CHAPTER TWO
PURPOSE AND NEED

This chapter of the Supplement to the Final Environmental Impact Statement (SEIS) describes the purpose and need for the proposed improvements at Gnoss Field Airport (DVO or Airport) and identifies Federal Aviation Administration (FAA) regulations and policies for aviation safety and the potential Federal approvals that would be required for the proposed project to be implemented. FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions requires that an Environmental Impact Statement (EIS) fully address and convey the purpose and need for a proposed project. According to the Council on Environmental Quality (CEQ) and their implementing regulations for NEPA, the purpose and need shall briefly specify the underlying purpose and need. In this SEIS, the FAA considers the reasonable alternatives that meet the purpose and need of Marin County. The purpose and need for the proposed improvements serves as the foundation for the identification of reasonable alternatives to the Proposed Project and the comparative evaluation of impacts of development. In order for an alternative to be considered viable and carried forward for detailed evaluation within the NEPA process and this SEIS, it must address the needs, as described more fully in the following sections.

2.1 PURPOSE AND NEED

The following sections present the Sponsor's and FAA's purpose and need.

2.1.1 SPONSOR’S PURPOSE AND NEED

Marin County has prepared several evaluations of the Airport’s operations and facilities, including the 1989 Airport Master Plan, Marin County Airport Gnoss Field, 1989. the 1997 Update of the Airport Master Plan, Marin County Aviation Commission Resolution No. 97-1: A Resolution Adopting Chapter 6.0 – Airport Development Program Update 1997 – Marin County Airport Master Plan (Gnoss Field) and Recommendation of Approval of Chapter 6.0 1997 Update to the Marin County Board of Supervisors, February 5, 1997. Furthermore, the FAA has approved an updated forecast and runway analysis since the publication of the June 2014 Final EIS. These studies identified the limitations regarding the Airport’s ability to accommodate existing aircraft and aviation users for which the Airport was designed. Specifically, the Airport cannot fully accommodate existing aviation activity, as represented by the family grouping of critical aircraft that regularly uses the Airport under hot weather conditions. For the purpose of this Supplement to the Final EIS, hot weather is defined as the mean daily maximum temperature of the hottest month at the Airport (FAA A/C 150/5325-4B, paragraphs 201 and 506).

1 Airport Master Plan Marin County Airport Gnoss Field, 1989.
2 Marin County Aviation Commission Resolution No. 97-1: A Resolution Adopting Chapter 6.0 – Airport Development Program Update 1997 – Marin County Airport Master Plan (Gnoss Field) and Recommendation of Approval of Chapter 6.0 1997 Update to the Marin County Board of Supervisors, February 5, 1997.
4 For the purpose of this Supplement to the Final EIS, hot weather is defined as the mean daily maximum temperature of the hottest month at the Airport (FAA A/C 150/5325-4B, paragraphs 201 and 506).
The existing runway at DVO is 3,300 feet long and as a result cannot fully accommodate the operations of the family grouping of critical aircraft. Therefore, the purpose of the Sponsor’s Proposed Project is to:

**allow existing aircraft, as represented by the family grouping of critical aircraft at DVO, to operate without operational weight restrictions under hot weather conditions.**

### 2.1.2 FAA PURPOSE AND NEED

The FAA’s statutory mission is to ensure the safe and efficient use of navigable airspace in the U.S. as set forth under 49 U.S. Code (USC) § 47101 (a)(1). The FAA must ensure that the proposed action does not derogate the safety of aircraft and airport operations at DVO. Moreover, it is the policy of the FAA under 49 USC § 47101(a)(6) that airport development projects provide for the protection and enhancement of natural resources and the quality of the environment of the United States.

Additionally, the purpose of the Proposed Action in connection with Marin County’s request to modify the existing Airport Layout Plan (ALP) is to ensure the proposed improvements to the airport do not adversely affect the safety, utility and efficiency of the airport. Pursuant to 49 USC § 47107(a)(16), the FAA Administrator (under authority delegated from the Secretary of Transportation) must approve any revision or modification to an ALP regarding the safety, utility, and efficiency of the airport before the revision or modification takes effect. The Administrator’s approval reflects a determination that the proposed alterations to the airport, reflected in the ALP revision or modification, do not adversely affect the safety, utility, or efficiency of the airport.

### 2.1.3 INSUFFICIENT RUNWAY LENGTH

The determination that the current runway length at DVO is insufficient to meet the Sponsor’s and the FAA’s Purpose and Need for the Proposed Action is explained in detail in this section.

FAA Order 5090.5 *Formulation of the NPIAS* and *ACIP*, Section 2.2.1, identifies that FAA goals for airport facilities includes supporting construction, modification, or expansion of airport facilities to meet demonstrated aeronautical needs, and bringing airport facilities into conformity with current airport standards. The FAA has issued additional guidance, FAA Advisory Circular (AC) 150/5000-17, *Critical Aircraft and Regular Use Determination*, dated June 20, 2017, to further define how to determine the critical aircraft for an airport. FAA AC 150/5000-17 replaced the term “substantial use” of an airport with “regular use” of an airport and defines the term “regular use.”
An aircraft or family of aircraft is called the “critical aircraft” because it is the most “demanding” aircraft in terms of the physical dimensions of the airport such as the length and width of the runways and taxiways, and separation distance between runways and taxiways required for that aircraft to operate at the airport. FAA AC 150/5000-17 defines the critical aircraft as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. Regular use is 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is either one takeoff or one landing. The FAA uses the requirements of an airport’s critical aircraft as a basis for determining when new aviation development is justified. This type of evaluation is consistently applied across the aviation industry and is the recognized approach for determining the needs of an airport. See Appendix C-1, Aviation Activity Forecast, for more information regarding the designation of the family grouping of critical aircraft for DVO. Within the current fleet mix at DVO, the existing critical aircraft is the family of B-II Turboprop aircraft. This is the most demanding aircraft grouping for runway length with regular use (see Appendix C-1).

The Marin County Aviation Commission Resolution No. 97-1: A Resolution Adopting Chapter 6.0 Airport Development Program Update 1997 identified a runway extension as a part of DVO’s future development program and a proposed runway length was developed as part of the 2002 Preliminary Design Report. During the preparation of this SEIS, FAA AC 150/5325-4B, Runway Length Requirements for Airport Design, was used to verify an appropriate length for Runway 13/31 at DVO. FAA AC 150/5325-4B, Paragraph 202, Design Approach, provides the acceptable methods to determine a recommended runway length. For this SEIS, Chapter 2 of that AC, Runway Lengths for Small Airplanes with Maximum Certificated Takeoff Weight of 12,500 Pounds (5,670 Kg) or Less was used to verify the necessary runway length for the family grouping of critical aircraft at DVO.

The runway length analysis is described in detail in Appendix D-1, Runway Length Analysis. The following summarizes the inputs that were used to calculate the recommended runway length requirement for DVO to meet the project purpose and need. The project purpose and need is to allow existing aircraft, as represented by the family grouping of critical aircraft at DVO, to operate without operational weight restrictions under hot weather conditions.
Input Data:

**Airport elevation:**  Sea Level

**Mean daily maximum temperature of the hottest month:**  82° Fahrenheit

Using Figure 2-1 from FAA AC 150/5325-4B, *Small Airplanes with Fewer than 10 Passenger Seats*, the inputs listed above analyzed along the curve.

1. Step 1 – Find the mean daily maximum temperature of the hottest month: 82° Fahrenheit *(F)*.
2. Step 2 – Proceed vertically to the airport elevation: *Sea Level (two feet)*.
3. Step 3 – Proceed horizontally to the runway length axis.
4. Step 4 – Read runway length. The runway length requirement derived from Figure 2-1, FAA AC 150/5325-4B, is 3,550 feet and is rounded up to 3,600 feet per FAA guidance.

Based on the runway length analysis described above, the need at DVO is to address insufficient runway length that precludes the family grouping of critical aircraft from operating without operational weight restrictions under hot weather conditions.

### 2.2 SPONSOR’S PROPOSED PROJECT

Marin County developed the June 2014 Final EIS Sponsor’s Proposed Project, an 1,100-foot runway extension through the Master Plan for Marin County Airport the Marin County Aviation Commission Resolution No. 97-1: A Resolution Adopting Chapter 6.0 Airport Development Program Update 1997 and the Preliminary Design Report Runway Extension Gnoss Field. Exhibit 2-1, *Existing Airport Layout*, shows the existing Airport location and facilities. The Sponsor’s Proposed Project was consistent with the runway length analysis in the June 2014 Final EIS. Marin County also evaluated the Sponsor’s Proposed Project, the 1,100-foot runway extension, in their California Environmental Quality Act (CEQA) Final Environmental Impact Report (EIR).

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11 See Appendix D-1, *Runway Length Analysis*, for information on the calculation of the final runway length requirement.

12 Airport Master Plan Marin County Airport Gnoss Field, 1989.

13 Marin County Aviation Commission Resolution No. 97-1: A Resolution Adopting Chapter 6.0 Airport Development Program Update 1997 – Marin County Airport Master Plan (Gnoss Field) and Recommendation of Approval of Chapter 6.0 1997 Update to the Marin County Board of Supervisors, February 5, 1997.

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2.3 FAA PREFERRED ALTERNATIVE

Since completion of the June 2014 Final EIS, the FAA has determined the critical aircraft at DVO has changed, and the necessary runway length required by the critical aircraft to operate without operational weight restrictions in hot weather has also changed. Components of the FAA’s Preferred Alternative are described below and the determination of the FAA’s Preferred Alternative are discussed in Chapter 3, Alternatives.

Exhibit 2-2, FAA’s Preferred Alternative, shows the FAA’s Preferred Alternative, which includes the following elements:

- Shift Runway 13/31 106 feet to the north and extend Runway 13/31 300 feet to the northwest from 3,300 feet to a total length of 3,600 feet while maintaining the 75-foot width of the runway;
- Relocate existing taxiways accessing south end of Runway 13/31 to new runway end;
- Extend the parallel taxiway to the full length of the runway maintaining the existing runway to taxiway separation distance of 155 feet;¹⁵
- Widen the existing Runway Safety Area (RSA) along the sides of Runway 13/31 from its existing width of 120 feet centered on the runway centerline to a RSA width of 150 feet centered on the runway centerline to meet current FAA B-II airport design standards;
- Construct RSAs of 300 feet long beyond each end of the shifted Runway 13/31 to meet current FAA B-II airport design standards;
- Corresponding realignment of drainage channels to drain the extended runway and taxiway;
- Corresponding levee extension to protect the extended runway and taxiway from flooding; and
- Relocate the existing Precision Approach Path Indicator (PAPI) navigational aids that pilots use to land at the Airport to reflect the extended runway.

Marin County intends to keep DVO open during construction of the proposed project. Any modifications to Airport operations necessary to maintain safety during construction would be addressed in a Construction Safety and Phasing Plan prepared in accordance with FAA AC 150/5370-2F, Operational Safety on Airport During Construction and approved by the FAA.

¹⁵ FAA AC 1500/5300-13A, Airport Design A/C, identifies a minimum runway centerline to parallel taxiway centerline separation distance standard of 150 feet for B-I small aircraft and 225 feet for B-I and B-II aircraft. The existing Gnoss Field Airport runway to parallel taxiway separation of 155 feet meets the B-I small standard. Marin County is anticipated to seek a Modification of Standards to retain the 155-foot runway to parallel taxiway separation distance, rather than relocate the existing parallel taxiway to meet the B-I and B-II taxiway separation standard.
2.4 PROPOSED FEDERAL ACTIONS

Several Federal actions are directly or indirectly proposed to occur. Implementation of the Sponsor’s Proposed Project or other build alternatives would require several Federal actions and approvals. These include:

- Unconditional approval of the ALP to depict the proposed runway shift/extension and parallel taxiway extension pursuant to 49 USC §§ 40103(b) and 47107(a)(16);
- Development of air traffic control and airspace management procedures designed to affect the safe and efficient movement of air traffic to and from the proposed runway development. Such actions would include, but are not limited to, the establishment or modification of flight procedures; and
- A determination that the environmental analysis prerequisites associated with any future Airport Improvement Program (AIP) funding applications have been fulfilled pursuant to 49 USC § 47101 et seq.
- In addition to FAA Federal actions, construction of any runway extension would require a Clean Water Act (CWA), Section 404, permit authorization from the USACOE to fill waters within CWA jurisdiction. The USACOE determination regarding whether to issue a CWA, Section 404, permit is a USACOE Federal action.

The proposed improvements under consideration in this SEIS, and described as Alternatives B, D, and E in Chapter Three, are designed to allow the Airport to accommodate existing aviation traffic and passenger demand.

2.5 COORDINATION WITH OTHER LAWS AND STATUTES

The FAA prepared this SEIS, in accordance with the provisions of the CEQ regulation, 40 Code of Federal Regulations (CFR) § 1506.2, which directs Federal agencies to cooperate with state and local agencies “to the fullest extent possible” to reduce duplication between the NEPA and comparable state and local requirements. As such, this chapter complies with California State Water Resources Control Board implementation of federal CWA Section 401 Water Quality Certification requirements, per California Code of Regulations (CCR) 23 CCR § 3949.2, demonstrating public need for the project. In addition, this SEIS addresses the requirements of the USACOE, Section 404 process for impacts to waters within the CWA jurisdiction, as well as National Historic Preservation Act (NHPA), Section 106, consultations for impacts to historic properties, as identified in 36 CFR § 800.8, Coordination with the National Environmental Policy Act. This SEIS also addresses the requirements of the U.S. Department of Transportation (USDOT) Act of 1966, Section 4(f).16

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16 Section 4(f) of the Department of Transportation Act of 1966 is currently codified as 49 USC § 303(c).
406-Foot Runway Construction
(300-Foot Runway Extension
Plus 106-Foot Runway Shift)

Taxiway Extension

Extend Levee and Drainage Ditch

Construct 300-Foot x 150-Foot Safety Area

406-Foot Runway Construction
(300-Foot Runway Extension
Plus 106-Foot Runway Shift)

Taxiway Demolition

Taxiway Extension

Extend Drainage Ditch

Construct 300-Foot x 150-Foot Safety Area

Legend

- Proposed Runway Construction
- Proposed Taxiway and Safety Areas
- Proposed Taxiway Demolition
- Proposed Drainage Ditch
- Proposed Levee
- Existing Runway
- Existing Buildings
- Airport Property Boundary

Gross Field Airport

FAA's Preferred Alternative

Supplement to the Final Environmental Impact Statement
Gross Field Airport

EXHIBIT: 2-2
2.6 TIME FRAME FOR FEDERAL ACTIONS

The FAA issued a Federal Register Notice on July 11, 2008 (see Appendix A, Agency Scoping and Coordination), announcing its intent to prepare an EIS for the proposed improvements at DVO. In addition, Marin County issued a Notice of Preparation of an EIR on July 11, 2008 (see Appendix A). The FAA issued a Notice of Availability and released the Draft EIS for a 60-day public review on December 9, 2011, held a public hearing to receive comments on the December 2011 Draft EIS on January 10, 2012, and accepted public comments on the December 2011 Draft EIS through February 6, 2012. Marin County concurrently issued its EIR for this project on December 9, 2011, and accepted comments on its EIR through February 6, 2012. The FAA reviewed and responded to all comments on the December 2011 Draft EIS in the June 2014 Final EIS. Appendix Q, Response to Comments provides responses to all comments received on the December 2011 Draft EIS. The FAA did not issue a Record of Decision (ROD) regarding the Federal actions in the June 2014 Final EIS, but instead has decided to prepare a SEIS to address changes in the critical aircraft at DVO.

The FAA issued a Notice of Availability and released the Draft SEIS for a 60-day public review on July 19, 2019, held a public hearing to receive comments on the July 2019 Draft SEIS on August 22, 2019, and accepted public comments on the July 2019 Draft SEIS through September 6, 2019.

The FAA will issue a ROD on the SEIS. The FAA ROD will not be issued until at least 30 days after the distribution of this SEIS to the public. When submitted, the USACOE will review the CWA permit application for the project and issue a separate memorandum for record and/or USACOE ROD regarding the permit application.
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