

## **4.10 AESTHETIC AND VISUAL RESOURCES**

This section analyzes and discusses the potential impacts to aesthetics and visual resources due to the Proposed Project.

### **4.10.1 ENVIRONMENTAL SETTING**

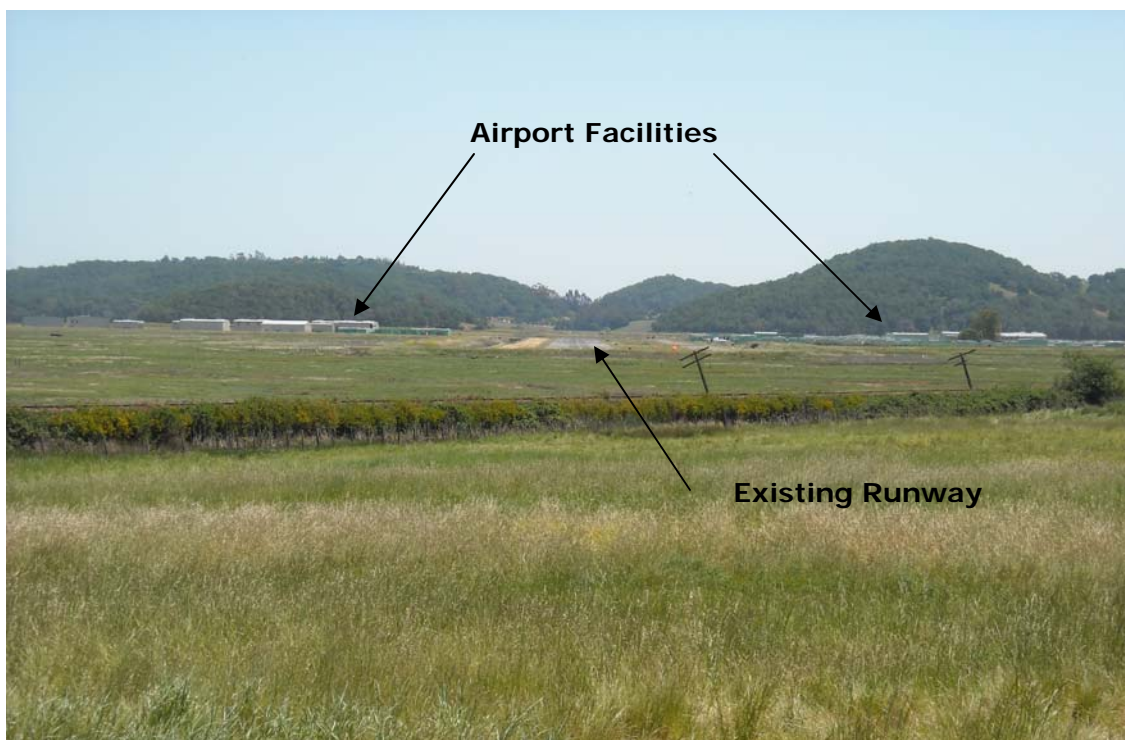
#### **4.10.1.1 Existing Conditions**

##### **VISUAL**

The Gness Field Airport (DVO or Airport) is currently surrounded by mostly vacant undeveloped lands as discussed in Section 4.2, *Land Use and Planning* and shown on Exhibit 4.2-1, *Existing Land Use* and Exhibit 4.2-2, *Future Land Use* in that section. The Airport can currently be seen from residential areas to the south, the park areas to the northwest, and from motorists on Highway 101 both during the day and night. Existing views of the site are of an Airport surrounded primarily by vacant land. **Figures 4.10-A** and **Figure 4.10-B** show the views of the existing Airport from the north and the south respectively.

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**Figure 4.10-A  
EXISTING VIEW OF AIRPORT FROM THE NORTH**



**Figure 4.10-B  
EXISTING VIEW OF AIRPORT FROM THE SOUTH**



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## **LIGHTING**

### Visual Glideslope Indicator

The Visual Glideslope Indicator is a system of lights arranged to provide visual descent guidance information to pilots during the landing approach to a runway.<sup>1</sup> One such system that is in use at DVO, a Precision Approach Path Indicator (PAPI), provides a specific light pattern when the aircraft is on the desired descent path to the touchdown point. A diagram of a PAPI lighting system is shown in **Figure 4.10-C**.

A PAPI system includes sets of two or four red-to-white lighting units installed at the approach end of a runway in a single horizontal row.<sup>2</sup> The system is located perpendicular to the runway centerline, at a distance from the threshold that provides the proper threshold crossing height and obstacle clearance.

Each lighting unit projects a split beam of light; the upper segment is white, and the lower segment is red. The transition from white to red, or vice versa, occurs within a vertical angle of five minutes of arc at the beam center and results in a well-defined corridor of light consisting of white (top) and red (bottom) beams. These systems have an effective visual range of about five miles during the day and

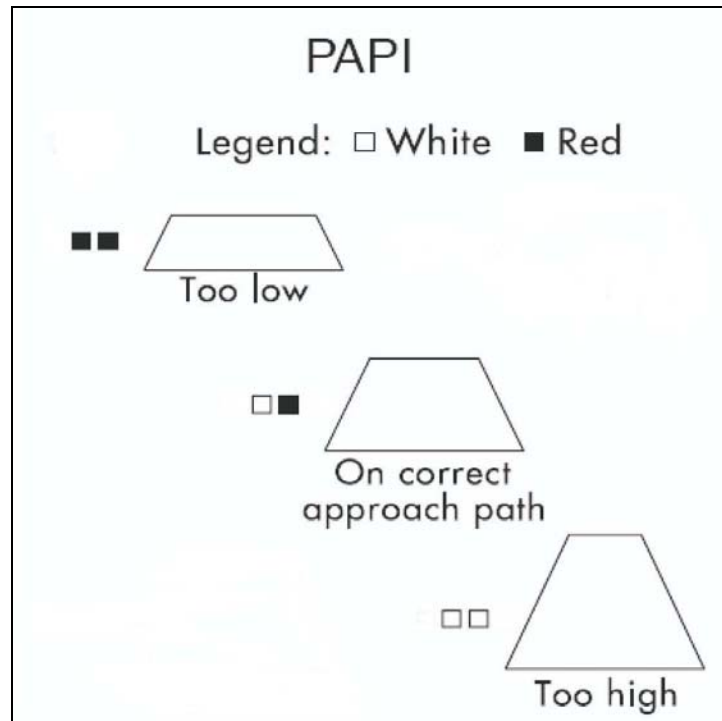
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<sup>1</sup> FAA AC 150/5345-52, *Generic Visual Glideslope Indicators (GVGI)*, 9/5/2007.

<sup>2</sup> Federal Aviation Administration, *Aeronautical Information Manual*, Change 3, August 27, 2009. On-line at: [http://www.faa.gov/air\\_traffic/publications/ATpubs/AIM/](http://www.faa.gov/air_traffic/publications/ATpubs/AIM/)

up to 20 miles at night. The PAPI lights are high-intensity lights that are red and white and are not sequenced flashing lights. The lights are installed on poles and the light beam is positioned to project 20 feet above the most critical obstruction in the area.

**Figure 4.10-C  
PAPI LIGHTING SYSTEM**



When using a PAPI, pilots operating on the correct glidepath would see one red light and one white light as they complete the approach to landing. Pilots operating above the glidepath would see two white lights, while pilots operating below the glidepath would see two red lights as they complete their approach to landing; appropriate correction would then be applied in order to join the correct glidepath for the landing approach.

Runway 13 has a two-light PAPI located on the right side of the runway as the pilot approaches from the north. This PAPI provides guidance for a 3.5 degree glide path, which clears any obstacles and the terrain north of the Airport. Runway 31 has a two-light PAPI located on the left side of the runway as the pilot approaches from the south. This PAPI provides guidance for a 4.0 degree glide path, which clears any obstacles, including the elevated terrain approximately one mile south of the Airport.

The nearest land use to the PAPI lighting system at the approach end of Runway 13 (north of the Airport) is Redwood Landfill, the southern edge of which is currently located approximately 3,460 feet northwest of Runway 13/31. There is a very brief window of opportunity to view the lights traveling south on Highway 101 in the

vicinity of the landfill. The nearest residential area to the north is near the City of Petaluma, located approximately 5.5 miles away from the airport. The lights would not be visible in the City of Petaluma due to the hilly terrain and distance that separates the residential uses from the north end of the runway. Given the distance from the Airport and the angle of the PAPI lights, it is unlikely that residents living in that area would be able to see the PAPI even at night.

The nearest residential area to the PAPI lighting system at the approach end of Runway 31 (south of the Airport) is located 1.1 miles away in the hills south of the airport. The angle of the PAPI on the south side of the Airport is set at 4.0 degrees, which is a steeper angle than the typical 3.0 degree approach. The reason for this increased angle is to provide an additional margin of safety for pilots approaching over the elevated areas south of the Airport. Therefore, the PAPI lights are directed above the residential areas located on the elevated terrain. It is possible that residents at the highest points of this residential area may be able to see the PAPI lights, but given the angle and the distance, these lights would not be obtrusive.

#### Other Airport Lighting

A rotating beacon identifies the location of the Airport at night and is identified by projecting a green and white beam of light 180 degrees apart.

Obstructions in the vicinity of the Airport are also marked or lighted to warn pilots of their presence. These obstructions may be identified by a steady-red, flashing-red, or white strobe light. These obstructions are identified for pilots on approach and sectional Visual Flight Rules charts and on the official Airport Obstruction Chart, published by the National Oceanic and Atmospheric Administration.

Other lighting exists along the taxiways and ramps for low visibility purposes and to assist aircraft movement on the airfield, such as hold position lights, stop bar lights, and runway and taxiway signage. Each of these additional light systems is located within the Airport complex and represents no impact upon neighboring communities.

## **4.10.2 ENVIRONMENTAL IMPACTS AND MITIGATION**

### **4.10.2.1 Significance Criteria**

According to Appendix G of the California Environmental Quality Act, a project would generally have a significant effect on aesthetics and visual resources if it would:

- a) Have a substantial adverse effect on a scenic vista;
- b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

- c) Substantially degrade the existing visual character or quality of the site and its surroundings; and
- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Marin County also has developed criteria for significance thresholds in its Environmental Impact Report Guidelines.<sup>3</sup> Marin County's criteria for significance are listed as follows:

- a) Substantially reduce, obstruct, or degrade a scenic vista open to the public or scenic highway, or conflict with adopted aesthetic or visual policies or standards;
- b) Have a demonstrable negative aesthetic effect by causing a substantial alteration of the existing visual resources including, but not necessarily limited to:
  - 1) An abrupt transition in land use;
  - 2) Disharmony with adjacent uses because of height, bulk or massing of structures; or
  - 3) Cast of substantial amount of light, glare, or shadow.

#### **4.10.2.2 Environmental Impacts of the Proposed Project**

##### **Impact 4.10-1: Visual Impacts to residential areas to the south, the park areas to the northwest, and to motorists on Highway 101 (less than significant).**

A reconnaissance of the Airport perimeter was conducted to identify potential areas that may be affected by the Proposed Project. Photographs were taken to provide the context in which the Airport is located and provide references from which to assess the potential visual and aesthetic impact of the Proposed Project. Computer software was used to digitally place the proposed runway extension on the photos.

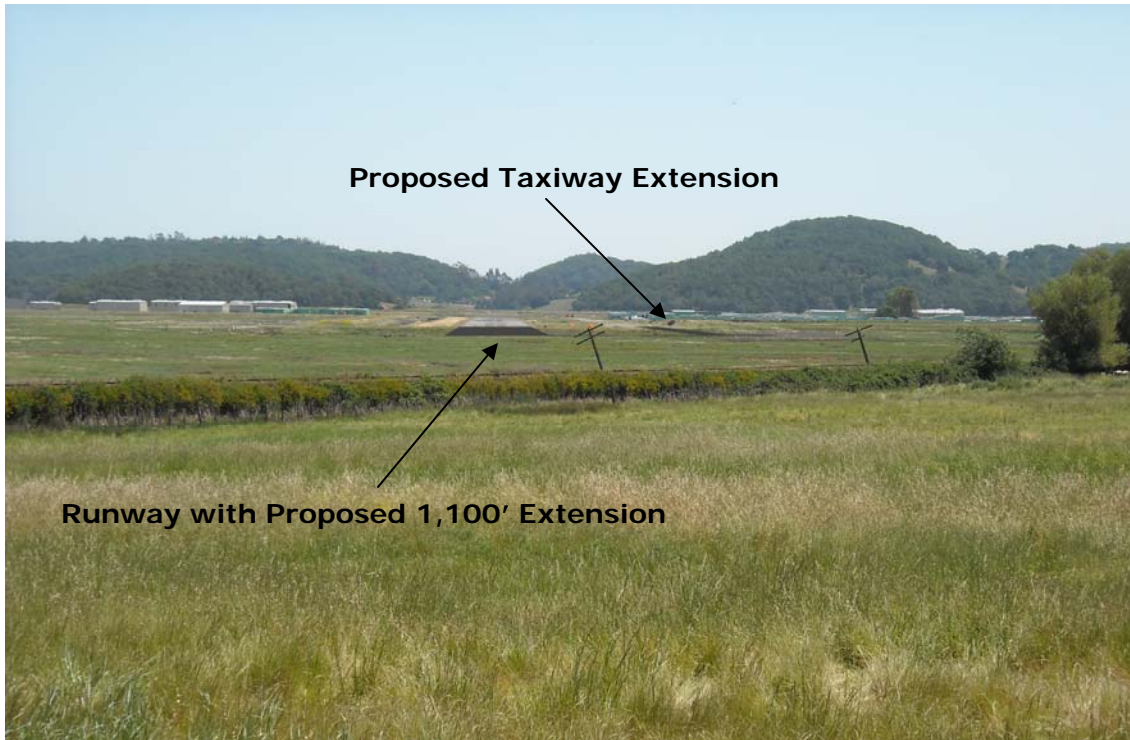
3D Studio Max 2010 by Autodesk, a three-dimensional (3D) visualization program, was used for the creation of the proposed runway extension and rendering in camera perspective. Photoshop CS4 by Adobe was used to composite or overlay the renderings with the actual photos. **Figure 4.10-D** shows the rendering of the Airport with the proposed runway extension from the north.

In addition, a photo simulation was prepared to simulate the view from the ridge south of the Airport (Laguna Vista Drive), both with and without the Proposed Project. **Figure 4.10-E** and **Figure 4.10-F** show the results of this analysis.

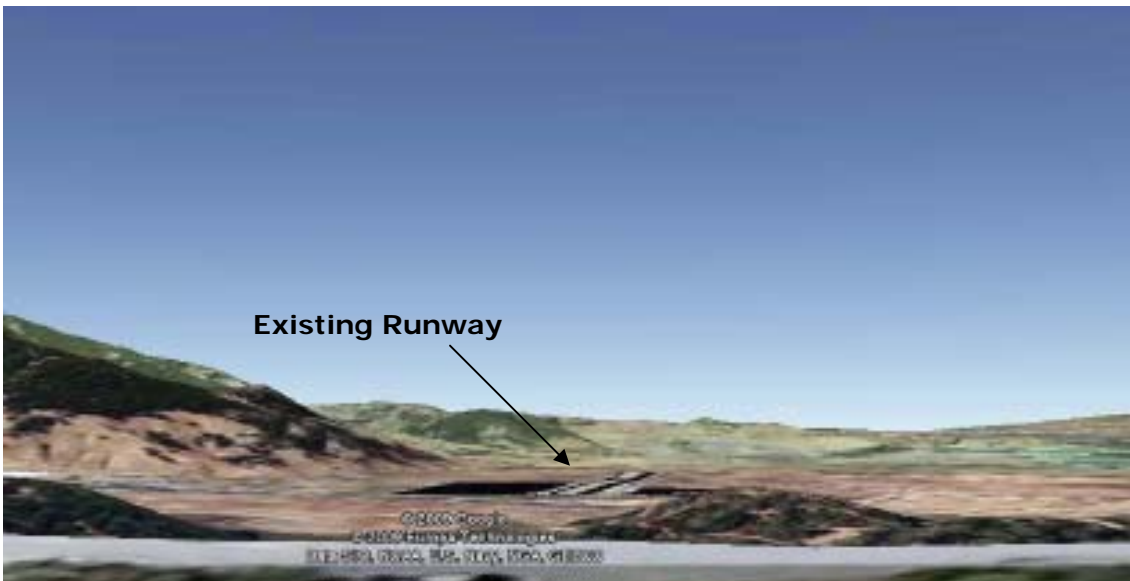
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<sup>3</sup> Marin County Community Development Agency. Environmental Impact Review (EIR) Guidelines Policy and Procedures for Implementation of the California Environmental Quality Act (CEQA). Adopted May 17, 1994 Marin County Board of Supervisors.

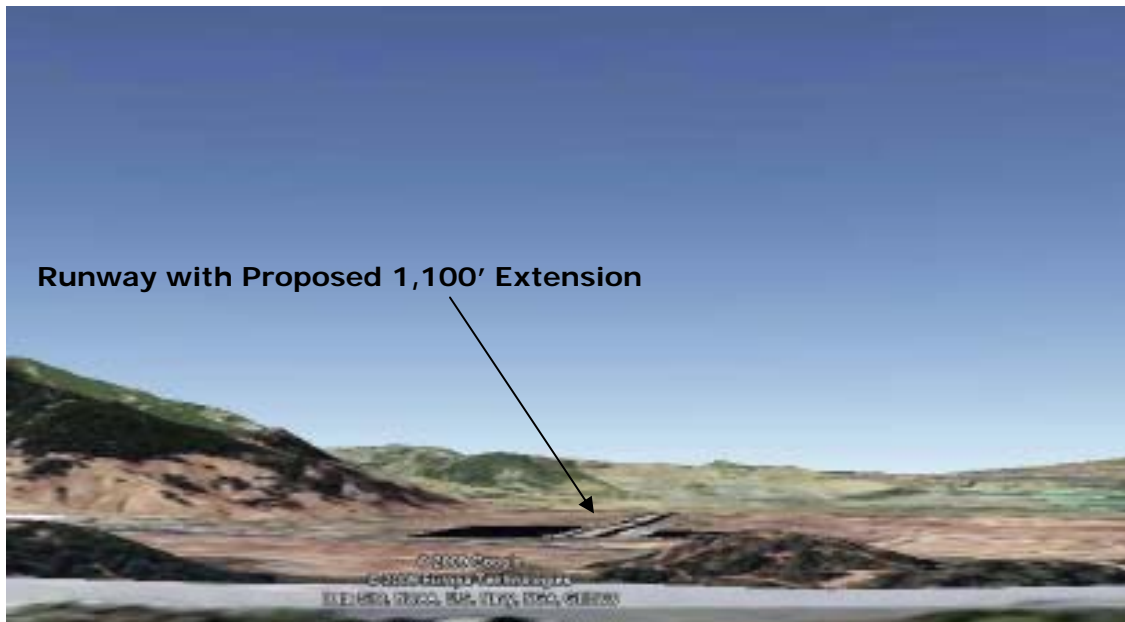
**Figure 4.10-D  
VIEW OF AIRPORT FROM THE NORTH WITH PROPOSED PROJECT**



**Figure 4.10-E  
VIEW OF EXISTING AIRPORT FROM THE SOUTH**



**Figure 4.10-F  
VIEW OF AIRPORT FROM THE SOUTH WITH PROPOSED PROJECT**



The Proposed Project would not include any new vertical structures such as buildings. The Proposed Project would not substantially change the existing visual character or quality of the site and surroundings. Residents located south of the Airport that have a view of the Airport may notice a change in the layout of the runway and taxiway, but the modified view would be consistent with the existing view of an airport. Therefore, the Proposed Project would not have a substantial adverse effect on a scenic vista or damage scenic resources and is deemed less-than-significant.

**Mitigation:** None required.

**Impact 4.10-2: Impacts due to light and glare (less than significant).**

Generally, lighting located on airports at the runway thresholds and in the approach area pose the greatest concern for potential impact due to their intensity and to the direction that the lights are focused. The Proposed Project would require the relocation of the PAPI lighting system 1,100 feet to the northwest. This relocation would reduce the distance of the PAPI system to the nearest residential area from 5.5 miles to approximately 5.3 miles. Under these conditions 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. Conditions would not change for those residents that currently see the PAPI lights at the southern end of the runway. Those residents will continue to see the relocated lights.

Additional taxiway and runway lights would also be added to the Airport as part of the Proposed Project, but these lights are directed in a way to illuminate specific areas of pavement. These lights would likely be visible to the residential areas to the south that have a view of the Airport, but due to their low intensity and distance from these areas, they would not significantly increase the overall visual impact created by the Airport. The extension of the runway would not change the overall existing visual character of the area. Therefore, the Proposed Project would not create a new source of light or glare which would adversely affect day or nighttime views in the area and the impact is deemed less-than-significant.

**Mitigation:** None required.

#### **4.10.3 CUMULATIVE IMPACTS OF THE PROPOSED PROJECT**

Due to the fact that the Proposed Project would not result in any significant visual or aesthetic impacts, it can be concluded that the Proposed Project would not cause any cumulative or long-term impacts to aesthetics and visual resources.