Impacts

The USACOE compensatory mitigation regulations at 33 CFR Part 332 identify use of a USACOE-approved in lieu fee program as the second-most preferable form of compensatory mitigation to offset unavoidable impacts to aquatic resources within CWA Section 404 or RHA Section 10 jurisdiction authorized by a USACOE permit. No USACOE approved in-lieu fee programs are currently available for use as compensatory mitigation for environmental impacts to aquatic resources within the USACOE San Francisco District boundary, which includes Marin County and DVO.7

5.10.6.4 Use of USACOE Permittee-Responsible Mitigation under a Watershed Approach for Compensatory Mitigation of Wetland and Aquatic Resources Impacts

The USACOE compensatory mitigation regulations at 33 CFR Part 332 identify that when the USACOE intends to issue a permit for a regulated activity, and that activity is not in the service area of an approved mitigation bank or in lieu fee program that has an adequate number and resource type of compensatory mitigation credits available to mitigate for the environmental impacts to aquatic resources, that permittee-responsible compensatory mitigation is the only option.

The USACOE compensatory mitigation regulations at 33 CFR Part 332 identify Permittee-responsible mitigation under a watershed approach as the preferred method of permittee-responsible mitigation.

The USFWS Recovery Plan8 identifies its goal as “...the comprehensive restoration and management of tidal marsh ecosystems.” As the USFWS Recovery Plan9 is a comprehensive, watershed level plan incorporating restoration and management of tidal marsh ecosystems, implementation of an aquatic resources and endangered species habitat compensation plan consistent with the USFWS Recovery Plan would represent Permittee responsible mitigation under a watershed approach. The USFWS Recovery Plan,10 San Pablo Bay Recovery Unit11 extends from Gallinas Creek in Marin County (at the southwestern end of the recovery unit) around San Pablo Bay north and east to Mare Island in Solano County, and includes Gnoss Field Airport within its boundaries. There are several current, proposed, or potential projects for compensatory mitigation for aquatic resources and endangered species within the

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11 Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California, Sacramento Fish and Wildlife Office, Sacramento California, Chapter III: Recovery Strategies, pg. 146 and Figure III-3, pg. 154, 2013.
USFWS San Pablo Bay Recovery Unit that could provide compensatory mitigation for wetland and aquatic impacts of the Proposed Project.

Potential Sites for Providing Compensatory Mitigation for Adverse Environmental Impacts to Wetlands and Aquatic Sites Associated with the Gnoss Field Airport Runway Extension Project

The potential compensatory mitigation projects for impacts to wetland and aquatic resources (which are also impacts to endangered species habitat) described below are all within the San Pablo Bay Recovery Unit identified in the USFWS Recovery Plan and would represent compensatory mitigation options under a watershed approach. The USACOE Regulatory Program regulation 33 CFR Part 332 Compensatory Mitigation for Losses of Aquatic Resources § 332.4 (b) Planning and Documentation, Public Review and Comment, allows USACOE permit applicants to keep confidential certain business information such as the exact location of a proposed compensatory mitigation site that has not yet been secured. Marin County would finalize its compensatory mitigation site and plan for impacts to wetlands and aquatic sites during the USACOE CWA permit process.

Don Edwards San Francisco Bay National Wildlife Refuge

Several San Francisco Bay National Wildlife Refuge (Refuge) projects needing funding are potential mitigation alternatives. 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 for in-kind habitat creation or restoration. Potential sites for the tidal marsh creation/restoration include:

- The Bel Marin Keys Wetlands Restoration Project, a 1,600-acre project in Marin County, is part of the Hamilton Wetland Restoration Project. The USACOE and the California State Coastal Conservancy issued a Final EIR and EIS in April 1999 for the Hamilton Wetland Restoration Project. An Addendum to the Supplemental EIR/EIS for the Bel Marin Keys Unit V Expansion of Hamilton Wetland Restoration Project was issued August 2017. The project is being funded in part by the San Francisco Bay Coastal Conservancy Program. Project construction may take up to two years. As of the writing of this Supplement to the Final EIS, it is unknown if construction of the project has begun. Contribution to this project may be a viable alternative.¹²

The Eden Landing Ecological Reserve is a 2,270-acre tidal wetland restoration project in the San Francisco Bay associated with the South Bay Salt Pond Restoration Project led by the Refuge. The project would be located in Alameda County. The USFWS and the CDFW issued a Draft Environmental Impact Statement/Report in April 2018. If a Record of Decision is issued, permitting would need to be completed before construction could begin. Contribution to this project may be a viable alternative.\(^\text{13}\)

The Ravenswood Complex Restoration Project is a 355-acre tidal wetland restoration project in the San Francisco Bay associated with the South Bay Salt Pond Restoration Project led by the Refuge. The project would be located in San Mateo County. The USFWS and the CDFW issued a Final EIS/EIR in April 2016. If a Record of Decision (ROD) is issued, permitting would need to be completed before construction could begin. Contribution to this project may be a viable alternative.\(^\text{14}\)

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 wetland habitat to sell for mitigation credits or develop a project-specific agreement with Marin County to use the property for as a project specific wetland mitigation site. There is the potential for Marin County to participate in a project specific wetland mitigation project on 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 MBTA 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.

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The Sonoma Marin Area Rail Transit (SMART) acquired the Mira Monte Marina which is composed of 56 acres in 2013. The marina will be restored and preserved as part of SMART’s environmental mitigation program. The SMART rail will restore 5 acres of tidal wetlands and enhance 10 acres within the marina. This leaves approximately 41 acres available for potential future mitigation needs for the railway project and, potentially, other local transportation projects. This is one example of a potential off-site restoration site in which participation by Marin County might be considered allowable mitigation by the USACOE. The project is located in southern Marin County and northern Sonoma County at the confluence of San Antonio Creek and the Petaluma River.¹⁵

Marin County could choose to implement its own wetland mitigation project in the Lower Novato Creek Watershed as identified in the USFWS April 3, 2013 Biological Opinion for Alternative B of this SEIS. The USFWS Recovery Plan¹⁶ identifies the San Pablo Bay Recovery Unit near the mouth of the Novato Creek watershed adjacent to the Hamilton Field wetland restoration project as a potential tidal marsh restoration area. Such a project could potentially meet the compensatory wetland mitigation requirements of the CWA, Section 404, permitting process, and the habitat compensation measures identified in the ESA, Section 7 consultation, USFWS Biological Opinion for Alternative B.

**USFWS Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California, San Pablo Bay Recovery Unit**

The USFWS Recovery Plan, Chapter III: Recovery Strategies, Section C. Restoration Maps, includes for the San Pablo Bay Recovery Unit Figure III-10 Segment D, Figure III-11 Segment E, Figure III-12 Segment F, and Figure III-13, Segment G, which all identify areas for “Near Term Restoration, Future Restoration, or Potential Restoration.” These figures are provided in Appendix I (see USFWS Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California (2013) Chapter III: Recovery Strategies Figure III-10 Segment D, Figure III-11 Segment E, Figure III-12 Segment F, Figure III-13 Segment G, showing the boundaries of the San Pablo Bay Recovery Unit). These Restoration Maps include the projects previously described and additional areas that the USFWS considers appropriate for near term, future, or potential restoration to tidal marsh ecosystem. Developing a habitat compensation plan for endangered species at the compensation ratios identified in Section 5.9 and Table I-1 of Appendix I would also provide compensatory mitigation for impacts to aquatic resources.


5.10.6.5 Use of USACOE Permittee-Responsible Mitigation through On-Site and In-Kind Mitigation

The USACOE CWA and RHA regulatory program 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. Therefore, on-site, in-kind compensatory mitigation for aquatic resources or endangered species that creates or enhances aquatic and/or endangered species habitat is considered impracticable. Reestablishment of vegetation in areas of temporary disturbance of aquatic resources or endangered species habitat that would not represent an additional attractant to wildlife hazardous to aircraft is considered practicable.

5.10.6.6 Use of USACOE Permittee-Responsible Mitigation through Off-Site and Out-Of-Kind Mitigation

The USACOE CWA and RHA regulatory program mitigation regulations at 33 CFR Part 332 identify that Permittee-Responsible Mitigation under a watershed approach is preferable to Permittee-Responsible Mitigation through an off-site and out-of-kind mitigation that has not been based on a watershed approach. As the USFWS Recovery Plan for Tidal Marsh Ecosystems provides a watershed approach for providing compensatory mitigation for impacts to aquatic resources and endangered species for the proposed project, there is no need for the development of a separate compensatory mitigation proposal that does not utilize the existing watershed information.

5.10.6.7 Conclusion

The USFWS San Pablo Bay Recovery Unit in the USFWS Recovery Plan, which includes DVO, identifies many potential short-term, mid-term, and potential tidal salt marsh restoration or creation sites. Wetland restoration or creation at one of these sites could provide compensatory mitigation for the wetland, aquatic resource and endangered species impacts identified in Sections 5.9 and 5.10 of this SEIS. The FAA concludes that if Marin County provides compensatory mitigation for wetland impacts at the mitigation ratio of 3:1 identified in their Countywide plan or at an alternative ratio identified in a USACOE-approved and issued CWA permit for this project, the impact of this project on wetlands and aquatic resources would not be significant.
In order to rely on mitigation to reduce environmental impacts to a not significant level, the FAA must determine that the proposed mitigation is technically possible to implement. The USFWS *Recovery Plan* identifies numerous examples of successful tidal marsh restoration and creation projects in the San Francisco Bay area, and specifically within the USFWS San Pablo Bay Recovery Unit, which includes DVO within its boundaries. The USFWS *Recovery Plan* identifies habitat restoration and creation as its primary strategies for recovery of listed species in tidal marsh ecosystems of Northern and Central California and considers such restoration “...highly feasible in the San Francisco Bay Estuary.” The FAA considers this sufficient evidence that it is feasible to provide compensatory mitigation for the impacts to wetland and aquatic resources associated with Alternative B, D, or E.

In order for the FAA to determine that compensatory mitigation will reduce environmental impacts to a not significant level, the FAA must also be able to reasonably conclude that the proposed mitigation will actually be implemented. The USACOE has a compliance and enforcement program to ensure that USACOE permit recipients comply with USACOE permit and CWA requirements. The USACOE compensatory mitigation regulations at 33 CFR Part 332 require that permit applicants submit ecological performance standards, mitigation monitoring standards, mitigation site management plans, and sometimes financial assurances to obtain a USACOE permit. USACOE permit holders with compensatory mitigation plans that do not meet ecological performance standards can be required to undertake corrective actions to ensure their compensatory mitigation addresses the environmental impacts to wetlands and aquatic resources identified in the USACOE permit. In addition, the FAA can also add special conditions that require implementation of compensatory mitigation for impacts to wetland and aquatic resources to any approval of Federal funding assistance to construct the proposed runway extension.

Based on the various regulatory and administrative controls described above, the FAA concludes there are sufficient administrative controls available to ensure that Marin County will adhere to all compensatory mitigation requirements identified for the Proposed Project or its Alternatives. The FAA’s decision as to whether to include special conditions regarding compensatory mitigation as part of Federal financial assistance grants to Marin County will be made in the FAA Record of Decision regarding this SEIS.
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