

4.3 VISUAL RESOURCES

4.3.1 Impact Methodology

This section identifies the method used to assess potential visual resources impacts that could result from implementing the project alternatives. The following methodology was used to determine visual impact assessment for the MMR alternatives. The PTA assessment generally followed this methodology.

The visual impact assessment methodology was based in part on the *Visual Resources Assessment Procedure for US Army Corps of Engineers* (USACE 1988), as well as on other visual resource-related documentation, such as general and specific plans. Visual impacts were assessed by estimating the amount of visual change to the basic visual resource components (water, landform, vegetation, and human-made elements) that could result from the project alternatives. Visual resource components typically are measured in terms of the amount of change in design elements, such as form, line, color, texture, and scale in the landscape. Within this context, the visual changes were evaluated in terms of the degree to which they could be visible to the viewer and the general sensitivity of the view to landscape alterations.

To accurately assess the potential impacts on visual resources at the project site, a standard method was established for evaluating existing conditions and potential visual impacts, and for formulating proposed mitigation measures. This method was composed of a multi-part visual impact assessment process and is outlined below.

Step One—Review visual resources-related documentation for the Islands of O‘ahu and Hawai‘i in general, as well as MMR and PTA in particular, and develop significance thresholds based on estimating the amount of visual change to the basic visual resource components, as a result of the project alternative. Critical viewing points were selected based on anticipated visual exposure from areas accessible to the general public.

Step Two—Conduct field reconnaissance at each of the designated viewing points identified in Step One. At each location, the view was observed and basic visual design components were noted. Also noted were any human-made objects considered unique to the surrounding area. A series of photographs, taken at each of the designated points, was shot from the most likely perspective to be experienced by the viewing public. A rating was applied to each view based on visual sensitivity, as follows:

- High sensitivity views are those that are rare, unique, or in other ways special, such as in remote or pristine areas. Examples of

areas that may have high visual sensitivity include national and state forests and parks, wilderness areas, wild and scenic rivers, and designated scenic trails and overlooks. Human-made environments with visual value and integrity, such as historic districts, can also be highly sensitive.

- Medium sensitivity views are those that are secondary in importance or that are similar to others in the region or locale. The visual character of these areas is likely to have been altered by roadways, vehicles, utility lines, and other structures that contrast with the surroundings. Examples of locations with medium sensitivity include undesignated but protected or popular areas of recreational or cultural significance.
- Low sensitivity views are those where the public can be expected to have little or no concern about changes in the landscape. Little value may be ascribed to the views, or they may be similar to many others in the area. For this EIS, visual sensitivity is considered low for all areas not identified as having medium or high sensitivity.

Step Three—Analyze each series of photographs to determine what was observed from each viewing point and to verify site features noted in Step Two. These panoramas were used to identify the foreground (0 to 0.25 to 0.5 mile [0 to 0.2 to 0.8 kilometer]), middle ground (0.25 to 0.5 to 3-5 miles [0.2 to 0.8 to 5-8 kilometers]) and background (3 to 5 miles to infinity [5 to 8 kilometers to infinity]) of each of the views.

Step Four—Identify specific impacts at each site, based on existing and proposed conditions. A determination of severity was applied to each impact, based on the degree to which impacts exceeded the significance thresholds described below. For each of the significant impacts, a mitigation measure was developed. Each mitigation measure was designed to minimize impacts on visual resources during future operations at MMR.

4.3.2 Factors Considered for Determining Significance of Impacts

Factors considered in assessing potential impacts on visual resources were set largely by the technical procedures that were used. For this project, procedures were adapted in part from *Visual Resources Assessment Procedure for US Army Corps of Engineers* (USACE 1988). These procedures outline the visual impact assessment process undertaken for this project. The evaluation of potential impacts was based on the project's potential to alter the visual character of the project area.

Factors considered in determining whether an alternative would have a significant impact on visual resources include the extent or degree to which its implementation would result in any of the following:

- Introduce physical features that are substantially out of character with adjacent developed areas;
- Alter a site so that a sensitive viewing point or vista is obstructed or adversely affected, or if the scale or degree of change appears as a substantial, obvious, or disharmonious modification of the overall view; or
- Be inconsistent with the visual resource policies of the Wai‘anae Sustainable Communities Plan of the General Plan for the City and County of Honolulu and the General Plan for the County of Hawai‘i.

4.3.3 Summary of Impacts

Visual impacts related to implementing the alternatives at MMR and PTA would be less than significant. Fugitive dust would cause no visual obstructions outside the installation boundaries. There would be an anticipated increase in fugitive dust at PTA due to range construction and training activities, but this would largely not be visible from surrounding sensitive views. A summary of potential impacts is presented below.

Summary of Potential Visual Resources Impacts

Impact Issues	No Action Alternative	Alternative 1 MMR (Reduced Capacity Use with Some Weapons Restrictions)	Alternative 2 MMR (Full Capacity Use with Some Weapons Restrictions)	Alternative 3 MMR (Full Capacity Use with Fewer Weapons Restrictions)	Alternative 4 PTA (Full Capacity Use with Fewer Weapons Restrictions)
Modification of existing view, to include the presence/use of training assets	⊙	⊙	⊙	⊙	⊙
Consistency with visual resource policies	⊙	⊙	⊙	⊙	⊙
Alteration of the landscape character, to include construction	⊙	⊙	⊙	⊙	⊙
Impairment of view from visible fugitive dust	⊙	⊙	⊙	⊙	⊙

LEGEND:

- ⊗ = Significant impact
- ⊙ = Significant impact mitigable to less than significant
- ⊙ = Less than significant impact
- = No impact
- + = Beneficial impact

No Action Alternative**Less Than Significant Impacts**

Modification of the existing view. Under the No Action Alternative, there would be reduced use of the training assets at MMR, some modification of the existing view, and some impacts on the existing view. Aircraft lasing, with semi-permanent structures and targets, and UAV flights would modify the existing view. Potential impacts on visual resources associated with this alternative would be less than significant because no sensitive viewpoints would be altered.

Consistency with visual resource policies. No Action would be basically consistent with visual resource policies. Areas within the viewshed of MMR are not listed as significant views and are substantially consistent with the visual preservation objectives stated in the Wai‘anae Sustainable Communities Plan. Training would occur in areas that would not significantly alter views from public roadways or sensitive view areas.

Impairment of view from visible fugitive dust. Under No Action, there would be reduced use of the training assets at MMR, very limited generation of visible fugitive dust from training activities, and minimal impacts on the existing view. These visual impacts would be less than significant.

Alteration of the landscape character. No Action would allow the vegetation in the training area to reestablish itself, except for parts of the CCAAC. Over time, the visual landscape at MMR would become more consistent with its surrounding areas and neighboring valleys. For aircraft lasing, there would be placement or construction of semi-permanent structures. The placement of these targets or other training features would not alter the nature of the visual landscape. Additionally, most of the training activities would not be visible from potentially sensitive viewing locations due to topography, or current access restrictions, or would occur at such distances as to not be discernable. The potential impact on the landscape character would not be significant.

Alternative 1 (Reduced Capacity Use with Some Weapons Restrictions)**Less than Significant Impacts**

Modification of the existing view. Under Alternative 1, the use of the training assets at MMR would result in the presence of military personnel and equipment for most of the year. The visual impacts from the presence of aircraft include temporarily adding features to the valley that are not consistent with the natural surroundings. The visual impact from the presence of aircraft would be limited because aircraft would be used at MMR primarily as part of the company-level CALFEXs. While in flight,

aircraft would be visible from sensitive viewing locations, such as Mākua Beach, Farrington Highway, and adjacent trails. Although the increased presence of personnel and equipment would temporarily add features to the valley that are not visually consistent with the natural surroundings, most of these features and training activities would not be visible from potentially sensitive viewing locations due to topography or current access restrictions. Impacts on views from Farrington Highway resulting from training activities, such as bivouacking and convoy training, would also be less than significant because they would last only for the duration of each exercise. Nighttime training would not result in increased impacts on existing views, aside from the presence of military personnel and their equipment. Live-fire training with high explosive rounds under this alternative would increase the potential for wildfires and disturbance of soils and vegetated areas. Until vegetation was reestablished, areas burned or left bare as a result of a wildfire or soil and vegetation disturbance would temporarily detract from views (refer to Section 4.8, Geology and Soils, for discussion of soils impacts and Section 4.14, Wildfires, for discussion of wildfire impacts).

The temporary use of MMR for demolitions training under Alternative 1 also would result in additional military presence and its impacts on existing views. Potential impacts on visual resources associated with this alternative would still remain less than significant because no sensitive viewpoints would be altered.

Consistency with visual resource policies. Training 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 Wai‘anae Sustainable Communities Plan.

Alteration of the landscape character. Implementing Alternative 1 would not involve construction or other substantial modifications in the Mākua Valley. The placement of targets or other training features would not alter the nature of the visual landscape and would be at such distances as to not be discernable; therefore, the potential impact on the landscape character would not be significant.

Impairment of view from visible fugitive dust. Under Alternative 1, the use of training assets would result in limited visible fugitive dust. Vehicles would generally travel on existing roads and trails. Helicopter landing areas have partial or full grass cover. Training events that would result in fugitive dust would be of short duration, and fugitive dust impacts would cease following completion of the exercise. Exposed areas are limited in size at MMR, resulting in minor impacts from wind erosion from these disturbed areas. These visual impacts would be less than significant.

Additionally, most of the training activities and resulting fugitive dust would not be visible from potentially sensitive viewing locations due to topography or current access restrictions.

Alternative 2 (Full Capacity Use with Some Weapons Restrictions)

Less than Significant Impacts

Modification of the existing view. Impacts associated with Alternative 2 would be similar to those described above for Alternative 1. The increased presence of military personnel and their equipment to support up to 50 company-level CALFEXs would modify the existing view. Compared to Alternative 1, the use of tracers and the increased number of high explosive rounds would further increase the chance of wildfires and disturbance of soils and vegetated areas. Potential impacts on visual resources associated with this alternative would still remain less than significant because no sensitive viewpoints would be altered.

Consistency with visual resource policies. Impacts associated with Alternative 2 would be similar to those described above for Alternative 1. Training activities would be substantially consistent with the visual preservation objectives of local policies.

Alteration of the landscape character. Impacts associated with Alternative 2 would be similar to those described above for Alternative 1. The alteration of the landscape character would not be significant.

Impairment of view from visible fugitive dust. Impacts associated with Alternative 2 would be similar to those described above for Alternative 1. Potential impacts would be less than significant.

Alternative 3 (Full Capacity Use with Fewer Weapons Restrictions)

Less than Significant Impacts

Modification of the existing view. Impacts associated with Alternative 3 would be similar to those described above for Alternative 2. The expanded training area and use of inert TOW missiles, 2.75-caliber rocket, and illumination munitions would result in increased impacts on existing views because they would further increase the chance of wildfires and soil and vegetation disturbance as compared to Alternative 2.

Consistency with visual resource policies. Impacts associated with Alternative 3 would be similar to those described above for Alternative 2. Training activities conducted under Alternative 3 would be substantially consistent with the visual preservation objectives of local policies.

Alteration of the landscape character. Impacts associated with Alternative 3 would be similar to those described above for Alternative 2. The alteration of the landscape character would not be significant.

Impairment of view from visible fugitive dust. Impacts associated with Alternative 3 would be similar to those described above for Alternative 1. Potential impacts would be less than significant.

Alternative 4 (Full Capacity Use with Fewer Weapons Restrictions), Pōhakuloa Training Area

Less than Significant Impacts

Modification of the existing view. The location of the CALFEX range is such that no change in visual quality is anticipated from implementation of this alternative. Training 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 view from Saddle Road as a traveler enters PTA from the west 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 Saddle Road near the entrance to PTA, from east or west, the CALFEX range would be near or beyond the horizon.

The view from Saddle Road near the cantonment area 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 CALFEX range site would be screened from view from Saddle Road by the terrain.

The view from Saddle Road south and east of the cantonment area 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 middle ground within this view. The CALFEX site, which lies to the west, would not be discernable.

The view from Saddle Road as the traveler enters PTA from the east is 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 CALFEX range would be beyond the horizon in this view.

The CALFEX range at PTA would be in the Twin Pu‘u area. There would be no significant impact on an existing view or landscape. The range site is remote and 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.

Implementation of this alternative would result in increased training use of nighttime lighting devices, such as flares. However, their use would not be expected to increase dramatically because night vision goggles would be used during nighttime operations in training areas. The increased use of lighting devices for training would mostly be in the WPAA and not in Army areas closest to astronomical facilities and observatories on Mauna Kea, 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.

Keomuku Parcel (also referred to as the West PTA Acquisition Area – WPAA). The WPAA is in the Waikoloa area, at the western foot of Mauna Kea. It has visual characteristics similar to PTA because of its proximity. Under this alternative, visual impacts would be similar to those for PTA and would be less than significant.

PTA Trail. Until the Army could use the PTA Trail, troops and equipment would be transported via convoys on public roadways to access PTA from Kawaihae Harbor. Military trucks and/or Stryker vehicles would use state and county two-lane roads to and from PTA. A convoy would travel on Kawaihae-Waimea Road to Māmalahoa Highway and onto Saddle Road, or on Queen Kaahumanu to Waikoloa Road to Mamalahoa Highway onto Saddle Road.

With use of the PTA Trail, troops and equipment would be transported between Kawaihae Harbor and inland to PTA. Trail use by military units would increase and add inconsistent visual elements along the route. Visual impacts would be less than significant due to the intermittent and temporary nature of military vehicles on public highways or the PTA Trail. Most views along the route would be obscured by vegetation or terrain, and would not be visible from any sensitive view points.

Segment 1 of the route would extend from Kawaihae Harbor adjacent to Highway 19 (also referred to as Queen Ka‘ahumanu Highway) to the Highway 19 trail crossing. Military vehicles would use the public

roadways in the area, bypassing the Pu‘ukoholā Heiau National Historic Site. This segment of the route would be visible from residential areas and to motorists on Highway 19 looking north, but would not be visible to visitors of the historic site. Highway 19 is not designated as a scenic route, but the road is highly traveled. This area, especially near Kawaihae Harbor, has been extensively altered.

Segment two of the route would be the PTA Trail and would extend 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 middle ground, 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 would be open land, consisting of grasses and shrubs, with periodic areas of lava. Much of the trail alignment would not be 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.

Segment three of the trail would extend from the Hawai‘i Belt Road to PTA. This segment would 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. 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.

Consistency with visual resource policies. Under this alternative, construction and training at 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 Hawai‘i. Because the Army currently uses PTA for weapons qualification and maneuver training, there would be no significant alteration of land use or requirement to significantly change landform or vegetative cover.

Alteration of the landscape character. Under this alternative, a CALFEX range would be constructed at PTA. This would introduce new structures and additional training maneuvers that could be visually incompatible with the surrounding natural features. These features would not be expected to

significantly alter the landscape character because they would not involve large changes in land form, would largely be obscured by topography, lava flows, and vegetation, and would be at such distances from sensitive viewing locations that visual detail would be lost.

No construction in the WPAA is anticipated under this alternative. Visual impacts would be similar to those for PTA and would be less than significant.

Impacts from the PTA Trail construction are discussed in the 2004 SBCT EIS. Use of the PTA Trail for units training at the PTA CALFEX range would not significantly affect an existing view or landscape. The CALFEX range would not be visible from surrounding sensitive viewing areas.

Impairment of view from visible fugitive dust. As discussed in Sections 4.4, Air Quality, and 4.8, Geology and Soils, training at PTA would increase fugitive dust. Vehicles traveling on unpaved roads would be an ongoing intermittent source of fugitive dust emissions. Wind erosion from areas disturbed by vehicle maneuver activity would be an additional permanent source of fugitive dust emissions. Under this alternative, dismounted maneuver training would be conducted. Vehicles would be largely confined to existing roads and trails, minimizing visible fugitive dust. Although winds would create visible fugitive dust clouds, the concentration of dust would quickly diminish. Additionally, the training areas are largely outside the public viewshed. Implementation of the fugitive dust and soil mitigation measures identified in Sections 4.4, Air Quality, and 4.8, Geology and Soils, would minimize soil erosion and compaction. As a result, visual impacts from visible fugitive dust would be less than significant.