

3.3 VISUAL RESOURCES

This section addresses the visual resources issues related to military training and activities at MMR and PTA by describing the visual character of the area, identifying potentially sensitive visual resources, and summarizing local policies relating to maintaining visual quality.

Visual resources are usually defined as the visual quality or character of an area, consisting of both the landscape features and the social environment from which they are viewed. The landscape features that define an area of high visual quality may be natural (e.g., mountain views) or manmade (e.g., city skyline). In order to assess the quality of visual resources in the action area, this section describes the overall visual character and distinct visual features on or in the viewshed of each installation or training area, as well as any sensitive viewpoints within these viewsheds. The analysis of visual resources examines the impacts on visual resources from both the installations and at a distance from the installations. In general, features beyond 1 mile (1.6 kilometers) are so distant that only forms and outlines are discernable, and visual impacts are negligible. Visual resources also include places of cultural importance, which are addressed in Section 3.10, Cultural Resources.

The visual character of an area is defined in terms of four primary components, including water, landform, vegetation, and cultural modifications. These components are characterized or perceived in terms of the design elements form, line, color, texture, and scale. Visual components also may be described as being distinct (unique or special), average (common or not unique), or minimal (a liability) elements of the visual field and in terms of the degree to which they are visible to surrounding viewers (e.g., foreground, middle ground, and background).

The visual quality of an area is defined in terms of the visual character and the degree to which these features combine to create a landscape that has the following qualities: vividness (memorable quality), intactness (visual integrity of environment), and unity (compositional quality). An area of high visual quality usually possesses all three of these characteristics. Visual quality of an area is also defined in terms of the visual sensitivity within the viewshed of the Proposed Action. Locations of visual sensitivity are defined in general terms as areas where high concentrations of people may be present or areas that are readily accessible to large numbers of people. They are further defined in terms of several site-specific factors, including the following:

- Areas of high scenic quality (i.e., designated scenic corridors or locations);

- Recreation areas characterized by high numbers of users with sensitivity to visual quality (i.e., parks, preserves, and private recreation areas); and
- Important historic or archaeological locations.

3.3.1 Introduction/Region of Influence

MMR is within the City and County of Honolulu (hereafter also referred to as Honolulu County), covering the Island of O‘ahu. PTA is within the County of Hawai‘i, covering the Island of Hawai‘i. Although the counties do not have jurisdiction over the use of federal lands, the Army considers the guidance contained in the general plans in its decisions, to the greatest extent practicable, in order to avoid or minimize conflicts with surrounding nonfederal lands. The county general plans provide policies and objectives with respect to scenic resources.

Mākuā Military Reservation

The ROI for MMR includes all areas within the line of sight of proposed training activities. Because high ridges surround most of MMR, the ROI is largely limited to views from the adjacent beach area, Farrington Highway, and areas of near-shore ocean. Very limited or intermittent views from adjacent publicly accessible trails or forest reserves are also considered to be part of the ROI.

General Plan for the City and County of Honolulu. As described above, the Army considers the guidance contained in general plans in its descions-making process. The General Plan for the City and County of Honolulu is a statement of the long-range social, economic, environmental, and design objectives for O‘ahu, as well as a statement of broad policies that facilitate attainment of the plan objectives (City and County of Honolulu 1992). Section III of the plan contains the objectives of the City and County of Honolulu with respect to scenic resources, including the following:

- Objective B: Preserve and enhance the natural monuments and scenic views of O‘ahu for the benefit of both residents and visitors.
- Policy 2: Protect O‘ahu’s scenic views, especially those seen from highly developed and heavily traveled areas.

O‘ahu is divided into eight planning areas, each of which has a development plan that implements the objectives and policies of the general plan and guides the long-range land use and infrastructure planning for the area.

MMR is within the geographic area represented by the Wai‘anae Sustainable Communities Plan of the General Plan for the City and County of Honolulu. The Wai‘anae Sustainable Communities Plan states that scenic resources and the open space character of the area should be preserved and protected for the enjoyment of many generations to come, but does not provide any specific guidance for visual resource management in the area (City and County of Honolulu 2000b).

In this plan, the land within the boundaries of MMR is classified as agriculture land. This classification was to preserve agricultural lands that contribute to open space and the rural character of the Wai‘anae community. Preserving open space and scenic beauty is a high priority for any developments that may affect the coastal lands, valleys, and mountains of the Wai‘anae District. This plan, as currently adopted, acknowledges military use of the lands at MMR (City and County of Honolulu 2000b). Public comments received during the EIS scoping process regarding visual resources include the potential fragmentation of cultural sites and geographic features, cleanup methods, and assurance that the land will remain aesthetically pleasing and able to support crops.

Pōhakuloa Training Area

The following discussion of visual resources includes PTA, the Keomuku Parcel (also referred to as the West PTA Acquisition Area - WPAA), and the PTA Trail.

General Plan for the County of Hawai‘i. The General Plan for the County of Hawai‘i is a statement of development objectives, standards, and principles with respect to the most desirable use of land within the county (County of Hawai‘i 1989). The long-range goals with respect to the natural beauty of the Island of Hawai‘i include the following:

- Protect, preserve, and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources;
- Protect scenic vistas and view planes from becoming obstructed; and
- Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

PTA, WPAA, and PTA Trail are within the planning area of the General Plan of Hawai‘i. 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).

3.3.2 Landscape Character Mākua Military Reservation

The landscape of MMR is characterized by panoramic views of the Pacific Ocean to the west and by the gently sloping open Mākua Valley, Kahanahāiki Valley, and rugged ridges and gulches of the Wai‘anae Range to the east. The Pacific Ocean is a dominant visual feature for *makai* (oceanward) views at MMR, ranging from a background feature, with a simple even form and smooth texture when viewed from the upper reaches of the valley, to a distinct foreground feature, with varied irregular form and coarse texture when viewed from the lower part of the valley or beach area.

Mauka (upland) views are of the gently sloping Mākua Valley and Kahanahāiki Valley landform, which rises gradually to create a smooth curving line that draws the eye up toward the steep jagged ridges. The valley is dissected by prominent gullies with steeper slopes of the Wai‘anae Range that rise sharply and enclose the valley floor.

Human-made features of MMR include parking areas, roads, gates, operational support buildings, a six-story observation tower, and various training areas. Many of these features have only a moderate effect on the visual character of the area because they are low relief, screened, bermed, or otherwise visually indistinct. Most training and support facilities are in the lower half of Mākua Valley, which is generally more open and devoid of vegetation tall enough to screen training activities. The training area is divided by Mākua Valley Road and bounded by the firebreak road. Prominent features of the training area include Punapōhaku Stream to the north, Ko‘iahi Gulch (also known as Kaiahi Gulch) to the south, and Mākua Stream to the east. The ordnance impact area used for live-fire exercises is limited to the area south of Mākua Valley Road and north of the Ko‘iahi Gulch. The southern half of the training site contains the training objectives, a combination of surface and subsurface emplacements and trenchments. A small demolition area is in the upper portion of the site.

Under normal conditions, vegetation in the valley consists largely of grasses and low shrubs that give the area a smooth even texture. The landscape color ranges from pale green to deep rich green, with dark areas along the slopes created by vegetation, rock outcroppings, and shadows.

The ridges of the Wai‘anae Range are a dominant background feature in the Mākua area. They are very irregular and rugged, with a coarse texture due to outcroppings of rock and vegetation. Vegetation on the ridges consists of shrubs and grasses that are rich green. Lands around MMR are largely undeveloped. Cultural modifications include roads, beach parks, and agricultural features.

This area has a high visual quality due to the panoramic views, the lack of substantial modifications that break up the visual character of the landscape, and the integrated form of the natural features.

Photograph 3.3-1 depicts a view of Mākua Valley looking east from Mākua Valley Road. The view from this vantage point shows the general terrain of MMR; the upper portion of the southern training area is in the right middle ground of the view. The training objectives, which lie farther to the right, are not visible in this view. Photograph 3.3-2 depicts a view looking south across Mākua Valley from the northern perimeter road. The view from this vantage point shows landscape characteristics similar to Photograph 3.3-1. The southern training area is clearly discernable. The training objectives are seen in the middle of the view along the upper portions of the valley floor. The perimeter roads are more easily recognized. From this vantage point, the vegetation is low and does not provide any screening effect.



Photograph 3.3-1 View of Mākua Valley looking east past the Southern Training Area



Photograph 3.3-2 View looking south across Mākua Valley

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. 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. Vegetation generally consists of grasses and shrubs that tend to be sparse and low in height.

Observatories are on Mauna Loa and Mauna Kea to the south and northeast of PTA. There are few human-made 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. Visible cultural features include walls, platforms, and many rock shelters.

The extremely uniform vegetation and topography result in middle ground 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. Photograph 3.3.-3 shows the view south from Saddle Road toward Pu‘u Keekee and Photograph 3.3-4 shows the view from Saddle Road near the PTA eastern boundary, looking west.



Photograph 3.3-3 View south from Saddle Road toward Pu‘u KeeKee



Photograph 3.3-4 View from Saddle Road looking west near the PTA Eastern Boundary

The proposed CALFEX range at PTA would be in the Twin Pu‘u area. Prominent features include the ‘a‘ā lava flow (Ke‘āmuku Lava Flow) about 0.25 mile (0.4 kilometer) to the north of the proposed range, Pu‘u Leilani at the northern edge of the proposed range, and Pu‘u Kulea and Pu‘u Moana about 0.75 mile (1.2 kilometers) to the south of Pu‘u Leilani. The terrain of the proposed range is relatively flat, consisting of pāhoehoe type lava flows and areas covered with grasses, primarily fountain grass. From an observational point along Saddle Road, about 3 miles (4.8 kilometers) to the north-northwest, the Twin Pu‘u area would be viewed as part of the PTA middle ground and background. Photograph 3.3-5 shows the view south at Twin Pu‘u Area.



Photograph 3.3-5 View south at Twin Pu‘u Area

Ke‘āmuku Parcel (also referred to as the West PTA Acquisition Area). The WPAA is in the Waikoloa area at the western foot of Mauna Kea. 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 are the primary activities in this area. The WPAA’s visual characteristics are similar to PTA because of its proximity. The ROI includes all areas within the line of sight of activities or changes proposed at PTA and its surroundings.

PTA Trail. The PTA Trail begins at Kawaihae Harbor (Photograph 3.3-6) and runs inland from the harbor on public roadways, near the lands of Pu‘ukoholā Heiau National Historic Site. The trail travels 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. The route is most visible where it parallels the Kawaihae Road and where it crosses the Hawai‘i Belt Road. Photograph 3.3-7 shows the view from Māmalahoa Highway looking north.



Photograph 3.3-6 View from Highway 19, looking northeast from Kawaihae Harbor



Photograph 3.3-7 View looking north from Mamalahoa Highway

Terrain along the PTA Trail is generally gently sloping with intermittent pu‘u. Lava flows that create dark, visually receding areas occur throughout the 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 landscape through which the trail passes 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. The middle ground and background views along PTA Trail lack visual complexity but are dramatic in their expansiveness because of the dominant features of Mauna Kea, Mauna Loa, Mt. Hualalai, and a number of volcanic cones (pu‘u).

The PTA Trail ROI includes a corridor of land along the route, extending from Kawaihae to PTA. It includes 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.

3.3.3 Effects of July 2003 Mākua Military Reservation Wildfire

After a wildfire at MMR in July 2003, the landscape character was temporarily altered, but the Pacific Ocean remained the dominant visual feature for makai views. When the foreground features were viewed from the lower part of the valley or beach area, a large part of the vegetation in the foreground fronting the MMR appeared blackened and charred, giving

way to irregular forms and coarse textures. Where grasses and shrubs were once the dominant vegetative cover, in many places only the blackened trunks of small trees had remained, while in other places patches of green grass still existed.

The landforms for *mauka* views remained the same. With the decrease in vegetative cover and the large increase of blackened ground cover as a result of ashes or charred vegetation, the landscape characteristics of the ROI had been temporarily altered. With blackened valley walls as their backdrop, the human-made features of MMR become more apparent. Patches of vegetation remained on the eastern wall of the valley within the training area bounded by the firebreak road, which resulted in random patches of grass and an uneven texture throughout the area. The valley walls beyond the perimeter of the firebreak road had little to no visible vegetation on them and were very irregular, with a coarse texture due to outcroppings and rocks. The landscape colors in the burned areas range from pale green or yellow to brown and various shades of gray.

The area with fire damage had a low visual quality due to the altered panoramic views, which break up the visual character of the landscape. Over time, the natural vegetation is expected to regrow, restoring the visual quality of the area. Since the wildfire in July 2003, the natural vegetation has made substantial gains in reestablishing itself throughout MMR.

MMR experienced a series of heavy rain events throughout the 2004 rainy season. The grasses and shrubbery in areas burnt in the fire have since reestablished themselves. The valley is once again an area with a high visual quality, with panoramic views and the integrated form of the natural features, which lack substantial modifications that break up the visual character of the landscape. Vegetation in the valley consists largely of grasses and low shrubs that give the area a smooth even texture. The landscape color ranges from pale green to deep rich green, with dark areas along the slopes created by vegetation, rock outcroppings, and shadows.

3.3.4 Sensitive Views Mākuā Military Reservation

The Wai‘anae Sustainable Communities Plan identifies a number of significant views, which include coastal views, mountain views and open space views (City and County of Honolulu 2000b). Mākuā Beach, which is part of the Ka‘ena Point State Park, and Farrington Highway, at the western end of the Mākuā Valley, are two locations where these sensitive coastal views occur.

Sensitive viewing locations are also found on trails adjacent to MMR. Hiking near MMR is limited to the Kuaokalā Trail and the Mokulē‘ia Fire Break Road, which are on DLNR land. Trail users are required to obtain permits from DLNR and check in with the permit at the Ka‘ena Point Tracking Station security guard station. The Mokulē‘ia Road follows the Mākua Rim above the Mākua Valley. Because the State of Hawai‘i requires users to obtain permits, these viewing locations are not frequently used (Photograph 3.3-8).

The ‘Ōhikilolo Trail on the southern ridge of MMR also provides several vantage points from which to observe training activities in Mākua Valley. However, the Army does not permit public use of this trail.



Photograph 3.3-8 View looking south across Mākua Valley from Mākua Rim Trail

Pōhakuloa Training Area

The General Plan of the County of Hawai‘i (County of Hawai‘i 1989) lists island locations as examples of natural beauty and includes the scenic countryside around Waiki‘i (TMK 6-7-01:003); the *mauka* and *makai* view plane from various locations along Queen Ka‘ahumanu Highway in South Kohala and North Kona; the Mauna Kea State Park area (TMK 4-4-16:003); and the Pu‘ukoholā 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 Pu‘ukoholā 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.