8.3 VISUAL RESOURCES

8.3.1 Affected Environment

The following PTA discussion is divided into two subject areas, PTA and PTA Trail. The proposed WPAA is expected to have visual characteristics similar to PTA because of its proximity. The ROI includes all areas within the line of sight of activities or changes proposed at PTA or PTA Trail. Because PTA Trail extends from Kawaihae to PTA, the ROI includes a corridor of land along this route, including views from coastal and nearshore areas, adjacent roadways (Kawaihae Road, Hawai'i Belt Road, and Saddle Road), populated areas along the route, and adjacent preserve areas.

PTA and PTA Trail are within the planning area of the General Plan of Hawai'i, which establishes the specific policies and standards for the island to increase and enhance scenic resources. Specific standards provide guidelines for designating sites and vistas of extraordinary natural beauty that must be protected, including the following types of features:

- Distinctive and identifiable landforms distinguished as landmarks, such as Mauna Kea;
- Coastline areas of striking contrast;
- Vistas of distinctive features; and
- Natural or native vegetation, which makes a particular area attractive (County of Hawai'i 1989, 13).

Landscape Character

Pōhakuloa Training Area

The landscape of PTA is characterized by panoramic views of the broad open area between Mauna Kea and Mauna Loa. The gently sloping form and smooth line of Mauna Kea to the north and Mauna Loa to the south are dominant background features of the visual landscape.

There are few human features in the area except roads and support facilities within the training area and structures, roads, and an airfield within the cantonment area of PTA. The cantonment area is a visually distinct element of the landscape. Vegetation is generally grasses and shrubs that tend to be sparse and generally low in height. Terrain in the PTA area is gently sloping and open, periodically interrupted by remnant volcanic cones (pu'u). Lava flows create dark visually receding areas throughout PTA. The extremely uniform vegetation and topography result in middleground and background views of PTA that lack visual complexity but that are dramatic in their expansiveness. The panoramic views, the integrated visual space, and the unity of the natural features give this area a high overall visual quality, despite the uniformity of the landscape.

Most proposed SBCT modifications at PTA would be within the middleground or background when viewed from surrounding areas, such as Saddle Road, except for those in the cantonment area.

West PTA Acquisition Area

The WPAA is in the Waikoloa area, at the western foot of Mauna Kea (Figure 8-1). The WPAA land steadily slopes away from Mauna Kea and toward the ocean. Māmalahoa Highway forms the northwestern boundary and Saddle Road forms most of the eastern boundary; Saddle Road Junction, where these roads connect, forms the northern boundary. Cattle grazing, limited hunting, quarrying, and occasional Army training compose the activities in the proposed acquisition area.

PTA Trail

As proposed, PTA Trail begins at Kawaihae Harbor and would run inland along an existing trail from the harbor, turns south paralleling the current highway, and then would turn inland again as it crosses the lands of Puʻukoholā Heiau National Historic Site. The proposed trail would travel up the gentle western slope of the island to PTA. The area through which the route passes is largely undeveloped except for the village of Waikoloa. From most viewing locations along major roadways or other population centers, the trail would be a middle or background feature and would be obstructed by topography and vegetation. The proposed route would be most visible where it would parallel the Kawaihae Road and where it would cross the Hawaiʻi Belt Road.

Terrain along PTA Trail is generally gently sloping with intermittent puʻu. Lava flows that create dark, visually receding areas occur throughout the proposed trail alignment. Vegetation generally consists of grasses and low shrubs, with only occasional sparse trees, resulting in a fine even texture to the landscape. The gradually sloping forms of Mauna Kea and Muana Loa are the dominant background features along the entire alignment. As a result the middleground and background views along PTA Trail lack visual complexity but are dramatic in their expansiveness. The landscape through which the trail would pass ranges from heavily modified areas near Kawaihae with low to moderate visual quality, to areas with little modification and panoramic views with high overall visual quality.

Sensitive Views

In response to public comments regarding scenic views this section has been expanded. The General Plan of the County of Hawaiʻi lists the following locations as examples of natural beauty (County of Hawaiʻi 1989):

- The scenic countryside around Waikii (TMK 6-7-01:003);
- The mauka and makai view plane from various locations along Queen Kaʻahumanu Highway in South Kohala and North Kona;
- The Mauna Kea State Park area (TMK 4-4-16:003); and
- The Puʻukoholā Heiau National Historic Site.

Sensitive views may occur in areas of recreational or high public use. These include Mauna Kea State Recreation area adjacent to PTA, beach areas near Kawaihae, The Puʻukoholā Heiau National Historic Site, and adjacent roadways. The primary public viewing area on or near PTA is along the Saddle Road corridor. Saddle Road traverses PTA more or less along its northern boundary. Public traffic through the area is generally light, and travelers typically drive through without stopping. While the typical public view of the PTA area is from a vehicle traveling at normal speed, some hikers, photographers, and artists pause along Saddle Road to appreciate the views. Other roadways near proposed SBCT activities include Kawaihae Road and the Hawaiʻi Belt Road.

8.3.2 Environmental Consequences

Summary of Impacts

Under the Proposed Action, significant but mitigable impacts on existing views would occur as a result of construction of PTA Trail and installation of antenna support structures. PTA Trail would traverse Puʻukoholā Heiau National Historic Site. It would also traverse a large area of open space, paralleling and crossing existing roadways at several locations along the route. Construction of the trail would not substantially alter the landscape but would result in significant but mitigable impacts on existing views.

Range-related projects proposed under the Proposed Action include the BAX, along Menehune Road in the vicinity of Puʻu Menehune and Range 12, the AALFTR, along Redleg Trail on the site of Ranges 3, 8 and 10, and the Range Maintenance Facility in the PTA cantonment area. Because the Army uses PTA for weapons qualification and maneuver training, these projects would not significantly alter land use or require significant changes in landform or vegetative cover. The BAX site is only partly visible from Saddle Road, located as it is mainly in the middleground and background areas of the view. The AALFTR site is remote from any public areas on or near PTA. The surrounding terrain effectively screens the AALFTR site from direct view. The design of each of these ranges uses topography and locally available materials to help minimize visual impacts. The Range Maintenance Facility would be constructed on a developed site within the PTA cantonment area and would require the demolition of several buildings. Although it is easily visible from Saddle Road, its appearance would improve the visual quality of the immediate area because the buildings to be replaced are in poor condition.

Other construction within PTA, including realignment of BAAF and construction of the ammunition storage facility and the tactical vehicle wash, would occur in previously developed areas and would not significantly affect an existing view or landscape. Potential impacts on visual resources are summarized in Table 8-9.

Proposed Action (Preferred Alternative)

Significant Impacts Mitigable to Less than Significant

Impact 1: Modification of the existing views, Construction of PTA Trail. PTA Trail would be constructed largely within open space areas not visible from any sensitive view points;

however, the proposed trail would be visible from Kawaihae Road, which it parallels and crosses, and Hawai'i Belt Road, which it also crosses.

Table 8-9
Summary of Potential Visual Resources Impacts at PTA

Impact Issues	Proposed Action	Reduced Land Acquisition	No Action
Impairment of view during the construction phase	⊙	⊙	○
Modification of existing view	⊘	⊘	○
Alteration of the landscape character	⊙	⊙	○
Consistency with visual resource policies	⊙	⊙	○
Impairment of view from visible fugitive dust	⊙	⊙	○
Alter nighttime light and glare	⊙	⊙	○

In cases when there would be both beneficial and adverse impacts, both are shown on this table. Mitigation measures would only apply to adverse impacts.

LEGEND:

⊗ = Significant
⊘ = Significant but mitigable to less than significant
⊙ = Less than significant
○ = No impact
\+ = Beneficial impact
N/A = Not applicable

Segment one of the trail extends from Kawaihae Harbor adjacent to Highway 19 (also referred to as Queen Ka'ahumanu Highway) to the Highway 19 trail crossing. The proposed PTA Trail would use an existing trail through the Pu'ukoholā Heiau National Historic Site near the highway. This segment of the trail would be visible from residential areas and to motorists on Highway 19 looking north (Photo 8-1) but would not be visible to visitors of the historic site. Although Highway 19 is not designated as a scenic route, the road is highly traveled, exposing a large number of potential viewers to the project. The trail in this segment would follow an existing roadway/trail alignment. This area, especially near Kawaihae Harbor, has been extensively altered. Based on the criteria outlined in Section 4.3.1, the visual sensitivity and impact on views along this segment of the trail would be moderate.

Segment two of the trail extends from Highway 19 to the Hawai'i Belt Road. This segment of the trail would be visible from Highway 19 looking south, the Hawai'i Belt Road looking northwest and southeast, and the Māmalahoa Highway looking north. In addition, the trail alignment would be visible from Waikoloa Road and, in the middleground, from the village of Waikoloa. The trail would follow existing utility corridors for a portion of this segment after crossing Highway 19. Most of this segment is open land, consisting of grasses and shrubs, with periodic areas of lava (Photo 8-2). Much of the trail alignment would not be

Photo 8-1. View from Highway 19, looking northeast from Kawaihae Harbor.

Photo 8-2. View from Māmalahoa Highway, looking north.

visible due to low viewing angles, resulting in the trail being screened by vegetation or topography. The views from these roadways are not designated as scenic but are highly traveled. This area is considered to be of high sensitivity due to the expansive views and the lack of cultural modification. The impact on views along this segment of the trail would be moderate.

Segment three of the trail extends from the Hawai'i Belt Road to PTA. This segment could be visible from the Hawai'i Belt Road, looking northwest and southeast, although most of the trail alignment would not be visible because it would be screened by vegetation or topography (Photo 8-3). Most of this segment is open land, consisting of grasses and shrubs with areas of lava occurring throughout. The views from these roadways are not designated as scenic but are highly traveled. This area is considered to be of high sensitivity due to the expansive views and the lack of cultural modification. The impact on views along this segment of the trail would be moderate to severe.

Photo 8-3. View of typical road intersection along Hawai'i Belt Road.

Regulatory and Administrative Mitigation 1. None identified.

Additional Mitigation 1. The Army proposes to construct military vehicle trails to conserve natural features, including terrain and vegetative cover, to the extent practicable. Use of roadbed materials that contrast sharply with existing conditions will be avoided to the extent practicable. To avoid creating a discordant linear feature, the road alignment would, where possible, follow the natural contours of the land. Cut slopes would be minimized or avoided, where practicable, and would be blended into the landscape by rounding the edges of the slope and differentially orienting the slope and the road bed alignments where practicable.

Use of these techniques would be varied based on the specific conditions, including depth of the cut, orientation of the slope, and type of material (e.g., dirt slope and rock slope).

Impact 2: Modification of the existing views, Construction of FTI. Several of the proposed FTI antennas and support equipment sheds would be within potentially sensitive viewsheds, such as roadways or forest preserves. Several sites proposed for FTI antennas, including Puʻu Kanalopakanui, Puʻu Keʻekeʻe, Puʻu Ahi, Puʻu Kailua, are areas where there are few human-made modifications and where FTI facilities would be on hilltops, silhouetted on the visual horizon (Photos 8-4 and 8-5). Viewpoints along Saddle Road or the Hawaiʻi Belt Road are not designated as scenic but are frequently traveled routes with high aesthetic value.

Although the proposed locations are prominent features from public roadways, they are not unique within the area. In addition, these locations are all at least one mile (1.6 meters) from potentially sensitive viewpoints, with the exception of Puʻu Keʻekeʻe, which is approximately 0.5 mile (0.8 meter) from Saddle Road. At this distance, the proposed 20-foot (6.1-meter) tower/antenna structure and equipment shed would be in the middleground and would be visually indistinct. Thus, installing the FTI equipment at these locations would have a significant but mitigable impact on visual quality.

Placing antennas at Kawaihae Harbor, the Anti Armor Range 8, Mauna Loa Observatory, Puʻu Pōhakuloa, and the Range Maintenance Facility would make them visible from surrounding roads or recreational areas; however, because of development in these areas, the antennas and equipment would be less visually inconsistent. Antennas at ʻAuwaiakeakua and Kōloa would be installed near water towers and would similarly have less impact on the overall visual character of the area. Although installation of FTI equipment at these locations would have less impact than the puʻu sites described previously, they would nevertheless have a significant but mitigable impact on visual quality.

Regulatory and Administrative Mitigation 2. None identified. *Additional Mitigation 2.* Where practicable, the Army proposes to enhance existing site conditions to help screen the proposed tower and support shed from the surrounding area. The tower site will be developed to conserve existing natural features, including terrain and vegetative cover, to the extent practicable. The equipment shed would be located to maximize use of natural screening if possible. If necessary, vegetation will be planted to provide additional screening, or screening will be constructed using materials that mimic the color and/or texture of the surrounding area, where practicable. If possible, materials used for the tower and equipment shed will be nonreflective, weathered, or otherwise painted to blend with the natural surroundings.

Photo 8-4. View south from Saddle Road toward Pu‘u Ke‘eke‘e.

Photo 8-5. View south from Saddle Road toward Pu‘u Ahi.

Less than Significant Impacts

Modification of the existing views. The Range Maintenance Facility and the modifications of BAAF would replace development in the PTA cantonment area and would not result in any substantial change in visual quality. Additional ammunition storage igloos would be built in an area of similar development and would be covered with earth to blend with the surrounding natural environment. The area would not be visible or would be at such a distance from public viewing points (off-post or along Saddle Road) that no significant change in the visual quality of the area would be discernable.

The BAX and AALFTR are either not visible or they are at such a distance from public viewing points that no significant change in the visual quality of the area would be discernable. Implementing the Proposed Action would result in an expanded training area, a change in the type of vehicles used (Stryker vehicles), and an increase in the number of vehicles employed by the 2nd Brigade. Use of the Stryker would allow training units to drive off-road and over steeper terrain than they can now with the vehicles used. Nevertheless, within PTA, many of the training areas and roads are only partially visible from Saddle Road because terrain, distance, and, to a lesser degree, vegetation effectively screen training activities. The visual impact of these training activities would be limited primarily to traffic into and out of the PTA area, along established travel routes or the proposed PTA Trail, discussed above, particularly the existing trail through the Pu'ukoholā Heiau National Historic Site.

Photo 8-6 is the view from Saddle Road as the traveler enters PTA from the west. The view tends to be open, with little variation in landform, color, or texture. The two primary features of this view are the slopes of Mauna Kea on the left and Mauna Loa on the right, which frame the view. From this vantage point, the SBCT-related projects would be near or beyond the horizon.

Photo 8-6. View from Saddle Road at the PTA western boundary looking east.

Photo 8-7 is a view from Saddle Road near the cantonment area. The view again is open with little variation of landform, color or texture. Vegetation is more discernable in the foreground and middle ground areas of the view and tends to obscure human-made features. Several volcanic cones are visible and tend to serve as the dominant landform feature. The slopes of Mauna Loa are visible in the background. From this vantage point, the BAX site is

located primarily in the middleground of the view, toward the center-right. The AALFTR site is screened by terrain on the left.

Photo 8-7. View from Saddle Road near the cantonment area, looking south toward the BAX site.

Photo 8-8 is a view from Saddle Road south and east of the cantonment area. The view is open, although less so than views farther west. The landforms in this area are relatively flat, and color and texture are more varied. The dominant feature is the slope of Mauna Loa in the background. There is essentially no middleground within this view. The AALFTR site, which lies to the right in this view, is never visible. The BAX site is farther to the west and is not discernable either.

Photo 8-9 is the view from Saddle Road as the traveler enters PTA from the east. The views in this area are typically open due to the flat terrain, although the terrain is rolling in places due to the lava fields. The colors and textures in this area are dominated by the lava fields. Vegetation is absent or less noticeable. Several volcanic cones are prominent features in the middle ground, and, as in the approach from the west, the slopes of Mauna Kea and Mauna Loa frame the view. The SBCT-related project sites are beyond the horizon in this view. None of these sites are visible until a viewer traveling west approaches the cantonment area.

Photo 8-8. View from Saddle Road, looking south toward the AALFTR site.

Photo 8-9. View from Saddle Road near the PTA eastern boundary, looking west.

The views depicted above are typical for the PTA area. The locations of the primary SBCT training areas are such that no change in visual quality is anticipated from the Proposed Action. Project-related activities are visible from recreational areas on the higher slopes of Mauna Kea and Mauna Loa, although at such a distance any details are not discernable.

The use of this section of PTA Trail would substantially increase and add inconsistent visual elements to this area, but these impacts would be less than significant due to the intermittent and temporary nature of the impact and the fact that most views of the trail would be obscured by vegetation and terrain. The use of the trail through the Puʻukoholā Heiau National Historic Site is near the state highway and removed from the cultural features of the park. The trail has historically been used by military vehicles.

Alteration of landscape character. Implementing the Proposed Action at PTA would introduce new structures and additional training maneuvers that would be visually incompatible with the surrounding natural features. These features are not expected to significantly alter the landscape character because they would not involve large changes in land form or use, they would largely be obscured by topography and vegetation, and they would be at such distances from sensitive viewing locations that visual detail would be lost.

Impairment of view during the construction phase. Construction within PTA, except the cantonment area, would not be visible from surrounding sensitive viewing areas. Due to the industrial nature of the cantonment area, project-related construction here would not substantially affect sensitive views from Saddle Road or the surrounding area. PTA Trail would be constructed largely outside of any view corridors. In proximity of major roadways, trail construction would have only a minor impact because the area of effect would be relatively small and would be obscured by vegetation and topography.

Consistency with visual resource policies. Construction and training in PTA would occur in areas that would not alter views from public roadways or sensitive view areas and would be substantially consistent with the visual preservation objectives stated in the General Plan for the County of Hawaiʻi. Measures described above to ensure potential impacts on sensitive

views are minimized during PTA Trail construction would ensure consistency with the visual resource preservation policies of the General Plan for the County of Hawai'i.

New facilities and training activities in PTA would increase the amount of artificial light, potentially affecting astronomical facilities on Mauna Kea. Article 9, Outdoor Lighting of the County of Hawai'i County Code, strictly defines the requirement to control outdoor lighting within the county. Due to the sensitive nature of astronomical instrumentation on Mauna Kea, proposed roadway, equipment yard, parking, training and security lighting at PTA is required to adhere to the specifications outlined in Table 14-A of Article 9. All proposed lighting should be equipped with fixtures that adhere to the code. Night training at PTA, which includes the use of flares and light emitting munitions and explosives, is not considered detrimental at this time; however, if the Proposed Action would increase night training, it would contribute to the overall light pollution problem in the county. In such a case, the Army should increase its sensitivity to the contribution resulting from these training activities.

Impairment of views from visible fugitive dust. As discussed in Section 8.5, training at PTA would increase fugitive dust in two ways. Vehicles traveling on unpaved roads and in off-road maneuver areas would be an ongoing intermittent source of increased fugitive dust emissions. Wind erosion from areas disturbed by off-road vehicle maneuver activity would be an additional permanent source of increased fugitive dust emissions. Soil erosion is discussed in Section 8.9. Although wind would create visible fugitive dust clouds, it would also help dissipate the clouds so that the dust would not stay suspended in the air for an extended duration. Also, the training areas are largely outside the public viewshed. It is assumed the fugitive dust and soil mitigation identified in Sections 8.5 and 8.9 would be implemented to keep soil erosion and compaction to a minimum. As a result, visual impacts would be less than significant with respect to visible fugitive dust.

Alteration of nighttime light and glare. Under the Proposed Action, lighting not used during training, such as that for the ammunition storage area and cantonment, would be low sodium vapor lighting and would be used mostly during the day. It would also be properly oriented and shielded to illuminate specified areas. The use of nighttime lighting devices, such as flares, during training would increase. The use of these devices is not expected to increase dramatically because training with night vision goggles would be conducted in training areas. The increased use of lighting devices for training would mostly be in the WPAA and not in Army areas closest to, for example, nearby observatories, which require dark surroundings during nighttime operations. The Army has not received complaints regarding nighttime light and glare from nearby observatories. Visual impacts would be less than significant with respect to altering nighttime light and glare.

Reduced Land Acquisition Alternative

Less than Significant Impacts

Modification of the existing views. Like the other SBCT-related range projects proposed at PTA, the QTR2 site is either screened or at such a distance from public viewing points (off-post or along Saddle Road) that no significant change in the visual quality of the area would be

discernable. Other than the addition of several small buildings composing the ROCA, the construction of QTR2 would not significantly alter land use or require significant changes in landform or vegetative cover beyond that proposed under the Proposed Action.

The change in the type and increase in the number of vehicles employed by the SBCT under the Proposed Action would occur similarly with implementation of Reduced Land Acquisition. However, unlike their use on the other SBCT-related ranges, these vehicles would not be utilized as part of the qualification and/or training exercises associated with QTR2. Therefore, the visual impact of these vehicles would be no more significant than under the Proposed Action.

Terrain, distance, and, to a lesser degree, vegetation surrounding the site would effectively screen the proposed training facilities and activities. No significant impacts on views are associated with implementing this alternative.

Alteration of landscape character. The addition of several small buildings that make up the ROCA at QTR2 would not significantly alter the landscape character at PTA. The range would be on Range 8, which already contains several small structures and is also proposed for use by the AALFTR. Reduced Land Acquisition would result in less than significant impacts on the landscape character of PTA.

Impairment of views from visible fugitive dust. Similar to impacts from the Proposed Action, the impacts on the impairment of views from visible fugitive dust would not be significant.

Alteration of nighttime light and glare. Similar to impacts from the Proposed Action, the impacts from the alteration of nighttime light and glare would not be significant.

No Action Alternative

No Impacts

The existing baseline for visual resources would continue under the No Action Alternative. Under the status quo of No Action, because no training, construction or land use changes are proposed, no impacts on visual resources are anticipated at PTA.