CHAPTER SIX
ALTERNATIVES

6.1 INTRODUCTION

The preparation of this chapter complies with California Environmental Quality Act (CEQA) Title 14 Natural Resources, Division 6 Resources Agency, Chapter 3 Guidelines for Implementation of the CEQA, Article 9 Contents of Environmental Impact Reports (EIR), §15126.6 Consideration and Discussion of Alternatives to the Proposed Project, which states that the EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. In addition, CEQA provides the following guidelines for discussing project alternatives (§15126.6a-d):

- An EIR need not consider every conceivable alternative to a project. Rather, a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation shall be considered;
- It is not required to consider alternatives that are infeasible;
- The range of potential alternatives to the Proposed Project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects; and
- Sufficient information about each alternative shall be included to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

The examination of alternatives serves to establish the conclusion that an alternative that addresses the project's objective and might enhance environmental quality (or have a less detrimental effect), has not been inappropriately dismissed from consideration. This chapter describes the process of identifying and evaluating alternatives for meeting the project sponsor's objectives for the Proposed Project as described in Chapter Two, *Summary*.

The range of feasible alternatives discussed in the EIR is based on the findings of a Runway Length Analysis that was prepared at the request of the FAA for the Environmental Impact Statement (EIS).[1] The results of the runway length analysis point to the conclusion that the existing 3,300 feet of runway available at DVO is insufficient to serve ~~a majority of the airport's fleet mix under most conditions~~the critical aircraft at DVO. The analysis concludes that a runway length of 4,400 feet would provide the necessary length to satisfy the FAA's standard methodology for calculating lengths, as well as address the local conditions that occur at DVO. Due to standard user practices at DVO, an additional 1,100 feet of runway length is recommended for the critical aircraft; for a total runway length of 4,400 feet (see Volume 3, Appendix D). Therefore, a shorter runway length was not deemed to be a feasible alternative.

[1] The EIS will be released by the Federal Aviation Administration at a future date.

The analysis of EIR alternatives is an independent examination of all alternatives that could reasonably meet the project sponsor's objectives, as described in detail in Chapter Two. In the ~~Environmental Impact Statement (~~EIS~~) prepared in conjunction with this EIR~~, the Proposed Project is identified as Alternative B. In order to maintain consistency between the EIS and EIR the Proposed Project is also identified as Alternative B in the alternatives analysis.

- Alternative A, No Project
- Alternative B, Proposed Project (Northwest Extension of Runway)
- Alternative C, Southern Extension of Runway, and
- Alternative D. Northwest and Southern Extension of Runway
- Off-Site Alternatives, including the use of other airports in the region, as well as the use of other modes of transportation and/or telecommunications.

6.2 ALTERNATIVE A – NO PROJECT

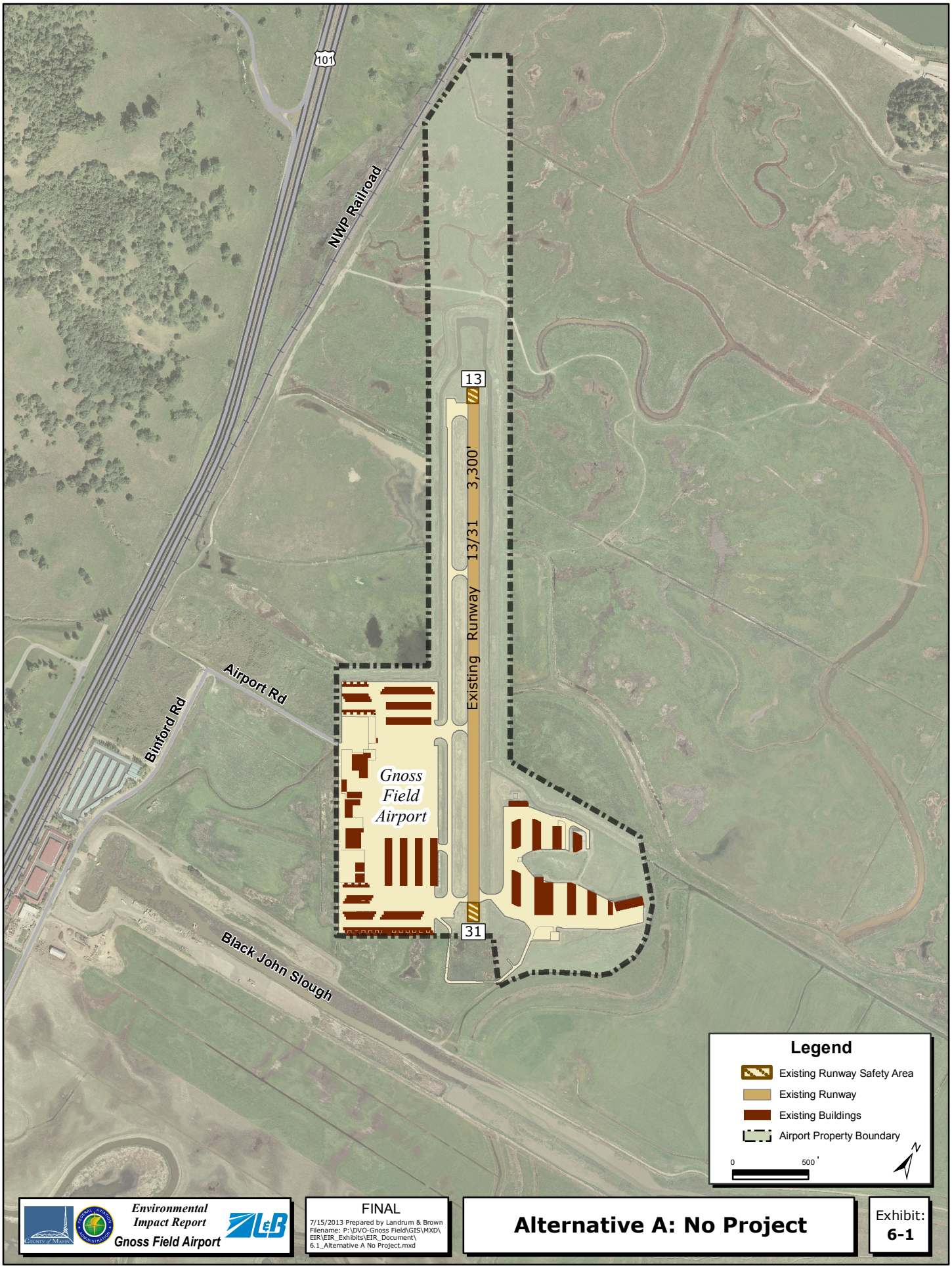
CEQA Guidelines Section 15126.6(e) requires that a No Project alternative be evaluated, along with its impacts. Section 15126.6(e)(3)(B) states that "If a project is other than a land use plan or regulatory plan, for example a development project on an identified property, the No Project Alternative is the circumstances under which the project does not proceed." CEQA Guidelines Section 15126.6(e)(3)(B) further states that "In certain instances, the No Project Alternative means "no build" wherein the existing environmental setting is maintained," which is true in the case of this EIR analysis.

With the No Project Alternative for this EIR analysis, Runway 13/31 would be maintained at its current length and no associated taxiway extension, Runway Safety Area (RSA) extension, realignment of drainage channels, extension of levees, or reprogramming of navigational aids would occur. **Exhibit 6-1*, Alternative A: No Project*,** presents a graphic depiction of Alternative A.

6.2.1 ABILITY TO MEET PROJECT OBJECTIVES

The No Project Alternative does not have the ability to meet the stated sponsor's project objectives as it would not address the need for more runway length at Gnoss Field Airport (DVO or Airport) to accommodate current aircraft operators. In addition, indirect costs would occur as a result of not meeting Federal Aviation Administration (FAA) standards and not providing the runway length to accommodate the current aircraft. Indirect costs include the loss of revenue to the Airport due to the fact that some pilots would not choose to use DVO, therefore depriving Marin County of revenues associated with the sale of fuel to these aircraft.

CEQA guidelines require a No Project Alternative be included in the evaluation of environmental impacts, therefore this alternative will be carried forward in the alternatives analysis.



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\6.1_Alternative A No Project.mxd

Alternative A: No Project

Exhibit: **6-1**

BACK OF EXHIBIT 6-1

6.3 ALTERNATIVE B: EXTEND RUNWAY TO THE NORTHWEST BY 1,100 FEET (THE PROPOSED PROJECT)

Alternative B – the Proposed Project includes an extension of Runway 13/31 to the northwest by 1,100 feet for a total runway length of 4,400 feet. In addition, this alternative would include extension of the corresponding taxiway to match the length of the runway; inclusion of FAA standard 240-foot RSA at each end of the runway in addition to the 1,100-foot runway extension; corresponding realignment of drainage channels to drain the extended runway, taxiway and RSA; corresponding levee extension to protect the extended runway, taxiway, and RSA from flooding; and re-programming of the navigational aids that pilots use for approach to landing at the Airport to reflect the extended runway. **Exhibit 6-2*, Alternative B (Proposed Project)***, presents a graphic depiction of Alternative B.

6.3.1 ABILITY TO MEET PROJECT OBJECTIVES

Alternative B has the ability to meet the objectives of the project and is the Proposed Project.

6.4 ALTERNATIVE C: EXTEND RUNWAY TO THE SOUTH BY 1,100 FEET

Alternative C includes an extension of Runway 13/31 to the southeast by 1,100 feet for a total runway length of 4,400 feet at the existing runway width of 75 feet. In addition, this alternative would include extension of the corresponding taxiway to match the length of the runway; extension of the existing FAA standard 120-foot wide RSA centered on the runway centerline to match the length of the runway; inclusion of FAA standard 240-foot RSA at each end of the runway in addition to the 1,100 foot runway extension; corresponding realignment of drainage channels to drain the extended runway and taxiway; corresponding levee extension to protect the extended runway and taxiway from flooding; corresponding relocation of the access road south of the runway, which extends from the west side to the east side of the Airport, to keep the access road outside of the RSA; and re-programming of the navigational aids that pilots use to land at the Airport to reflect the extended runway. **Exhibit 6-3*, Alternative C***, presents a graphic depiction of Alternative C.

6.4.1 ABILITY TO MEET PROJECT OBJECTIVES

This alternative meets the need of the project. However, this alternative requires greater amounts of fill of waters and wetlands when compared to Alternative B, including the necessity to fill portions of the waters of Black John Slough. This alternative also requires land acquisition for construction and would require more aquatic mitigation than Alternative B. As the same project purpose can be accomplished by implementation of Alternative B or Alternative D (described in Section 6.5 of this chapter), and the Clean Water Act, Section 404, (b)(1) guidelines only allow the USACOE to permit the least environmentally damaging

practicable alternative, it is not likely that the USACOE would issue Marin County a Clean Water Act, Section 404 permit to construct Alternative C, when Alternatives B and D have been identified as practicable. Therefore, this alternative will not be carried forward for detailed analysis.

6.5 ALTERNATIVE D: EXTEND RUNWAY TO THE SOUTHEAST BY 240 FEET AND TO THE NORTHWEST BY 860 FEET

Alternative D includes an extension of Runway 13/31 to the southeast by 240 feet and to the northwest by 860 feet for a total runway length of 4,400 feet at the existing runway width of 75 feet. In addition, this alternative would include extension of the corresponding taxiway to match the length of the runway; extension of the existing FAA standard 120-foot wide RSA centered on the runway centerline to match the length of the runway; inclusion of FAA standard 240-foot RSA at each end of the runway in addition to the 1,100-foot runway extension; corresponding relocation of the south access road from the west to the east of the Airport to maintain separation of ground vehicle traffic from aircraft traffic; 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 re-programming of the navigational aids that pilots use to land at the Airport to reflect the extended runway.

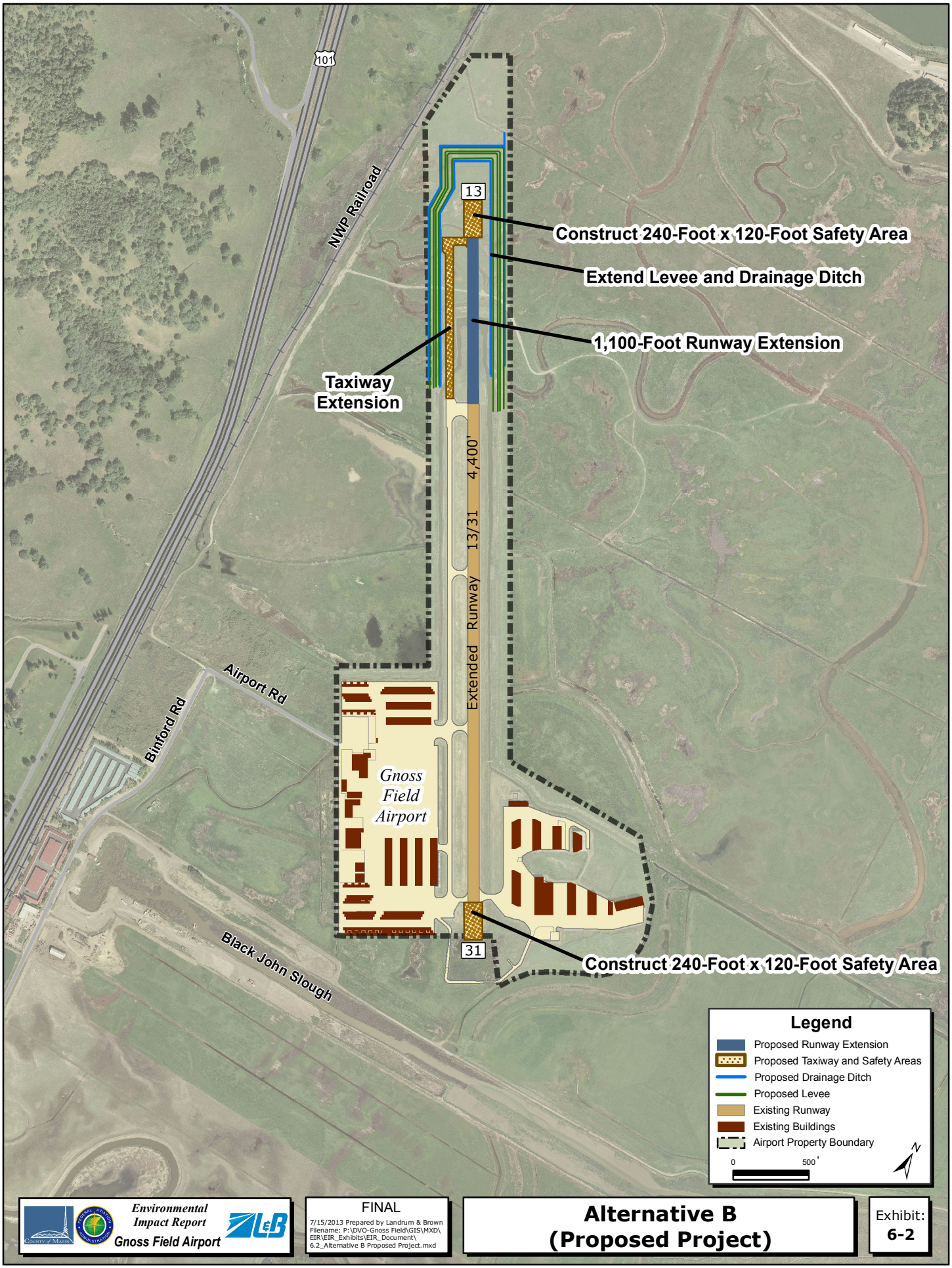
Exhibit 6-4*, Alternative D,* presents a graphic depiction of Alternative D. Several variations of Alternative D were considered that relocated the access road for Alternative D farther south than shown on Exhibit 6-5. These variations were not evaluated in detail because compared to Alternative D, they increased the amount of time required for ground vehicles to traverse the runway protection zone; increased wetland fill and mitigation requirements over Alternative C; and increased costs.

6.5.1 ABILITY TO MEET PROJECT OBJECTIVES

Alternative D has the ability to meet the need of the project and includes similar environmental impacts as the Sponsor's Proposed Project

6.6 ENVIRONMENTAL IMPACTS

The following is a discussion of the environmental impacts of Alternative A and Alternative D relative to the environmental impacts of the Proposed Project. The impacts of all the alternatives including the Proposed Project (Alternative B) are summarized and compared in **Table 6.1**.



Environmental Impact Report
Gnoss Field Airport

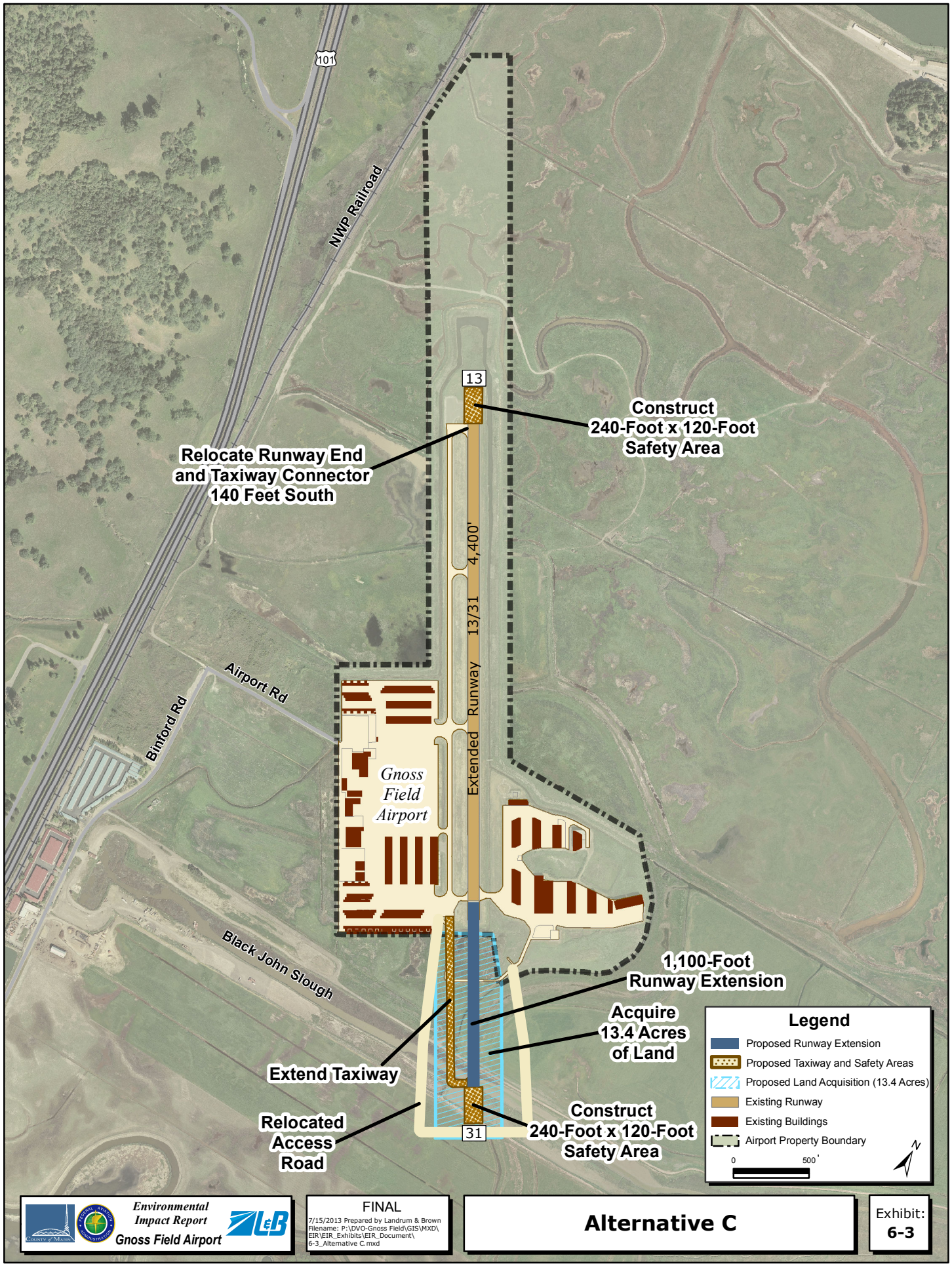
FINAL

7/15/2013 Prepared by Landrum & Brown
Filename: P:\DVO-Gnoss Field\GIS\MXD\EIR\EIR_Exhibits\EIR_Document\6.2_Alternative B Proposed Project.mxd

Alternative B (Proposed Project)

Exhibit: **6-2**

BACK OF EXHIBIT 6-2



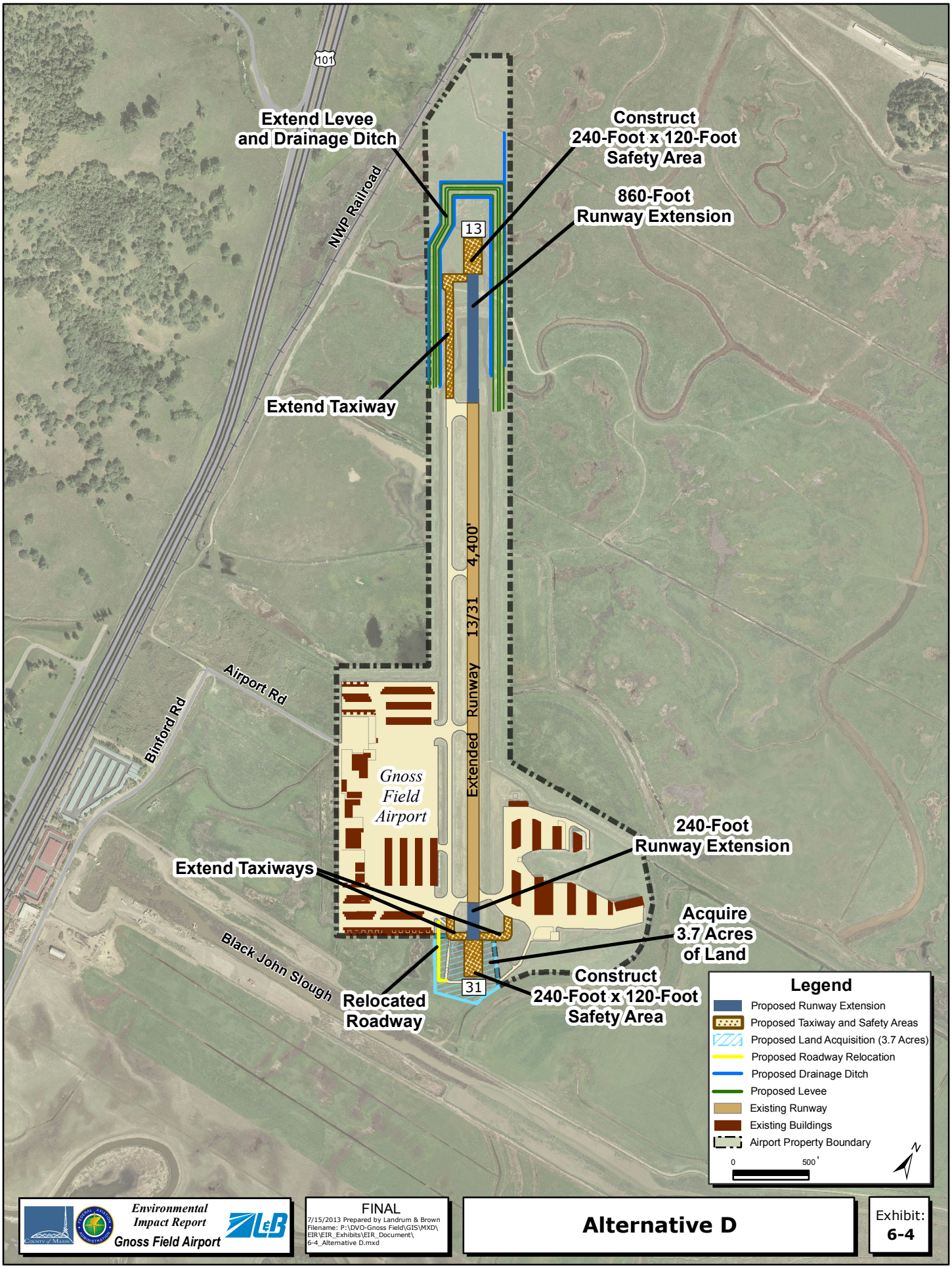
Environmental Impact Report
Gnoss Field Airport

FINAL
7/15/2013 Prepared by Landrum & Brown
Filename: P:\DVO-Gnoss Field\GIS\MXD\EIR\EIR_Exhibits\EIR_Document\6-3_Alternative C.mxd

Alternative C

Exhibit: **6-3**

BACK OF EXHIBIT 6-3



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\6-4_Alternative D.mxd

Alternative D

Exhibit: **6-4**

BACK OF EXHIBIT 6-4

Table 6-1
ENVIRONMENTAL IMPACT SUMMARY MATRIX
Gnoss Field Airport

Impact Category	Alternative A – No Project	Alternative B – Proposed Project	Alternative D
Noise Residential Housing Units or Noise-Sensitive Facilities with 65+ CNEL	None	None	None
Land Use and Planning	No Land Use/Zoning Changes	Lot-line adjustment for Marin County to acquire 0.1 acres of undeveloped land; no change in land use	Acquisition of 3.72 acres of undeveloped land; (currently privately owned) no change in land use
Socioeconomic	No impact	Lot-line adjustment for Marin County to acquire 0.1 acres of undeveloped land; no change in land use	Acquisition of 3.72 acres of undeveloped land; (currently privately owned) no change in land use
Public Services and Utilities Public Service demands Business and economic activity	No impact No impact	No significant impact Temporary increase during construction	No significant impact Temporary increase during construction
Climate and Air Quality	Impacts would not exceed standards	Impacts would not exceed standards	Impacts would not exceed standards
Water Quality	Impacts would not exceed standards	Impacts would not exceed standards	Impacts would not exceed standards
Public Parks and Recreation Facilities	No impact	No significant impact	No significant impact
Historic and Cultural Resources	No impact	No significant impact	No significant impact
Geology, Soils, and Seismicity	No impact	All potential significant impacts can be mitigated to a less-than significant level	All potential significant impacts can be mitigated to a less-than significant level
Mineral Resources	No impact	No impact	No impact

Table 6-1, *Continued*
ENVIRONMENTAL IMPACT SUMMARY MATRIX
Gnoss Field Airport

Impact Category	Alternative A	Alternative B	Alternative D
Vegetation and Wildlife	No impact	Removal of Approximately ~~22.93~~24.47 acres of plant, wildlife, and open water habitat. With implementation of proper procedures, removal would not impact any state or Federally-threatened or endangered species or critical habitat.	Removal of Approximately ~~26.67~~28.29 acres of plant, wildlife, and open water habitat. With implementation of proper procedures, removal would not impact any state or Federally-threatened or endangered species or critical habitat.
Wetlands	No impact	Would impact 11.83 acres of wetlands protected by Section 404 of the CWA, of which 2.66 acres are also protected by the RHA.	Would impact 12.73 acres of wetlands protected by Section 404 of the CWA, of which 2.56 acres are also protected by the RHA.
Floodplains	No impact	Potential significant impacts can be reduced to less-than-significant levels.	Potential significant impacts can be reduced to less-than-significant levels.
Agricultural Resources	No impact	No significant impacts	No significant impact
Energy Supply and Natural Resources	No impact	Increases in demand for fuel and energy can be met by local providers Impact is less-than-significant	Increases in demand for fuel and energy can be met by local providers Impact is less-than-significant
Visual and Aesthetic Quality	No impact	No significant impact	No significant impact
Hazards and Hazardous Materials	No impact	No significant impact	No significant impact
Transportation and Circulation	No impact	Potential short term construction impacts can be reduced to less-than-significant with implementation of recommended mitigation measures	Potential short term construction impacts can be reduced to less-than-significant with implementation of recommended mi

Source: Landrum & Brown, 2011.

LAND USE AND PLANNING

Implementation of Alternative B would require a lot-line adjustment for Marin County to gain exclusive use of 0.1 acres of land to the south of the Airport that would be required for the associated RSA extension. This impact would be less-than-significant because it would not result in changes to existing land use. Implementation of Alternative D would require acquisition of 3.72 acres of land (currently privately owned). Alternative A – No Project would not change the Airport property boundary from the existing condition and therefore, would not require land acquisition.

GEOLOGY, SOILS, AND SEISMICITY

Impacts related to geologic conditions in the vicinity of DVO as a result of implementation of proposed Project would be mitigated to less-than-significant levels through the use of established, proper excavation and construction techniques, as would also be the case with implementation of Alternative D. Alternative A – No Project would not result in excavation or construction activities and therefore, would not result in impacts to geological conditions.

HYDROLOGY AND WATER QUALITY

Impacts as a result of implementation of the Proposed Project would be mitigated to less-than-significant levels through continued use of existing Best Management Practices (BMPs) currently in place at DVO. Alternative D has slightly more impervious surface than the Proposed Project. As a result, the pollutant loadings for some pollutants are slightly higher for Alternative D than the Proposed Project. However, over the increases associated with Alternative D would not change the discharges to a point where they would not be able to be addressed through the BMPs, Storm Water Pollution Prevention Plan, and permits. Alternative A – No Project would not change the hydrologic and water quality conditions from the existing condition and therefore, there would be no resulting impacts.

VEGETATION AND WILDLIFE

Implementation of the Proposed Project would result in removal of ~~22.93~~24.47 acres of plant, wildlife, and open water habitat, which includes ~~10.29 acres High Brackish Marsh wetland, 0.59 acres of perennial drainage, 1.57 acres of ditches/canals, and 0.15 acres of depressional seasonal wetland~~6.88 acres of permanent impact to high brackish marsh/annual grassland, 1.54 acres of permanent impact to open water/ditch canal, and 16.05 acres of temporary impact to various types of habitat. Of the ~~22.93~~24.47 total acres of impacted habitat, there are approximately 11.83 acres of wetlands protected by Section 404 of the Clean Water Act (CWA), including 2.66 acres of wetlands that are also protected by Section 10 of the Rivers and Harbors Act (RHA). Regarding impacts to jurisdictional wetlands, the Proposed Project would require Marin County to obtain from the U.S. Army Corps of Engineers (USACOE), an Individual Permit under Section 404 of the CWA in order to construct the project. Permitting under Section 10 of the RHA would also be required. In addition, compensatory mitigation in the form of

preservation and/or restoration may be required, the details of which would be finalized with the USACOE during the Section 404 and RHA Section 10 permitting processes. However, it should be noted that the impacts to jurisdictional ditch/canal features identified for the Proposed Project are anticipated to be 'replaced in kind' on site in an amount that would be at a minimum of 2:1. Impacts to non-wetland wildlife habitat for migratory birds would be mitigated to less-than-significant levels through the implementation of mitigation measures recommended in the EIR.

Alternative D would remove a greater amount of total plant and wildlife habitat than the Proposed Project, at ~~26.67~~28.29 acres, and would impact a greater amount of jurisdictional wetlands at 12.73 acres protected under Section 404 of the CWA and 2.56 acres protected under Section 10 of the RHA. Permitting and mitigation efforts described for the Proposed Project would also apply to Alternative D. Alternative A – No Project, would not reduce the acreage of plant and wildlife habitat at DVO from existing conditions and therefore, there would be no resulting impacts on wetlands.

TRANSPORTATION AND CIRCULATION

The environmental analysis demonstrates that there would be no impacts to transportation and circulation in the vicinity of DVO as a result of the Proposed Project, or Alternatives A and D.

NOISE

The environmental analysis documents that airport operations associated with the Proposed Project and Alternatives A and D would comply with adopted Federal, State and local County noise standards and guidelines (see Appendix E). The CNEL contours associated with Alternative D would extend further to the south, but still would not result in noise levels that exceeded the standards and guidelines for residential areas and sensitive receptors located south of the airport.

CLIMATE AND AIR QUALITY

The environmental analysis documents that air quality impacts resulting from the Proposed Project and Alternative D would not exceed state or Federal regulatory standards. Alternative A – No Project would not result in changes from the existing conditions (See Appendix F).

HISTORIC AND CULTURAL RESOURCES

The environmental analysis documents that there would be no significant impacts to historic or cultural resources as a result of the Proposed Project, or Alternative A and D (See Appendix H).

VISUAL AND AESTHETIC QUALITY

The environmental analysis found that there would be no significant impacts to visual and aesthetic quality in the vicinity of DVO as a result of the Proposed Project or Alternatives A and D. Under Alternative D, the PAPI at the approach end of Runway 13 would now be located approximately 5.4 miles away from the closest residential area, located in the City of Petaluma. As with the existing condition (Alternative A), it is extremely unlikely that residents of this area would be able to see the PAPI lighting system due to the distance and angle of the lights.

PUBLIC PARKS AND RECREATION FACILITIES

The environmental analysis concluded that there would be no significant impacts to public parks or recreation facilities in the General Study Area as a result of the Proposed Project or Alternatives A and D. Due to the location of the public parks and recreational facilities in relationship to the project area, there would be no impacts to these facilities as a result of the Proposed Project.

PUBLIC SERVICES AND UTILITIES

The environmental analysis concluded that there would be no significant impacts to public services and utilities as a result of the Proposed Project or Alternatives A and D. Benefits of the Proposed Project and Alternative D would be temporary increases in business and economic activity as a result of the construction activities. Because Alternative A – No Project would not result in construction activities, there would be no corresponding temporary increase in business and economic activity Neither the proposed project or Alternatives A and D would result in any significant impacts on public service providers and utilities. As with the proposed project Alternative D would require revisions to the airport's emergency vehicle access plan. Coordination with the Novato Fire Protection District is essential in revising the access plan.

ENERGY AND NATURAL RESOURCES

The environmental analysis concludes that there would be no impacts to the supply of energy and natural resources as a result of the Proposed Project or Alternatives A and D. Increases in demand for fuel and energy that would result from the Proposed Project and Alternative D can be met by local providers. Alternative A – No Project would not increase demand over existing conditions. (See Appendix K, *Energy and Natural Resources*).

SOCIOECONOMIC

Implementation of the Proposed Project may require a 0.1 acre acquisition of currently undeveloped land south of the airport runway. This impact land use, housing and other community activities would be less-than-significant because the land is currently vacant and it would not result in changes to existing land use patterns. Implementation of Alternative D may require acquisition of 3.7 acres of land, which is a greater amount than the Proposed Project, but like the proposed

project there would be no impact on existing land use because the land is vacant. The environmental analysis demonstrates that there would be no additional socioeconomic impacts as a result of the Proposed Project or Alternatives A and D.

HAZARDS AND HAZARDOUS MATERIALS

Implementation of the Proposed Project would extend the existing airport runway to the northwest; as a result the airport runway would be 1,100 feet closer to the Redwood Landfill and Recycling Center (RLI) than with the existing condition. Marin County previously authorized the continued operation of RLI near DVO, but in so doing, identified mitigation measures in Redwood Landfill's Mitigation, Monitoring, and Reporting Program to minimize the attractiveness of the area to wildlife, especially birds, so as to avoid creation of a wildlife aircraft strike hazard at RLI and to prevent RLI from becoming an incompatible land use. Marin County's permit issued to RLI requires implementation of mitigation measures at the landfill including on-going management efforts to prevent minimize bird attractants. If deemed ineffective over time, the mitigation measures will change per Marin County's permit requirements. Therefore, the location and operation of the RLI should not impede the proposed extension of Runway 13/31 at DVO to the northwest.

Alternative D would also bring the northwest runway closer to RLI, however Alternative D would bring the runway end 860 feet closer as opposed to 1,100 feet closer with the Proposed Project. The description of Marin County's permit issued to RLI would adequately reduce the potential bird strikes under Alternative D as with the Proposed Project. . Alternative A – No Project would not change the location of the northwest runway end in relation to RLI from the existing condition.

MINERAL RESOURCES

The environmental analysis found that there would be no impacts to mineral resources as a result of the Proposed Project or Alternatives A and D (See Appendix N).

AGRICULTURAL RESOURCES

The environmental analysis concluded that there would be no significant impacts to agricultural resources as a result of the Proposed Project or Alternatives A and D. None of the soils located within the Detailed Study Area (DSA) meet the criteria for farmland of statewide importance.

6.7 ALTERNATIVES CONSIDERED BUT REJECTED

Upon consideration of the several possible on and off-site project alternatives considered, the EIR concluded that the off-site alternatives, which include the use of other means of transportation, the use of other airports, highway, rail, and telecommunications technology, failed to meet the basic project objectives and were, therefore, rejected from further analysis. The off-site alternatives to satisfy

the project sponsor's objectives for this project, as described in Chapter Two. These rejected alternatives are discussed in this section, along with the reason(s) that they were rejected.

The analysis of alternatives used a two-step screening process. The first step in the screening process was to identify if an alternative could meet the project objectives for the Proposed Project. Alternatives that did not meet the project objectives were excluded from further review. The second step was to further evaluate the remaining alternatives for additional considerations, including significant environmental, operational, and cost considerations. These considerations were associated with direct impacts on existing facilities that would result in substantial redevelopment, or inhibit development or maintenance of existing transportation infrastructure. The following summarizes the considerations used in the alternatives evaluation:

- **Environmental Considerations:** Alternatives with substantially higher adverse impacts beyond those of the Proposed Project were not evaluated in detail. The EIR also recognized the *Clean Water Act* Section 404(b)(1) guidelines, which provides that the U.S. Army Corps of Engineers (USACOE) would only permit the least environmentally damaging practicable alternative.
- **Operational Considerations:** Alternatives that clearly reduced the safe and efficient use of navigable airspace in the U.S. or would derogate the safety of aircraft and airport operations at DVO as compared to existing conditions were not retained for detailed consideration.
- **Cost Considerations:** Alternatives with costs substantially greater than the Sponsor's Proposed Project were considered impracticable.

6.7.1 ALTERNATIVE C: EXTEND RUNWAY TO THE SOUTHEAST BY 1,100 FEET

Alternative C includes an extension of Runway 13/31 to the southeast by 1,100 feet for a total runway length of 4,400 feet. In addition, this alternative would include extension of the ~~corresponding~~ parallel taxiway to match the length of the runway; inclusion of FAA standard 240-foot RSA at each end of the runway in addition to the 1,100 foot runway extension; corresponding realignment of drainage channels to drain the extended runway and taxiway; corresponding levee extension to protect the extended runway and taxiway from flooding; corresponding relocation of the access road south of the runway, which extends from the west side to the east side of the Airport, to keep the access road outside of the RSA; and ~~re-programming~~relocation of the navigational aids that pilots use to land at the Airport to reflect the extended runway. Exhibit 6-3*, Alternative C,* presents a graphic depiction of Alternative C. Preliminary evaluation of Alternative C is as follows:

Preliminary environmental analysis demonstrated that implementation of Alternative C would result in extensive impacts to the water resources to the south of the Airport (Black John Slough) and to wetlands. It must also be considered that, relative to the CWA Section 404 (b)(1) guidelines, the USACOE would only permit the least damaging practicable alternative. In addition, there are potential plant

and wildlife habitat impacts due to the alternative and it would move the southeast runway end closer to protected wildlife areas to the southeast of the Airport. Further, because the landing threshold for Runway 13 would be closer to the residential areas to the south of the Airport, aircraft approaching to land at DVO from the south would be at a lower altitude on approach than is experienced with the existing runway when passing near the residential areas to the south of the Airport; this could potentially increase aircraft approach noise levels in those communities. Alternative C would also be the most expensive alternative due to the need to acquire approximately 13 acres of land (currently privately owned) and for additional mitigation costs.

Alternative C would meet the stated objective to increase the length of the existing runway at DVO to allow the existing aircraft to operate efficiently during all weather conditions. However, this alternative would require greater amounts of fill of waters and wetlands when compared to Alternatives B and D, including the necessity to fill portions of the waters of Black John Slough. This alternative also requires land acquisition for construction and would require more aquatic mitigation than the Proposed Project or Alternative D. As the same project purpose can be accomplished by implementation of the Proposed Project or Alternative D (described previously), and guidelines of the CWA, Section 404, (b)(1) would only allow the USACOE to permit the least environmentally damaging practicable alternative, it is not likely that the USACOE would issue to Marin County a CWA, Section 404 permit to construct Alternative C, when the Proposed Project and D have been identified as practicable. Therefore, Alternative C has been rejected from further consideration.

6.7.2 OFF-SITE ALTERNATIVES

6.7.2.1 Use of Other Airports

The use of other airports in the region is examined to determine if the relocation of operations to another airport is feasible and if it would postpone, reduce, or eliminate the need for extending the existing runway at DVO.

Airports across the country function as an inter-related system. To coordinate and fund this system, the FAA developed the National Plan of Integrated Airport Systems (NPIAS), a system of 3,344 of the nation's 5,280 aviation facilities that are open to the public. The aviation facilities included in the NPIAS are significant to the national aerospace system and eligible to receive Federal funding. One of the guiding principles of the NPIAS is that: "The airport system should be extensive, providing as many people as possible with convenient access to air transportation, typically by having most commuters with no more than 20 miles of travel to the nearest NPIAS airport."[2] This is particularly true for general aviation airports, which tend to serve the communities immediately adjacent to the airport.

[2] National Plan of Integrated Airport Systems (2007-2011), Federal Aviation Administration, 2006. Accessed online at: http://www.faa.gov/airports_airtraffic/airports/planning_capacity/

DVO is a NPIAS airport and provides general aviation access to the City of Novato, as well as other cities to the south of the Airport (including San Rafael, Larkspur, Corte Madera, and Sausalito) and generally for unincorporated areas of Marin County. There are six other airports serving general aviation activity that are located within a reasonable driving distance of DVO, including Sonoma Valley Airport (0Q3), Petaluma Municipal Airport (O69), Napa County Airport (APC), Half Moon Bay (HAF), Charles M. Schul~~t~~z Sonoma County Airport (STS), and San Rafael Airport (CA35). Of these regional general aviation facilities, three have runways that are shorter than 4,400 feet (0Q3, O69, and CA35) and three have runways that are longer than 4,400 feet (APC, HAF, and STS).

Table 6-2 summarizes the major facilities and key aviation activity characteristics of each of the aforementioned airports as compared to DVO. The location of each of these airports is shown on **Exhibit 6-5, *Airports in the Region***.

Petaluma, Napa County, and Half Moon Bay are designated by the FAA as reliever airports (as is Gnoss Field Airport). Each of the Bay Area reliever airports provides runway capacity and landside support facility relief to San Francisco International Airport (SFO) and Oakland International Airport (OAK). As such, these airports reduce airspace congestion and improve the safety of the runway system at both airports (SFO and OAK). Reliever airports can also reduce airspace capacity conflicts with large passenger aircraft that typically serve both SFO and OAK. As major commercial service international airports, SFO and OAK prohibit the full range of general aviation flight activities that designated general aviation airports allow, such as flight training activities. Therefore, the use of SFO and OAK are not alternatives for use of general aviation airports.

SONOMA VALLEY AIRPORT (0Q3)

Sonoma Valley Airport is a privately owned general aviation airport that is open to the public and serves the Sonoma Valley.~~Sonoma Valley Airport, classified as a general aviation airport, is a privately-owned airport that is open for public use and primarily serves the populated areas of the Sonoma Valley, including the cities of Sonoma and Schellville, and unincorporated Sonoma County.~~ The airport is located approximately seven nautical miles and 16 driving miles north of DVO. Vehicle access is provided by State Highways SR-37 and SR-121. The airport has two runways; one runway is 2,700 feet in length and the other is 1,500 feet in length. These runway lengths limit the traffic at Sonoma Valley to light aircraft only (i.e. single and multi-engine piston aircraft, almost no turbine activity). The 1997 operations report from Sonoma Valley states that 330 aircraft were based on the field and undertook 11,500 operations. In 2007, there were 16,060 operations and 123 based aircraft.

Given the proximity of Sonoma Valley Airport to DVO and the Novato area, it is possible that pilots who cannot efficiently use DVO could operate from this airport if it had a runway long enough to accommodate their needs. Because the runways at Sonoma Valley Airport are considerably shorter than the runway at DVO, the airport in its current configuration would not meet the stated need for a runway of 4,400 feet in length. Other factors that reduce the feasibility of this option include

airport ownership and site constraints, as well as environmental considerations. The issue of airport ownership is important because Marin County (the Sponsor of this project) does not own or operate Sonoma Valley Airport. Therefore, it is not reasonable to assume that Marin County would invest in infrastructure for the extension of the runway at that airport because it has no authority to implement any improvements at that airport. In addition, FAA and Marin County do not have the authority to divert air transportation activity from DVO to other area airports. Site constraints due to the proximity of surrounding roadways and active-use of surrounding private property limit this airport's ability to physically expand beyond its current property boundary. Environmental considerations would also need to be addressed. Relocating operations from DVO to Sonoma Valley Airport would result in longer automobile commutes for people located south of DVO, which is the primary population area served by DVO. As a result of longer commutes, an increase in air emissions would occur.

The use of Sonoma Valley Airport as an alternative does not meet the stated need to provide 4,400 feet of runway to allow existing aircraft, as represented by the critical aircraft at DVO, to operate at Maximum Gross Take Off Weight under hot weather and other adverse weather conditions, because the longest existing runway is shorter than 4,400 feet.~~the existing aircraft to operate efficiently during all weather conditions.~~ Furthermore, it is not reasonable to assume that Sonoma Valley Airport would be expanded to offer a longer runway based on the airport ownership issues and site constraints. Finally, environmental considerations such as increased air emissions would result from such an action. In addition, the airport is located in close proximity to sloughs and wetland areas to the west/southwest, which limit its ability to expand beyond the current property boundary. Based on this information, using Sonoma Valley Airport to address the needs of DVO is not a reasonable, feasible, prudent, or practicable alternative to the Sponsor's Proposed Project and will not be carried forward for more detailed environmental analysis.

PETALUMA MUNICIPAL AIRPORT (O69)

Petaluma Municipal Airport, classified as a reliever airport, is owned by the City of Petaluma and primarily serves the residents of Petaluma. This airport is located approximately 7 nautical miles and 14 driving miles north of DVO. Vehicle access is provided by Highway 101. Petaluma Municipal Airport has one runway that is 3,600 feet in length and 75 feet in width. Like DVO, the Airport's runway length limits the gauge of aircraft that are able to use the airport to mainly piston engine aircraft and a few turbine aircraft operations. In 2007, the airport reported 53,200 operations and 203 based aircraft.

Table 6-2
AIRPORTS SERVING GENERAL AVIATION THAT ARE CLOSEST TO GNOSS FIELD AIRPORT
Gnoss Field Airport

Airport Name		Gnoss Field	Sonoma Valley	Petaluma Municipal	Napa County	Half Moon Bay	Charles M. Schulz - Sonoma County	San Rafael Airport
Airport Code		**DVO**	**0Q3**	**O69**	**APC**	**HAF**	**STS**	**CA35**
NPIAS Role[2]		Reliever	General Aviation	Reliever	Reliever	Reliever	Commercial Service - Nonhub Primary	GA Private Use
Distance from DVO (in driving miles)		0	16	14	29	49	36	11
Distance from DVO (in nautical miles)		0	7	7	14	38	25	8
Control Tower		NO	NO	NO	YES	NO	YES	NO
Acreage		90	79	220	804	325	1,014	100
Number of Runways		1	2	1	3	1	2	1
Runway Dimensions (Length x Width; in feet)		13-31: 3,300x75	7-25: 2,700x45 17-35: 1,500x50	11-29: 3,600x75	6-24: 5,007x150 18L-36R: 2,510x75 18R-36L: 5,931x150	12-30: 5,000x150	14-32: 5,119x150 1-19: 5,002x100	4-22: 2,140x30
ILS		NO	NO	NO	NO	NO	YES	NO
Hangars/ Buildings		196	43	27	25	50	261	110
Annual Operations[1]	**FY 1997**	n/a	11,500	50,200	141,922	60,150	134,732	n.a.
	FY 2007	85,058	16,060	53,200	122,623	60,150	132,739	n.a.
Based Aircraft[1]	**FY 1997**	298	330	203	247	70	413	n.a.
	FY 2007	296	123	203	228	70	415	100

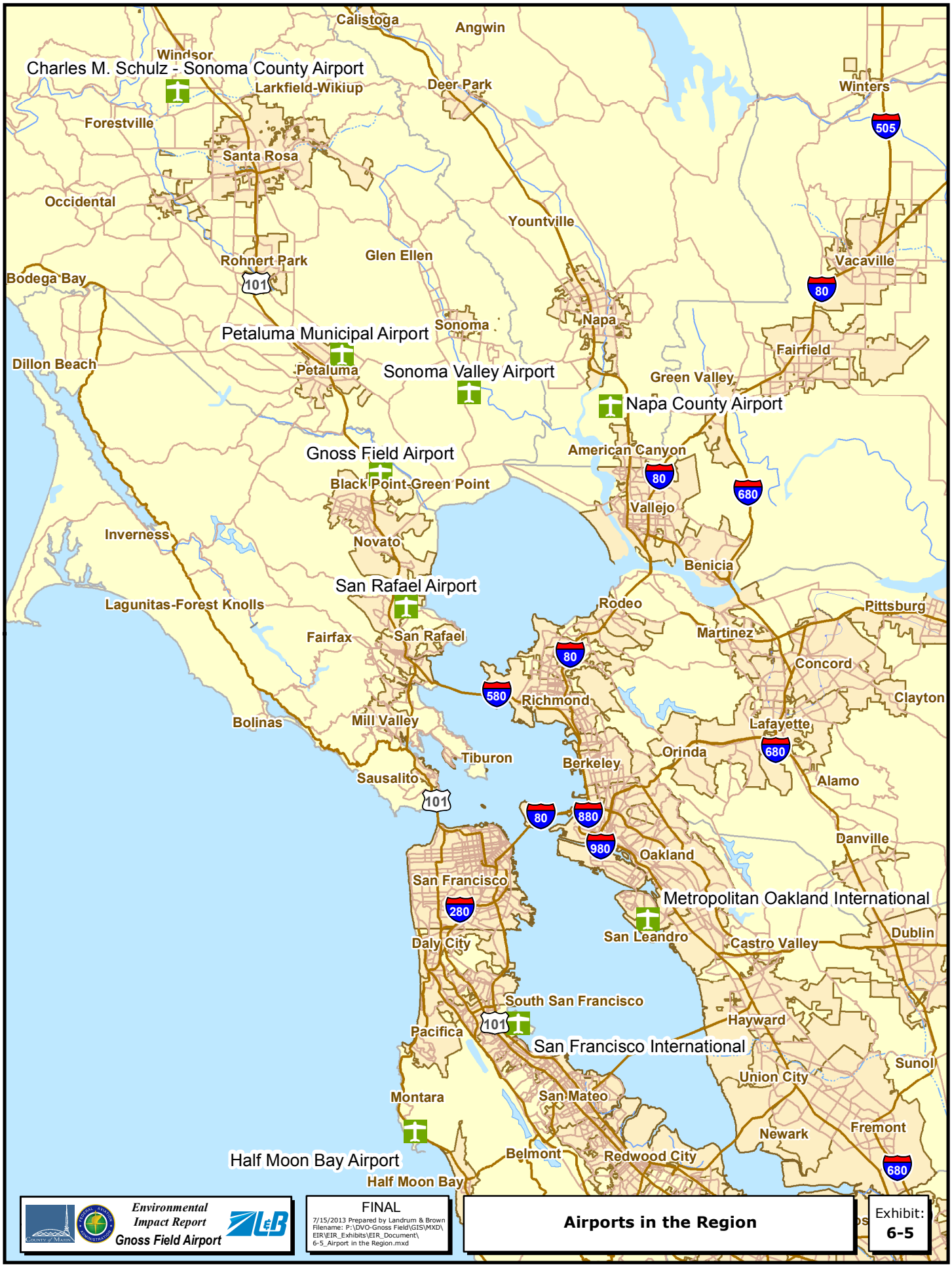
1 Annual operations and based aircraft data was obtained from the FAA TAF for all airports with the exception of Sonoma Valley. Sonoma Valley Airport is not included in the TAF so operations and based aircraft counts were obtained from airnav.com and *Regional Airport System Plan, General Aviation Element, Final Report,* Regional Airport Planning Committee, June 2003.

2 NPIAS Role defined in National Plan of Integrated Airport Systems (NPIAS)

- Commercial service airports are defined as public airports receiving scheduled passenger service and having 2,500 or more enplaned passengers per year.
- Nonhub Primary airports are Commercial Service airports that enplane less than 0.05 percent of all commercial passenger enplanements but have more than 10,000 annual enplanements.
- General Aviation airports do not receive scheduled commercial service or do not meet the criteria for classification as a commercial service airport.
- Reliever airports are high-capacity general aviation airports in major metropolitan areas.

Sources: Landrum & Brown Analysis, FAA Form 5010-1; FAA TAF, airnav.com

THIS PAGE INTENTIONALLY LEFT BLANK



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\6-5_Airport in the Region.mxd

Airports in the Region

Exhibit: **6-5**

BACK OF EXHIBIT 6-5

Given the proximity of Petaluma Municipal Airport to DVO and the Novato Area, it is possible that pilots who cannot efficiently use DVO could operate from this airport if it had a runway long enough to accommodate their needs. While Petaluma Municipal Airport does have a longer runway than DVO, it falls short of the stated need of 4,400 feet. Further, the current Airport Layout Plan (ALP) on file with FAA does not indicate a proposed long term runway extension at Petaluma Municipal Airport. Marin County does not own or operate Petaluma Municipal Airport. Therefore, it is not reasonable to assume that Marin County would invest in infrastructure for the extension of the runway at that airport because it has no authority to implement any improvements at that airport. In addition, FAA and Marin County do not have the authority to divert air transportation activity from DVO to other area airports.

Other factors that reduce the feasibility of this option include environmental considerations. Relocating operations from DVO to Petaluma Municipal Airport would result in longer automobile commutes for people located south of DVO, which is the primary population area served by DVO. As a result of longer commutes, an increase in air emissions would occur along the Highway 101 corridor.

The use of Petaluma Municipal Airport as an alternative does not meet the stated need to provide 4,400 feet of runway to allow existing aircraft, as represented by the critical aircraft at DVO, to operate at Maximum Gross Take Off Weight under hot weather and other adverse weather conditions.~~the existing aircraft to operate efficiently during all weather conditions.~~ Furthermore, it is not reasonable to assume that Petaluma Municipal Airport would be expanded to offer a longer runway as their current ALP on file with FAA does not indicate a proposed long term runway extension. Finally, environmental considerations such as increased air emissions would result from such an action. Based on this information, using Petaluma Municipal Airport to address the needs of DVO is not a reasonable, feasible, prudent, or practicable alternative to the Sponsor's Proposed Project and will not be carried forward for more detailed environmental analysis.

NAPA COUNTY AIRPORT (APC)

Napa County Airport is located 14 nautical miles and 29 driving miles east of DVO. APC is designated as a reliever airport by the FAA. It is owned by Napa County. Vehicle access is provided by State Highways SR-37 and SR-29. The airport has three runways measuring 5,007 feet, 2,510 feet, and 5,931 feet in length. Unlike DVO or the other airports mentioned thus far, these runway lengths allow APC to serve a significant amount of general aviation turbine aircraft operations without restrictions. APC is also the closest airport that is served by an FAA Air Traffic Control Tower (ATCT), thus enabling the airport to operate at a higher capacity. In 2007, APC reported a total of 122,623 annual operations and had 228 based aircraft.

From an operational standpoint for pilots, given the proximity of Napa County Airport to DVO in nautical miles, it is possible that pilots who cannot efficiently use DVO could operate from this airport for basic needs such as refueling while enroute to another ultimate destination (i.e., not DVO or APC). However, for those

travelling specifically to/from Novato, the driving distance to Napa County Airport makes it is less likely that this airport would be an efficient alternate destination. Relocating operations from DVO to Napa County Airport would result in longer automobile commutes for people located south of DVO, which is the primary population area served by DVO. As a result of longer commutes, an increase in air emissions would occur.

Napa County Airport has two runways with lengths longer than 4,400 feet. However, because of increased drive time and the local demand in the Novato area the use of Napa Airport is not a reasonable alternative to meet the stated need of providing 4,400 feet of runway to allow existing aircraft, as represented by the critical aircraft at DVO, to operate at Maximum Gross Take Off Weight under hot weather and other adverse weather conditions. In addition, FAA and Marin County do not have the authority to divert air transportation activity from DVO to other area airports.~~the existing aircraft to operate efficiently during all weather conditions.~~ Furthermore, environmental considerations such as increased air emissions would result from use of Napa County Airport over DVO. Based on this information, using Napa County Airport to address the needs of DVO is not a reasonable, feasible, prudent, or practicable alternative to the Sponsor's Proposed Project and will not be carried forward for more detailed environmental analysis.

HALF MOON BAY AIRPORT (HAF)

Half Moon Bay Airport is located 38 nautical miles and 49 driving miles south of DVO. Vehicle access is provided by Highway 101 for travel across the Golden Gate Bridge, and then continuing on Highway 101 or State Highway CA-1 through the City of San Francisco. HAF is owned by San Mateo County and has been designated by FAA as a reliever airport. HAF has one runway measuring 5,000 feet in length, which allows HAF to serve a substantial number of the business jet aircraft. HAF does not have an FAA ATCT. In 2007, HAF reported a total of 60,150 annual operations and had 70 based aircraft.

From an operational standpoint for pilots, given the distance of HAF from DVO in nautical miles, it is possible that pilots who cannot efficiently use DVO could operate from this airport for basic needs such as refueling while enroute to another ultimate destination, although there are other airports with similar services located closer to DVO. Further, for those travelling specifically to/from Novato, the extensive driving distance to HAF makes it is unlikely that this airport would be an efficient alternate destination. Relocating operations from DVO to HAF would result in significantly longer automobile commutes for people located south of DVO, which is the primary population area served by DVO. As a result of longer commutes, an increase in air emissions would occur.

Half Moon Bay Airport has one runway with a length longer than 4,400 feet. However, because of increased drive time and the local demand in the Novato area the use of Half Moon Bay Airport is not a reasonable alternative to meet the stated need of providing 4,400 feet of runway to allow existing aircraft, as represented by the critical aircraft at DVO, to operate at Maximum Gross Take Off Weight under hot weather and other adverse weather conditions. In addition, FAA and Marin

County do not have the authority to divert air transportation activity from DVO to other area airports.~~the existing aircraft to operate efficiently during all weather conditions.~~ Furthermore, environmental considerations such as increased air emissions would result from use of Half Moon Bay Airport over DVO. Based on this information, using Half Moon Bay Airport to address the needs of DVO is not a reasonable, feasible, prudent, or practicable alternative to the Sponsor's Proposed Project and will not be carried forward for more detailed environmental analysis.

CHARLES M. SCHULZ–SONOMA COUNTY AIRPORT (STS)

Charles M. Schulz-Sonoma County Airport is located 25 nautical miles and 36 driving miles northwest of DVO. Vehicle access is provided by Highway 101. The airport is a non-hub primary commercial service airport that accommodates both general aviation and commercial service aircraft operations.~~It is designated as a general aviation airport by the FAA.~~ STS has two runways measuring 5,119 feet and ~~5,004~~ 5002 feet in length.[3] As a result, STS has sufficient runway length to accommodate most general aviation turbine aircraft without restrictions. STS has an FAA ATCT. This airport served 132,739 operations in 2007 and had 415 based aircraft.

From an operational standpoint for pilots, given the distance of STS from DVO in nautical miles, it is possible that pilots who cannot efficiently use DVO could operate from this airport for basic needs such as refueling while enroute to another ultimate destination, although there are other airports with similar services located closer to DVO. Further, for those traveling specifically to/from Novato, the extensive driving distance to STS makes it is less likely that this airport would be an efficient alternate destination. Relocating operations from DVO to STS would result in longer automobile commutes for people located south of DVO, which is the primary population area served by DVO. As a result of longer commutes, an increase in air emissions would occur.

Charles M. Schulz-Sonoma County Airport has two runways with lengths longer than 4,400 feet. However, because of increased drive time and the local demand in the Novato area, the use of Charles M. Schulz–Sonoma County Airport is not a reasonable alternative to meet the stated need of providing 4,400 feet of runway to allow existing aircraft, as represented by the critical aircraft at DVO, to operate at Maximum Gross Take Off Weight under hot weather and other adverse weather conditions. In addition, FAA and Marin County do not have the authority to divert air transportation activity from DVO to other area airports.~~the existing aircraft to operate efficiently during all weather conditions.~~ Furthermore, environmental considerations such as increased air emissions would result from use of Charles M. Schulz–Sonoma County Airport over DVO. Based on this information, using Charles M. Schulz–Sonoma County Airport to address the needs of DVO is not a reasonable, feasible, prudent, or practicable alternative to the Sponsor's Proposed Project and will not be carried forward for more detailed environmental analysis.

[3] Sonoma County is currently completing a Final Environmental Assessment to extend both runways; one to 6,000 feet long and the other to 5,202 feet long in order to meet FAA Airport Design Standards for RSA and to decouple the overlapping runway ends as recommended by the FAA's Runway Safety Action Team.

SAN RAFAEL AIRPORT (CA35)

San Rafael Airport is a privately owned - private use airport with a 2,140-foot long by 30-foot wide runway. This airport is not open for public use.~~San Rafael Airport is a private airport with a 2,140 ft. runway.~~ The existing runway length at CA35 makes it unable to accommodate most of the twin engine aircraft that currently operate at DVO. There are 100 aircraft based on the field, all of which are single engine piston aircraft. The airport is located eight nautical miles south of DVO.

Given the proximity of San Rafael Airport to DVO and the Novato Area, it is possible that pilots who cannot efficiently use DVO could operate from this airport if it had a runway long enough to accommodate their needs. Currently it falls short of the stated need of 4,400 feet. Further, CA35 is a private airport and therefore is not required to provide access to the public as does DVO. Neither the FAA nor Marin County have the authority to divert air transportation activity from DVO to other area airports.

The use of San Rafael Airport as an alternative does not meet the stated need to provide 4,400 feet of runway to allow existing aircraft, as represented by the critical aircraft at DVO, to operate at Maximum Gross Take Off Weight under hot weather and other adverse weather conditions.~~the existing aircraft to operate efficiently during all weather conditions.~~ Based on this information, using San Rafael Airport to address the needs of DVO is not a reasonable, feasible, prudent, or practicable alternative to the Sponsor's Proposed Project and will not be carried forward for more detailed environmental analysis.

6.7.3 OTHER MODES OF TRANSPORTATION AND/OR TELECOMMUNICATIONS

Other modes of transportation or communication that were considered as alternatives to the Proposed Project include highway travel, conventional and high-speed rail travel, and telecommunications. These modes or alternatives to transportation were considered for their potential to meet the Project Sponsor's Objective of the proposed runway extension at DVO.

6.7.3.1 Highway

People choose to use DVO for three primary purposes – flight training, recreation, and business travel. In terms of an alternative to using DVO, the first two uses (flight training and recreation) include air travel as an inherent part of the activity. Flight training is most effectively conducted by participating in a flight school and practicing takeoffs and landings. Recreational flyers enjoy flying as an activity and choose to spend time sightseeing from the air or visiting other airports. Neither of these uses can be replaced by driving.

Business travel can potentially be accomplished through driving, although there are general limits to how far people will drive for business due to the value of their time. When looking at commercial air travel, most business travelers will choose air travel when the driving distance is between 250 and 500 miles. Beyond

500 miles (or roughly one 10-hour day of driving), business travelers will almost always choose air travel over driving. The general threshold for driving time becomes even smaller when you start to consider business travelers that have the resources to charter private aircraft, which is done at DVO. These travelers choose DVO over Oakland International and San Francisco International Airports primarily because of the ability to maximize their time due to the on-demand nature of this service. Given this, it is reasonable to assume that the distance DVO business travelers are willing to drive is less than the typical business traveler using commercial airlines.

While it is feasible that people using DVO could choose to drive to their destination versus fly, it is not reasonable to assume that this would reduce or eliminate the need due to the nature of the flight activity at DVO.

The highway alternative does not meet the stated objectives to increase the length of the existing runway at DVO to allow allow existing aircraft, as represented by the critical aircraft at DVO, to operate at Maximum Gross Take Off Weight under hot weather and other adverse weather conditions.~~the existing aircraft to operate efficiently during all weather conditions.~~ Therefore, the use of a highway as a means to address the needs at DVO is not a reasonable, prudent, or practicable alternative to the Proposed Project and will not be carried forward for more detailed environmental analysis.

6.7.3.2 Conventional and High-Speed Rail

The use of rail as an alternative to air travel is examined below.

CONVENTIONAL RAIL

Amtrak

Amtrak provides~~primarily serves~~ conventional rail travel in the United States. A review of Amtrak service finds that Amtrak does not provide service to/from Marin County.[1] The closest Amtrak stations are located in Oakland and Martinez, CA, which are 35 miles and 40 miles from Novato, respectively. The lack of passenger rail service in Marin County makes Amtrak service an unacceptable alternative to business air transport to/from DVO.

Sonoma Marin Area Rail Transit Project

The Sonoma-Marin Area Rail Transit District (SMART) project includes development of a 70-mile-long passenger railroad along the existing Northwestern Pacific Railroad right of way through Marin and Sonoma counties. The rail line will run from Cloverdale, at the north end of Sonoma County, to Larkspur, where the Golden Gate Ferry connects Marin County with San Francisco. Stations are to be located at major population and job centers of the North Bay, including San Rafael, Novato, Petaluma, Cotati, Rohnert Park, Santa Rosa, Windsor, and Healdsburg. The project is currently in the building stage, which involves selection of vehicles, station construction, and final engineering work. The estimated project cost is

$690 million, the majority of which would be funded by a voter-approved one-quarter percent sales tax increase. Since that vote, the economic downturn has reduced SMART's projected revenues by several hundred million dollars over the 20-year life of the sales tax, leaving the agency short of the money needed to complete the project as originally envisioned. Consequently, SMART's Board of Directors has decided to build in stages. The first segment, 37 miles from downtown San Rafael with Railroad Square in Santa Rosa, will connect the two largest cities in the North Bay and all of the cities in between. Construction on this segment began in 2011, with passenger train service scheduled to begin in late 2014. Future segments, ultimately completing the project from Larkspur to Cloverdale, will be built as additional revenues become available.[4] However, the limits of the rail service to these select locations make it an unacceptable alternative to air transport to/from DVO.

HIGH-SPEED RAIL

The California High Speed Rail Authority is studying the potential for developing high-speed passenger rail service in California. The proposed California high-speed train system encompasses more than 800 route miles and would provide intercity travel in California between the major metropolitan centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. The proposed high-speed train would be capable of operating speeds up to 220 miles per hour (mph) and designed for an ultimate speed of 250 mph on a fully grade-separated alignment with an expected trip time from San Francisco to Los Angeles of two hours and forty minutes, or less. Interface with commercial airports, mass transit, and the highway network would be provided as part of the system. A Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System was completed in August 2005 and a Final Bay Area to Central Valley High-Speed Train (HST) Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was completed in May 2008. Preliminary design is currently underway. The project would be built in phases with completion anticipated in 2033.[5]

Ridership forecasts for the California HST Project estimate 88–117 million passengers annually by 2030 for the entire 800-mile high-speed train network. Of the 33 million air trips forecast to be made in the year 2030, it is forecast that approximately 12 million would be attracted to high-speed trains, bringing the level of air traffic in California back to the levels of 2000, slightly higher than it is today. In other words, it is estimated that most of the growth in air traffic would be diverted, leaving airport capacity for international and out-of-state flights. Of the 911 million auto travelers forecast in 2030 to make vehicle trips between the points to be served by the high-speed rail, approximately 6 percent or 50 million would be attracted to high-speed trains. Within the regions that have several stations

[4] *Sonoma Marin Area Rail Transit Project*, On-line at: www.sonomamarintrain.org Retrieved September 26, 2011.

[5] California High Speed Rail 2012 Draft Business Plan Fact Sheet dated November 1, 2011, on-line at http://www.cahighspeedrail.ca.gov/Business_Plan_reports.aspx accessed November 3, 2011

(Los Angeles Basin, the San Francisco Bay Area, and San Diego County), it is forecast that another 25 million auto trips, less than one percent of the local urban area auto travel, would be eliminated in favor of the use of high-speed rail.[6]

The current plans for this high-speed rail line do not include a direct connection to Marin County. Therefore, business travelers that currently use DVO to fly to California destinations that would be served by this rail line would have to drive into San Francisco to board the train. As discussed above for driving, the DVO business traveler values time and the ability to access specific locations quickly. The likelihood of the California high-speed rail reducing the demand at DVO in any meaningful way is unlikely given that it would take additional time to drive to the station and the destinations are relatively limited.

The use of rail service as an alternative does not meet the stated purpose to increase the length of the existing runway at DVO to allow existing aircraft, as represented by the critical aircraft at DVO, to operate at Maximum Gross Take Off Weight under hot weather and other adverse weather conditions~~the existing aircraft to operate efficiently during all weather conditions~~, or the stated need to address insufficient runway length at DVO. Nor would the availability of a local transit rail system, and a state high-speed rail system, be expected to meet the needs of DVO users. The local transit system is designed to compete with vehicle use on local highways during peak commute and shopping periods. The local rail system would not provide service to typical DVO aircraft destinations. The same is true of the high-speed rail system. The high-speed rail system is designed to link major cities in California, and is not expected to provide service to typical DVO aircraft destinations. While high-speed rail is planned for the San Francisco Bay Area at some point in the near future, it is not a prudent, reasonable, feasible, or practicable alternative to the Sponsor's Proposed Project and will not be carried forward for more detailed environmental analysis.

6.7.3.3 Telecommunications

The potential for telecommunications to affect the need for business travel has been studied since two-way video-conferencing technology became available on the commercial market in the 1980s. Constantly emerging technology continues to improve the availability, affordability, reliability, and speed of voice and data communication. Continued technological advances and the widespread installation of fiber optics and other communications technology will continue to make telecommunication alternatives more widely available.

A survey completed in 2003 by American Express polled 800 business travelers from eight countries including the United States. Findings of this survey indicate:

> *…travelers value business travel as a tool to maintain and develop customer relationships: asked if business travel is essential to growing a business, more the 89 percent of the respondents agreed, either strongly or slightly. A majority of respondents from each country agreed on some level.*

[6] California High Speed Rail Authority, on-line at: http://www.cahighspeedrail.ca.gov/ Retrieved October 14, 2011.

> *The American Express survey also shows that some business travelers use Web meetings and teleconferencing in place of travel, but the majority clearly considers in-person meetings with clients or business associates superior. More than 35 percent say that this year (2003), they have used such technology (virtual meeting) – either frequently or occasionally – instead of traveling. However, a combined 65 percent say they do not do virtual meetings very much or at all.*
>
> *Asked if teleconferencing or web facilities offer an adequate substitute to face-to-face meetings, nearly two thirds-(65 percent) said no, while 35 percent differed. …Even among those who gave equal consideration to virtual meetings and in-person meetings, 75 percent said that telecommunication is only appropriate for conferring for an hour or less.*[7]

Evidence indicates that the use of telecommunications and video-conferencing may be increasing to satisfy business needs, but there is no indication that it would satisfy all business needs and thereby reduce the need for travel. It may complement or supplement travel, but is not seen as a substitute by a majority of the public for business travel. In addition, the impact of improvements in the communication field would have little or no effect on flight training and recreational flyers.

This alternative does not meet the stated purpose to increase the length of the existing runway at DVO to allow the existing aircraft to operate efficiently during all weather conditions, or the stated need to address insufficient runway length at DVO. While communication technology may reduce the demand for air travel by a small amount, it would not replace the need for air travel. Therefore, telecommunication technology is not a prudent, reasonable, feasible, or practicable alternative to the Sponsor's Proposed Project and will not be carried forward for more detailed environmental analysis.

6.8 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the analysis presented in Chapter Four, *Environmental Setting, Environmental Impacts, Cumulative Impacts, and Mitigation Measures*, of this EIR and summarized in this chapter, it has been determined that the Proposed Project, which involves an 1,100-foot extension of the runway to the northwest, is the environmentally superior alternative. The Proposed Project would impact lesser acreages of plant and wildlife habitat, and lesser acreages of jurisdictional wetlands than Alternative D. The Proposed Project may also require a smaller amount of land acquisition than Alternative D. Although Alternative A – No Project would result in no impacts, it would do so through no change to the existing conditions.

[7] http://home3.americanexpress.com/corp/pc/2003/sacrificing_comfort.asp. *International Business Travelers Sacrificing Comfort For Low Prices, American Express Survey Shows,* August 2003, Conducted by The Practice. Retrieved September 20, 2006.