

measures stipulated in the construction programmatic agreement, like the virtual tour, would serve to further lessen these impacts in addition to the minimization and avoidance efforts already described in the siting and design of surface radar towers 1 and 2. Therefore, the construction of surface radar towers 1 and 2 would result in overall less than significant impacts to cultural resources.

Collectively, the proposed location and design of the Proposed Action components described above considered ways to avoid or minimize impacts to known cultural resources and their contributing features (i.e., would be painted to blend in with the surrounding environment and/or concealed by existing vegetation). Further, mitigation stipulated in the construction programmatic agreement would seek to recover or record features that cannot be preserved in place to provide the community and public with interpretive tools that preserve the cultural importance of these resources. In total, construction efforts associated with the Proposed Action under Alternative 1 would result in less than significant impacts to cultural resources, and the implementation of avoidance, minimization, and mitigation measures, as referenced, would further ensure that impacts to cultural resources remain less than significant.

#### **4.5.4 Alternative 2**

Under Alternative 2, training would continue and increase over the No Action Alternative by approximately 5 percent, but this would represent a reduced tempo, approximately 10 percent less, than proposed training increases considered under Alternative 1. Impacts to cultural resources from training would be similar to those described under Alternative 1, as the types of impacts to cultural resources, namely foot traffic, would remain the same under Alternative 2. This training would occur across the broad landscape of the Military Lease Area and, given the types of cultural resources present as described under Alternative 1, would not degrade or impact character-defining features. The 5 percent increase in the frequency of temporary impacts (e.g., noise and visual impacts associated with human, vehicle, and aircraft presence) to cultural resources and particularly from public access controls to maintain safe separation during certain training activities (e.g., live-fire training at the Multi-Purpose Maneuver Range and Explosives Training Range) would remain similar to but less than those described for Alternative 1, but would not change the type of training activities previously addressed by the 2022 *Mariana Islands Testing and Training Programmatic Agreement*. Construction for Alternative 2 would be the same as described for Alternative 1 and would result in the same overall less than significant impact on cultural resources. Implementation of avoidance, minimization, and mitigation measures, as referenced in the construction programmatic agreement, would further ensure that impacts to cultural resources would remain less than significant under Alternative 2.

### **4.6 Visual Resources**

#### **4.6.1 Approach to Analysis**

The analysis of impacts to visual resources considers changes to the visual conditions such as visual quality and viewer experience that could occur because of the Proposed Action. The analysis of visual impacts is based on the methodologies described in the National Park Service's *Guide to Evaluating Visual Impact Assessments for Renewable Energy Projects* (National Park Service 2014) and *Documenting America's Scenic Treasures: The National Park Service Resource Inventory* (Sullivan and Meyer 2016).

Five specific key observation points on Tinian (Figure 4.6-1) were selected from the seventeen viewpoints identified in Section 3.6 as representative locations for the development of visual simulations.

The following procedures were followed in selecting the key observation points:

1. Conduct a viewshed analysis that considers elevation, topography, and vegetative cover to determine the potential visibility from nearby lands. The viewshed analysis identifies areas with potential views of the Proposed Action, including sensitive scenic and cultural resources, and roads, trails, scenic overlooks, and beaches that may be visually impacted by the Proposed Action. This analysis resulted in the selection of specific viewpoints.
2. Establish and conduct field photography of selected viewpoints. The selected viewpoints represent specific well-known places, thoroughfares (e.g., Broadway), and views or scenic overlooks (e.g., beaches and Mount Lasso) that people are accustomed to seeing as part of the general landscape.
3. Assess the existing landscape from the viewpoints identified by evaluating form (i.e., mass or shape of an object), line (i.e., ridges, skylines, edges of waterbodies, change in vegetation type), color, and texture (i.e., light and shadow created by the variations in the surface of a landscape) of both natural and human-made elements. Other factors considered when assessing the existing landscape include scale, dominance, and extent of view (enclosed versus panoramic).
4. Prepare photo simulations of the primary elements of each action alternative from the selected viewpoints that show before-action and after-action views.

Construction activities, such as the operation of equipment and machinery, may contrast with the existing landscape and can draw the viewer's attention toward the construction location. Visual effects for short-term construction activities change frequently in terms of locations. Long-term visual effects are permanent changes to the visual characteristics of the site. In this context, those effects are addressed as operational impacts. The degree to which each proposed alternative permanently impacts views in terms of visual contrast was determined based on the definitions in Table 4.6-1.



**Figure 4.6-1 Key Observation Points Selected for Visual Simulations**

**Table 4.6-1 Degree of Visual Contrast and Corresponding Impact Defined**

<i>Degree of Visual Contrast</i>	<i>Corresponding Impact</i>	<i>Definition</i>
None	No Impact	The element contrast is not visible or perceived.
Weak	Less Than Significant	The element contrast can be seen but does not diminish the scenic quality of the landscape and is not substantially noticeable when viewed from sensitive viewpoints.
Minor	Less Than Significant	The element contrast can be seen, diminishes the scenic quality of the landscape to a minimal degree, and is potentially noticeable when viewed from sensitive viewpoints.
Moderate	Less Than Significant	The element contrast begins to attract attention, begins to dominate the characteristic landscape, begins to diminish the scenic quality of the landscape, and would easily be noticeable from sensitive viewpoints.
High	Significant	The element contrast begins to attract attention, begins to dominate the characteristic landscape, diminishes the scenic quality of the landscape, and would easily be noticeable from sensitive viewpoints. View importance may vary from high to low.
Strong	Significant	The element contrast demands attention, substantially alters the scenic value of the landscape, and dominates views from sensitive viewpoints.

Source: National Park Service 2014, 2016.

#### **4.6.2 No Action Alternative**

Under the No Action Alternative, there would be no change to ground and aviation training, which would be conducted at the same tempo as evaluated in previous NEPA documents (DON 2010a, 2015b) and associated consultations and authorizations. Construction associated with the U.S. Air Force Divert project (U.S. Air Force 2016, 2020) would continue until complete, estimated by 2026, when the new infrastructure and facilities at TNI would become operational. Additionally, projects under the U.S. Air Force's Agile Combat Employment program would also continue, with the clearance of vegetation and restoration of the runway and other engineered surfaces at North Field. As a result, North Field would have the appearance of a working airfield, with better maintained surfaces and less dense jungle vegetation in and around the immediate runway areas. The No Action Alternative would not change the visual environment at most of the Key Observation Points selected for analysis. The clearing and re-establishment of runways and taxiways at North Field would be a beneficial impact at Key Observation Points near North Field.

#### **4.6.3 Alternative 1 and Alternative 2**

The analysis of visual resources is structured differently from other resources in Chapter 4 by considering training events and construction together. Alternative 1 and Alternative 2 training differ only in tempo, not visual perspective, and both alternatives share the same construction of facilities. Alternative 1 training would increase over the No Action Alternative by approximately 15 percent. Alternative 2 training would increase over the No Action Alternative by approximately

5 percent. As a result, both Alternative 1 and Alternative 2 rely on the same viewpoints identified in Section 3.6 Visual Resources (Figure 3.6-1) and would have the same effects.

As stated above, the selected viewpoints represent specific well-known places, thoroughfares, and views and scenic overlooks that people are accustomed to seeing as part of the general landscape. In selecting viewpoints where Proposed Action components would be located, this analysis considered the potential number of viewers, frequency and duration of views, activities in which the viewers are engaged while viewing the landscape, the importance of scenic quality to these activities, viewer familiarity with the landscape, and viewer concerns for the landscape.



Comparison of the aesthetic character of each selected viewpoint with and without implementation of the Proposed Action allows for analysis of the resulting visual change. Table 4.6-2 shows the Tinian existing conditions (“before” picture) compared with future conditions (“after” simulated picture), and summarizes the potential visual impacts based on simulated conditions. Appendix I, *Visual Simulations*, provides the results of visual simulations for each of the selected Key Observation Points.

Training and support infrastructure would include night lighting at the following locations: Base Camp main gate; Base Camp approach from 8th Avenue to the guard shack and fence line; entry gates to water wells; and entry gates to surface radar sites. All lighting would be rated to limit light trespass in order minimize the potential for the new lighting to impair night sky viewing.



The USAGM Saipan site would continue to be used as a tower site for communication. This site is excluded from the following analysis as the Proposed Action at USAGM Saipan involves only small upgrades to existing communication equipment on existing towers. No new training or major construction activities are planned for this location. Therefore, there would be no impact to visual resources at the USAGM Saipan site.



**Table 4.6-2 Evaluation of Proposed Action on Tinian Based on Visual Simulations**

<i>Selected Viewpoint</i>	<i>Potential Visual Impact</i>
6: Unai Chulu, Looking North/Northeast	<p><b>Training.</b> Training activities under Alternative 1 and 2 in this area would remain similar to existing training but would occur more frequently and include vehicle use of roadways and other improved surfaces with foot maneuver and pedestrian transits on unimproved surfaces with no ground disturbance. However, at this viewpoint the facilities would be blocked by foliage and not visible. Therefore, there would be less than significant impacts to visual resources.</p> <p><b>Construction.</b> Temporary construction activities and equipment, fencing, and cleared areas, and the construction of surface radar towers 1 and 2 would not be visible due to intervening dense vegetation. There would be no impact to visual resources.</p>
	 <p><b>Existing Conditions</b></p>
	 <p><b>Simulated Conditions</b></p>

<i>Selected Viewpoint</i>	<i>Potential Visual Impact</i>
7: Ushi Point at the Road, Looking North	<p><b>Training.</b> Training activities under Alternative 1 and 2 in this area would remain similar to existing training but would occur more frequently and include foot maneuver and pedestrian transits by small units, and surveillance activities from concealed observation points with no ground disturbance. Thus, there would be less than significant impacts to visual resources.</p> <p><b>Construction.</b> Temporary construction activities and equipment, and the construction of surface radar tower 2 located at the end of the roadway leading to Ushi Point would be visible. A lookout and navigational aids have historically been located at Ushi Point and smaller structures are present at this location. The new surface radar tower 2 would introduce a larger profile of vertical and horizontal lines, and new/contrasting colors into the middle-ground of the viewshed for visitors driving to Ushi Point, but it would not present a visual barrier blocking or otherwise obscuring the view. The cleared areas, new fencing and equipment shelter would also add new/contrasting colors to the landscape in the middle-ground that would be visible to visitors. The structures would not be predominantly visible to visitors at the Ushi Point Fisherman’s Memorial looking toward the ocean, but the existing scenic value of the landscape would be altered. Minimization measures such as painting the structure using a color palette consistent with existing landscape would serve to reduce these impacts. Therefore, there would be a less than significant impacts on visual resources.</p> <p>Existing and simulated conditions photos are shown on the following page.</p>

<i>Selected Viewpoint</i>	<i>Potential Visual Impact</i>
7: Ushi Point at the Road, Looking North (continued)	<div data-bbox="391 268 1422 810">  </div> <p data-bbox="391 810 638 846"><b>Existing Conditions</b></p> <div data-bbox="391 858 1422 1392">  </div> <p data-bbox="391 1392 662 1428"><b>Simulated Conditions</b></p>



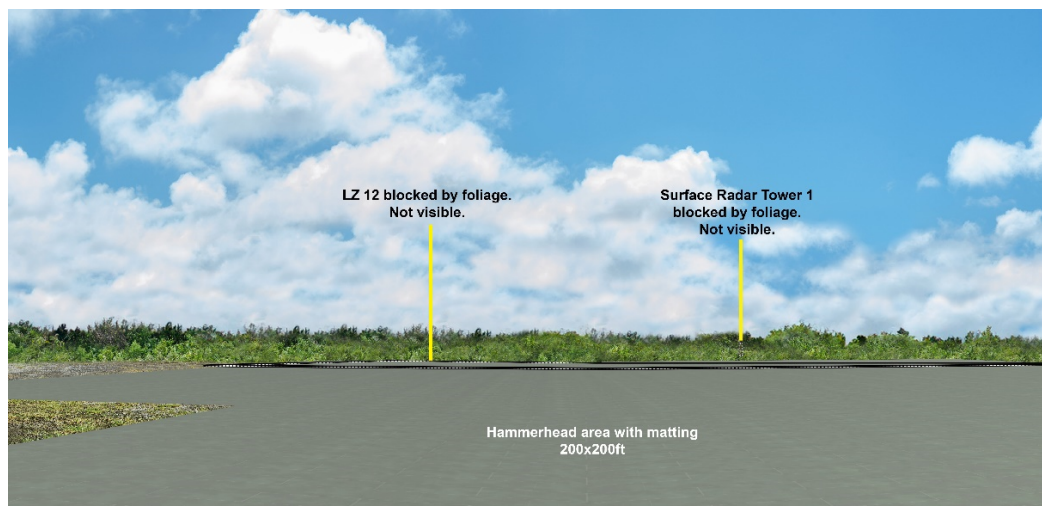
11a: End of  
Runway  
Baker,  
Looking  
West

**Training.** Training activities under Alternative 1 and 2 in this area would remain similar to existing training but would occur more frequently and include vehicle use of roadways and other improved surfaces with foot maneuver and pedestrian transits on unimproved surfaces with no ground disturbance. Thus, there would be less than significant impacts to visual resources.



**Construction.** Temporary construction activities and equipment, and the construction of surface radar tower 1 and clearing for Landing Zone 12 would occur. However, from this viewpoint, neither element would be visible due to intervening vegetation, distance, and the elevation at which they would be constructed (about 2,800 feet away and at a lower elevation than runway Baker). Additionally, a deployable metal matting surface would be installed on runway Baker which would have a slatted or brickwork pattern and be coated with a neutral-colored non-skid epoxy. Vegetation in cleared zones would be maintained at a height between 7 and 14 inches, extending about 500 feet from either end of the runway. These alterations would be consistent with the setting and feeling of the runway while protecting the existing runway surface below the metal matting. Thus, construction of the runway Baker improvements would be a less than significant impact.





Existing Conditions



Simulated Conditions

<i>Selected Viewpoint</i>	<i>Potential Visual Impact</i>
11b: Center of Runway Baker, Looking West	<p><b>Training.</b> During airfield training, the public would be restricted from accessing runway Baker. Therefore, there would be no impacts to public visual resources.</p> <p><b>Construction.</b> A deployable metal matting surface would be installed on runway Baker, including at the end of the runway termed a hammerhead. The matting is an aluminum plank surface, assembled by hand in a brickwork pattern to form runways, taxiways, or aircraft aprons, and typically coated with grey non-skid epoxy. Vegetation in clear zones would be maintained at a height between 7 and 14 inches, extending about 500 feet from either end of the runway. These alterations would be consistent with the setting and feeling of the runway while protecting the existing runway. Thus, construction of the runway Baker improvements would be a less than significant visual impact.</p>  <p><b>Existing Conditions</b></p>  <p><b>Simulated Conditions</b></p>

<i>Selected Viewpoint</i>	<i>Potential Visual Impact</i>
14: Mount Lasso Scenic Overlook, Looking Northeast	<p><b>Training.</b> Landing Zones would allow for the insertion or extraction of personnel and equipment from two to four aircraft, and also provide staging, field headquarters, camping, and gathering and rendezvous areas in support of distributed operations and logistics training. Because the Landing Zones can be seen, training activities are potentially noticeable when viewed from Mount Lasso. However, the views would be distant and partially obstructed by vegetation. Therefore, there would be a less than significant impact on visual resources.</p> <p><b>Construction.</b> Temporary construction activities and equipment, and Landing Zones 9 and 10 would be visible from Mount Lasso. Views of Landing Zone 9 would be partially obstructed by vegetation. The Landing Zones would appear to the viewers as squares largely denuded of vegetation. The Landing Zones would be apparent, diminishing the scenic quality of the landscape but only by a moderate degree, and be noticeable when viewed from Mount Lasso. Therefore, there would be a less than significant impact on visual resources.</p>  <p><b>Existing Conditions</b></p>  <p><b>Simulated Conditions</b></p>

Based on the findings from Table 4.6-2, visual impacts from training and construction under Alternative 1 and Alternative 2 would be less than significant.

## 4.7 Transportation

### 4.7.1 Approach to Analysis

The analysis described in this section considers the impacts to transportation networks on Tinian from training and construction activities. The ground transportation analysis uses the existing and proposed ground transportation volumes as part of the operational analysis of the roadways and intersections. The operational analysis requires inputs on the characteristics of the roadway such as the lane widths, speed limit, and signal timing to run its calculations. The analysis calculates performance measures, such as the delay, that are used when determining the level of service of