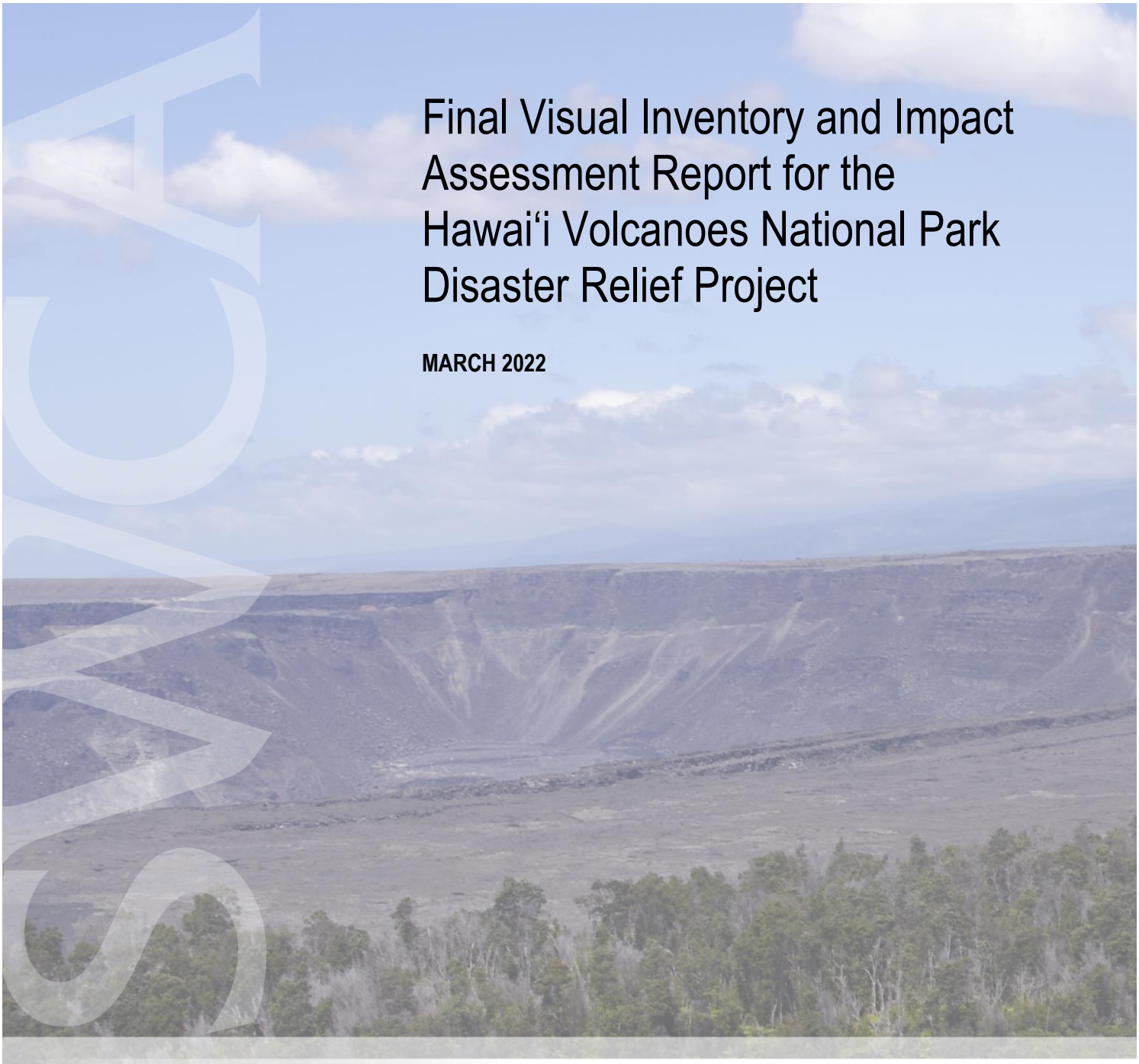
Appendix D

Final Visual Inventory and Impact Assessment Report for the Hawai‘i Volcanoes National Park Disaster Relief Project



Final Visual Inventory and Impact Assessment Report for the Hawai‘i Volcanoes National Park Disaster Relief Project

MARCH 2022

PREPARED FOR

Hawai‘i Volcanoes National Park

National Park Service

PREPARED BY

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FINAL VISUAL INVENTORY AND IMPACT ASSESSMENT REPORT FOR THE HAWAIʻI VOLCANOES NATIONAL PARK DISASTER RELIEF PROJECT

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1 EXECUTIVE SUMMARY

Based on damage to park facilities at Hawai'i Volcanoes National Park (Hawai'i Volcanoes) from the 2018 volcanic activity and associated earthquakes, the Hawai'i Volcanoes National Park Disaster Relief Project (Project) involves the improvement, replacement, or removal of park facilities. The Project has three component areas: (1) replacement visitor center and road improvements near the park entrance, (2) redesign of the facilities on Uēkahuna Bluff area including the removal of structures, and (3) new U.S. Geological Survey (USGS) field station adjacent to the historic ball field near Kilauea Military Camp (KMC).

The visual resource inventory and impact assessment was completed using an updated process developed by the National Park Service titled *2021 Draft National Park Service Visual Impact Assessment Methodology and Guidelines.* These methods focused on seven key observation points (KOPs), or viewpoints, to assess (1) relative change in a view from the development of the Project and the potential impacts on the visual landscape, (2) the effect on the viewer experience considering different user groups, (3) the impact to park interpretive themes and the stories communicated to visitors, and (4) the overall impact to park resources and visitors.

In summary, the Project would increase visitor interpretive opportunities both at the Kīlauea Visitor Center (KVC) and on Uēkahuna Bluff as well as provide an experience more in tune with the area's natural, cultural, and historic character. The removal of structures on Uēkahuna Bluff would result in beneficial impacts on views, including those across Kīlauea Crater, as well as implementing guidance from the 2016 Hawai'i Volcanoes General Management Plan (GMP) for the area. The addition of the replacement visitor center would expand the area viewed as modified within the park's Visitor Services Zone, leading to a more recreation-focused landscape within the kauhale (integrated campus), but this would be counterbalanced by the additional interpretive opportunities resulting in low adverse impacts. Proposed transportation improvements near the park entrance station, including the construction of a traffic circle, new wayfinding signage, and entrance road to the KVC, would facilitate increased opportunities to explore the park initially and decreased wait times during volcanic events, but since Project would introduce transportation features into a mostly natural setting shortly after passing the park entrance station, moderate adverse impacts would occur in this area. The proposed USGS field station would impact the historic setting adjacent to KMC, introducing a more modern building into a view dominated by historic structures, but would occur in an area with limited existing interpretive opportunities resulting in low adverse impacts. The application of mitigation measures during the design of the Project facilitated these reduced impacts, including limiting the height of proposed buildings, choosing building materials and colors to match existing park facilities, increasing site interpretive opportunities, maintaining and expanding native landscape plantings, and retaining enough of the existing berm on Uēkahuna Bluff to screen views of the Project. Overall, the Project would further the park's mission as well as meet management zone and site-specific guidance from the GMP.

2 INTRODUCTION

Hawai'i Volcanoes was established by the U.S. Congress in 1916 for the purpose of protecting, studying, and providing access to Kīlauea and Mauna Loa in addition to perpetuating endemic Hawaiian ecosystems and traditional Hawaiian culture connected to these landscapes. In 2018, increased volcanic activity and associated earthquakes led to damage to park facilities, including those located on the edge of Kīlauea Crater and near Halema'uma'u Crater on Uēkahuna Bluff. The Project involves the improvement, replacement, or removal of park facilities after the 2018 volcanic disaster.

3 PROJECT BACKGROUND

The Project has three components: (1) the replacement visitor center as well as a series of road improvements near the park entrance, (2) redesign of the Uēkahuna Bluff area including removal of structures and redesigning the scenic overlooks, and (3) a new USGS field station adjacent to the historic ball field near KMC.

3.1 Project Design Visual Characteristics

The proposed development and redesign of the three areas vary in regard to their character, proposed elements, and potential key sources of visual contrast. The following descriptions have been separated by Project component area:

Park Entrance/KVC: Due to the closing of the Jaggar Museum, there is increasing visitation at the KVC, leading to crowding and potential decreasing visitor experience. The proposed design includes a replacement visitor center (5,900 square feet [sf]), new restroom facility (1,130 sf), covered lanai (7,500 sf), and expanded parking (229 visitor parking stalls, 16 bus parking stalls, and 22 staff parking stalls). The height of the replacement visitor center at its highest point would be approximately 24 feet along the main roof ridgeline. The long ridgelines and triangular forms in the roofline are similar to the existing KVC. By using similar materials to the existing KVC, including lava rock and fiber cement siding (mimicking wood siding), the potential visual contrast introduced by the replacement visitor center would be reduced. In addition to the new structure and expanded parking lot, there are proposed road improvements along Crater Rim Drive near the park entrance station. These road improvements include a new traffic circle as well as the realignment of the park entrance road, a new entrance from Crater Rim Drive to access the KVC area, a new staff parking lot near the park entrance, and the installation of new signage. Anticipated key sources of visual contrast in the design are associated with (1) "opening up" of views from the construction of the new traffic circle close to the park entrance station, (2) modifying the existing character of the park entrance area through road expansion, (3) the scale of the proposed replacement visitor center potentially dominating the character created by the existing KVC, and (4) final selection of building materials (roofing, siding, paint color, etc.) to maintain the visual character of the KVC area.

Redesign of Uēkahuna Bluff: As mentioned previously, the Jaggar Museum has been closed since the 2018 volcanic activity. The proposed design removes the Jaggar Museum, USGS Hawaiian Volcano Observatory (HVO) building, Geochemistry Annex building, and existing water tanks with the goal of restoring native vegetation in these previously disturbed areas. Other existing structures, including the restroom building and radio tower, as well as the parking area, are to remain in the updated design. A scenic overlook is proposed in the same footprint as the former Jagger Museum overlook. A replacement water tank is also proposed to provide water to the existing restroom building; it could be visually screened through retaining some of the berm north of the existing water tanks.

The overall design proposal focuses on limiting new disturbance both from a physical footprint standpoint as well as limiting vertical elements in the design. The proposed new overlook is not elevated but instead was designed to be low profile and blend with the existing setting. Anticipated key sources of visual contrast in the design are associated with the (1) rock wall surrounding the former Jaggar Overlook, (2) proposed replacement water tank and redesign of the berm, and (3) restoration of previously disturbed areas, including the footprint of the former Jaggar Museum and HVO.

New USGS Field Station: As described for the Uēkahuna Bluff area, the existing USGS field station (HVO) will be demolished with the plan that some scientific instruments will remain but with field

operations moving to a new location near KMC. The proposed location for the new USGS field station is adjacent to the historic ball field. The proposed design includes a new two-story field station, pump house, water tank, and a parking area (approximately 35 parking stalls). The height of the proposed field station along its split-gable roofline is 38 feet. The materials for the building were chosen to match other structures in the park, including the use of a rock foundation, earth-tone fiber cement siding (mimicking wood siding), and a metal roof. Anticipated key sources of visual contrast in the design are associated with (1) visibility from Crater Rim Drive with the new proposed building potentially being the first structure visible as visitors return from Uēkahuna Bluff, (2) modifications to the historic setting in KMC through the introduction of potentially incompatible built elements, and (3) removal of existing vegetation surrounding the proposed USGS field station potentially opening up views from cabins and other use areas in KMC.

3.2 Visual Context

The entirety of the park is in the Hawaiian High Island Ecoregion (Nature Conservancy 2018) which is composed of many micro-climate zones depending on elevation and orientation to typical wind directions. The proposed Project component areas are at an elevation of approximately 4,000 feet and include both Kīlauea Crater, with its expanding caldera, and the dense forest surrounding the KVC. The rain shadow produced by Mauna Loa and the effect of long-term volcanic activity on Kīlauea creates two distinctive vegetative zones in the study area even though Project component areas are located less than 2 miles apart.

The wet forest composed of mostly ʻōhiʻa lehua, koa, and hapuʻu adjacent to the KVC forms a dense canopy where buildings are "cut out" of the forest, forming mostly enclosed landscape settings. Within this KVC area, there are multiple historic structures including the Volcano Art Center (former 1877 Volcano House, relocated to its current location in 1921), the current Volcano House (built in 1941), and the ʻŌhiʻa Wing (former 1932 administration building). Terrain is generally flat to rolling except closer to the edge of Kīlauea Crater, where multiple benches have been formed by volcanic activity with steep drop-offs between each bench.

The dry forest on Uēkahuna Bluff contains scattered ʻōhiʻa lehua, grasses, and other vegetation that is primarily located in low points or depressions in the landscape formed by undulating and cracking lava flows. These cracking, settling lava flows form the edge of the crater rim with a steep drop into Kīlauea Crater and then into Halemaʻumaʻu Crater, where the crater floor lies approximately 1,500 feet below Uēkahuna Bluff. Due to the limited vegetation in the area and rolling terrain, views are generally unobstructed across the caldera. Uēkahuna Bluff is a sacred site for some Native Hawaiians and continues to be the site for Native Hawaiian rituals and cultural practices.

The KMC is located at the edge of the wet forest area along Crater Rim Drive and includes areas of turfgrass and ornamental landscaping. The camp is a 54-acre U.S. Army–operated historic recreation complex that was established in 1916 on park land and over time was developed to have 90 rooms for overnight accommodations as well as a variety of other supporting amenities. Similar to the KVC area, the terrain is flat to rolling except near the edge of Kīlauea Crater. Beyond the boundary of KMC, the dense adjacent vegetation forms a mostly enclosed landscape setting. The KMC complex is not open to the general public; access is allowed only for authorized patrons. The area has a developed recreation character (cabins, open spaces, and sports facilities) that is unique in the park compared to the more common natural-lands recreation focus throughout the park.

3.3 Area of Visual Effect

The area of visual effect (AVE) defines the geographic extent of the analysis area for this Project's inventory and impact assessment. The AVE was identified based on a viewshed analysis run from the proposed Project components to identify the total area that may have visibility of the Project. Due to the presence of dense vegetation, especially in proximity to the KVC and KMC, the results of the bare-earth viewshed have limited effectiveness and were supplemented by multiple site visits. The AVE was determined to encompass the area within 3 miles of Project components, which corresponds to the boundary between the middle ground (0.5–3 miles) and background (more than 3 miles) visual distance zones.

Within the AVE, seven KOPs (or viewpoints) were identified through coordination with Hawai'i Volcanoes staff to assess the effect of the construction, operation, and maintenance of the Project. The following KOPs are further described in Section 5.2 and are depicted on Figure 1:

- **KOP 1: Park Entrance Road –** Located where the Project may change the experience after passing the park entrance station along a densely vegetated road corridor.
- **KOP 2: Kīlauea Visitor Center Entrance –** View of the current entrance to the KVC parking lot where the replacement visitor center and parking lot would be visible adjacent to the existing KVC.
- **KOP 3: Crater Rim Trail –** View up the trail where proposed modifications on Uēkahuna Bluff would be visible, including the replacement water tank and redesigned berm.
- **KOP 4: Volcano House Overlook –** Located at a popular scenic overlook behind the historic Volcano House (hotel) with views across the caldera toward the proposed modifications on Uēkahuna Bluff from a middle ground perspective.
- **KOP 5: Crater Rim Drive West of Kīlauea Visitor Center –** Located where motorists and hikers would have their first view of the developed area adjacent to the KVC, including the Project, as they return from the Steam Vents area and approach the KVC.
- **KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field –** View from the road where the proposed USGS field station could be visible through gaps in the existing vegetation as motorists drive toward the KVC.
- **KOP 7: Kilauea Military Camp –** View from the KMC entrance area, adjacent to the front office and front row of cabins, toward the proposed USGS field station.

Figure 1. Project Overview Map

4 REGULATORY FRAMEWORK

Visual resource policies from relevant National Park Service documents were gathered to form a baseline for the visual resource study and are described below.

4.1 National Park Service Organic Act

The National Park Service Organic Act of 1916 directs the National Park Service "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (National Park Service 2021a).

4.2 National Park Service Visual Impact Assessment Methodology and Guidelines

An updated process has been developed by the National Park Service to address visual resource inventory and impact procedures titled *2021 Draft National Park Service Visual Impact Assessment Methodology and Guidelines* (National Park Service 2021b). These methods were developed to make the process understandable for a wider audience, inform park management, and enhance collaboration with stakeholders. The first goal of these methods is to evaluate the relative change in a view from development of a project (or other activity) and the potential impacts on the visual landscape. These changes are evaluated from selected viewing locations or KOPs, which form the basis for the subsequent inventory and analysis. In addition to the level of visual change (or contrast) introduced by a project, these methods analyze the effect on viewer experience, National Park Service interpretive opportunities, and on overall park visual resources. More detail on the inventory and impact assessment methodologies for this Project are described in Sections 5.1 and 6.1 respectively.

4.3 Hawai'i Volcanoes National Park General Management Plan

The GMP (National Park Service 2016) was developed prior to the most recent major volcanic activity, which occurred in 2018. The GMP established four management zones (Park Support Zone, Transitional/Semi-Primitive Zone, Visitor Services Zone, and Wild/Primitive Zone) based on the general level of management direction including the types of activities and facilities that are appropriate in each management zone.

The proposed Project elements associated with the KVC, entrance area, and Uēkahuna Bluff would be located within the Visitor Services Zone, which is managed primarily for a high level of visitor use, access, and interpretation with a wide range of media and facilities to support diverse visitor needs. Specific Visitor Experience/Scenic Resource direction for this zone from the GMP is described below (National Park Service 2016):

- **Overall Conditions:** This zone is the primary visitor use zone. Visitor opportunities, experiences, and services are emphasized with high levels of access to features, resources, and personal services. This zone has capacity for a large number of park visitors and is an access point for park experiences and opportunities. There is high probability of contact with rangers, park staff, and other visitors. Commercial services and concession facilities are readily available in conjunction with the park mission.

- **Types of Visitor Activities:** This zone supports a wide range of visitor activities, opportunities, and services with easy access to recreation, education, and interpretation programming. Activities are available to visitors of all abilities and can include large groups. Typical activities include ranger-led programs, biking, hiking, picnicking, scenic driving, sightseeing, star gazing, camping and overnight stays, lava viewing, birding, educational and stewardship programs, cultural demonstrations, special events, and commercial visitor services activities.
- **Interpretation and Education Programming:** Visitors have opportunities to connect with the meanings and themes of the park. A wide variety of interpretive methods provide connections between the meanings and values of the resource being highlighted. This zone provides orientation and intensive interpretation that is programmatically accessible with a wide range of media and facilities to support diverse visitor needs. The focus is placed on interpreting, protecting, and preserving geologic, biologic, and cultural resources and emphasizing specific stories or themes.
- **Encounters with Other Visitors:** A high level of encounters with other visitors is expected, but concentrations of visitors are managed. Visitors can expect congested experiences during peak visitation hours. A wide range of group sizes, ages, and diverse populations may be accommodated.
- **Safe Visitor Access to Volcanic Events:** This zone supports the highest level of visitor access that provides safe viewing. Access to volcanic events for visitors is made available as quickly as possible with an appropriate level of visitor orientation. This zone also supports the highest level of operational support.

The proposed USGS field station would be located within the Park Support Zone (note: KMC is not open to general public), which is managed primarily to support park operations and maintenance, including the operational needs of park partners. Access for visitors is primarily for limited visitor services (such as backcountry permitting), orientation, and organized meetings or events. Specific Visitor Experience/Scenic Resource direction for this zone from the GMP is described below (National Park Service 2016):

- **Overall Conditions:** This zone is managed for limited visitor access to services such as permitting, organized meetings or events, and limited orientation.
- **Types of Visitor Activities:** This zone supports very limited visitor activities and use.
- **Interpretation and Education Programming:** Interpretive and education programming in this zone occurs primarily in specific facilities designated for this purpose such as the Visitor Emergency Operations Center and the Education Center.
- **Encounters with Other Visitors:** A low level of encounters with other visitors is expected. Encounters are primarily around facilities and services that do provide some visitor support (e.g., permitting offices).
- **Safe Visitor Access to Volcanic Events:** Visitor access that provides safe viewing for visitors could be accommodated in this zone.

Additionally, site specific management guidance is provided in the GMP for (1) the KVC and surrounding area and (2) Jaggar Museum and HVO.

(1) The KVC and surrounding areas are part of an integrated campus, or kauhale, that includes the KVC, ʻŌhiʻa Wing, Volcano Art Center, Volcano House, pā hula (place reserved for hula dancing), and other buildings within the vision of the entire campus to improve visitor services. The priority would be to keep

development within the existing footprints, but modest expansion may be necessary to achieve the overall vision and to accommodate walkways, improve circulation, and reduce conflicts between vehicles and visitors. Specifically for the KVC, the GMP suggests increasing parking and expanding the covered lanai space to address increased visitor use.

(2) The GMP identifies three options if the Jaggar Museum and HVO were significantly damaged or destroyed during volcanic activity (National Park Service 2016):

- Repair or rebuild the Jaggar Museum and HVO in the current location to the greatest extent possible. Keeping the facilities on the edge of Kīlauea Caldera and in close proximity to Halema'uma'u Crater continues the link between science and visitor interpretation that has been instrumental at Hawai'i Volcanoes. Both buildings also have their own cultural significance with the site.
- Explore alternative locations, preferably inside the park and off the crater edge and Uēkahuna Bluff but still within Kīlauea Caldera, to maintain continuity for the historic visitor experience and scientific operations as much as possible.
- Remove all facilities from the edge of Kīlauea Caldera, and specifically Uēkahuna Bluff, restore the site as a sacred place to Native Hawaiians, and strive to rebuild the functions provided by Jaggar Museum and HVO in a less culturally sensitive location, outside the park. The park and USGS would maintain the minimum amount of instrumentation and infrastructure necessary for monitoring volcanic activity, but offices and other components of HVO would be relocated outside the park. The visitor exhibits provided by Jaggar Museum would preferably be relocated to other buildings within the park, but could be combined with a new HVO facility, depending on location and proximity to the park.

The GMP also provides specific Scenic Resources mitigation measures as follows:

- Where appropriate, use facilities such as boardwalks and fences to route people away from sensitive natural and cultural resources while still permitting access to important viewpoints.
- Design, site, and construct facilities to minimize adverse effects on natural and cultural resources and visual intrusion.
- Provide vegetative screening, where appropriate.
- Implement vegetation management, which could include selective clearing to manage or improve important viewpoints and viewsheds while minimizing impacts to native vegetation and wildlife habitat.

5 INVENTORY

The inventory of visual resources, based on the new draft National Park Service visual impact assessment methods and guidelines document, focuses on the seven KOP locations identified in Section 3.3. The following section first outlines the methodology to inventory existing visual resources from the KOP locations with subsequent subsections documenting (1) the existing conditions from each KOP, (2) viewer groups and their sensitivity to changes in their viewshed, and (3) how these locations fit within overall National Park Service management.

5.1 Methodology

From each KOP location, a series of data were collected to identify the qualities and condition of the existing landscape and the viewer groups associated with those locations. To inventory the existing landscape, a *View Inventory Form* was completed describing the (1) existing landscape character, (2) visual elements (form, line, color, and texture), and (3) the spatial composition of the view. These forms provide the basis for the existing landscape description, focusing on the dominant landscape character type, integrity, variety, view type, key landscape features, and the style of built features.

In addition to the existing landscape, knowing the types of viewers who visit and use each KOP area is key to understanding their visual expectations and overall sensitivity to changes in the viewshed. The first inventory component is the type of viewer (casual eye, critical observer, or repeat local observer). Casual eye viewers expect to see a scenic landscape but often have little prior knowledge about the location and depend on and enjoy interpretation to gain information. Critical observers have special knowledge that contributes to their interpretation of the view (e.g., photographers, painters, bird watchers, etc.); authenticity of the place may be an important item for these viewers. Repeat local observers include park staff, partners, and commercial use authorization holders, as well as visitors whose connection to the landscape is generational with a considerable concern for changes in the landscape. The overall sensitivity to changes in these views are based on the user group, number of visitors, duration of view, and the specific activities occurring at each location. Seasonal variation was also considered, including increased visitation during volcanic events and in the winter and spring seasons.

The final component in the visual inventory is the National Park Service interest as it relates to how these KOP locations fit within the larger park-wide management themes. Through coordination with park staff, each KOP and viewed landscape was assessed based on its (1) importance, (2) uniqueness, and (3) commitment of National Park Service funds and staff time needed to accommodate and enhance viewer experience. By inventorying these components, the effect on the park and its management can be assessed in consideration of the visual change proposed by the Project and the viewer's response to that change.

5.2 Existing Landscape

Key information from the *View Inventory Forms* completed for each KOP location, included in Appendix A, is summarized in Table 1.

Table 1. Key Observation Point Existing Landscape

KOP Number	Landscape Character	Visual Elements	Spatial Composition
KOP 1: Park Entrance Road	The character adjacent to the park entrance road is mostly natural except for the park entrance station, roadway, signage, and distribution power line crossing over the road. The dense forest surrounding the road forms an enclosed, narrow corridor. The repeating vegetation types and patterns create a simple setting leading to the KVC. The park entrance station is made of lava rock with a tall metal roof accompanied by typical National Park Service wood and metal signage along the road.	The park entrance station has a blocky, angular form contrasting with the dense, rounded form associated with the adjacent forest canopy. Vertical and angular lines are present in the park entrance station and signage with curving lines created along the roadway as it turns toward the KVC. A wide range of greens are present in the vegetation with gray and brown being the predominant colors of human modifications in this setting (signage and park entrance station).	The view is well balanced and in scale, as the built elements do not dominate the natural setting. The park entrance station is located in the middle of the roadway (creating symmetrical balance) and none of the built elements are taller than the adjacent forest. The roadway corridor (and park entrance station) are the primary focal points in the setting. The continuity of the setting is generally unified except for the park entrance station and roadway, which have carved a path through the forest. The entrance area is ordered with minimal modifications except for the facilities to support the park entrance, which follow the roadway.
KOP 2: Kīlauea Visitor Center Entrance	The landscape adjacent to this KOP has been modified by the presence of the existing KVC, parking lot, entrance road, and other park infrastructure. The dense forest surrounding this KOP location creates an enclosed setting. The area's natural developed character has a low level of landscape diversity as each building in the kauhale (integrated campus) is within a separate cleared area with partial vegetative screening between structures. The dominant materials used in the KVC are lava rock and wood with a shingle roof displaying distinctive pyramidal roof forms.	The KVC has a blocky, angular form which contrasts with the dense rounded form generated by the adjacent forest. Vertical lines occur in the signage and light posts with the KVC introducing horizontal and angular lines. The KVC is constructed of dark colored lava rock, dark brown siding, and a brown roof. The adjacent vegetation is composed of a range of greens with a uniform, medium texture. Rough textures are found in the KVC, including the vertical form of the building's chimney and pyramidal roof forms.	The KVC and adjacent forest are in visual balance and of appropriate scale since the forest vegetation is taller than any built structure. The KVC attracts attention in the setting and is a focal point in the landscape as the large opening in the forest interrupts the continuity of the surrounding forest setting. The KVC area is ordered and designed, including ornamental landscape plantings and large parking areas.

KOP Number	Landscape Character	Visual Elements	Spatial Composition
KOP 3: Crater Rim Trail	The landscape setting is largely natural appearing except for the presence of structures on the bluff including the HVO, Jaggar Museum, and restrooms, which have modified the highest portion of the bluff. The overall setting is diverse with panoramic views of Kīlauea and Halema'uma'u Craters and Mauna Loa. Vegetation adjacent to the KOP is composed of short, scattered shrubs and grasses. The structures are made of lava rock and wood with metal roofs. The existing HVO has a taller observation tower that rises above the other single-story structures. The existing water tanks are screened from view by a berm.	The existing structures with their blocky, angular form are located adjacent to the deep, eroding Kīlauea and Halema'uma'u Craters defined by its flat, level benches. Mauna Loa rises above this landscape with its massive shape. The existing structures include vertical, diagonal, and horizontal lines, which contrast with the curving line of the trail and horizontal, undulating lines evident along the crater rim. Scattered green and tan vegetation occur within a field of dark-colored lava rock. The structures and trail introduce dark browns, reds, and grays into the landscape. The general texture in this landscape is medium due to scattered vegetation and variable rock sizes with coarser textures found in the structures and descending the rough, broken crater walls.	The presence of the structures on the bluff, including the taller HVO, are out of balance and scale with the massive, natural landscape. Kīlauea and Halema'uma'u Craters are the primary focal point in the setting with the structures introducing multiple additional focal points. Mauna Loa, due to its massive size, also attracts attention from this location. The existing structures on the bluff interrupt the natural continuity of the landscape. There are common design elements among the structures, but due to their different designs and architectural styles, they do not form an organized or regular composition in the setting.
KOP 4: Volcano House Overlook	The landscape setting as viewed across Kīlauea Crater is mostly natural and intact with the presence of the Jaggar Museum and HVO being the primary modifications viewed. These panoramic views have a high level of landscape diversity with views of the expanding crater, vegetated intermediate benches, and Mauna Loa rising above the landscape in the background. The geometric form of the existing structures on the bluff contrast with natural horizontal and angular lines present in the landscape.	The existing landscape is defined by the eroding Kīlauea Crater with flat, level benches descending along steep slopes down to the crater floor. The massive slopes of Mauna Loa rise above the landscape, contrasting with the blocky, angular form present in existing structures. Horizontal and undulating lines are evident in the crater rim down the layers of eroding rocks, repeating in the butt edge formed between the vegetation on the intermediate bench and the distant, stark lava flows. Vegetation in view includes a mix greens and grays (dead trees). Lava rocks introduce a range of colors from dark gray to brown with areas of brighter, red lava. Textures range from the rough, broken crater walls to the fine, smooth texture of Mauna Loa.	The setting is well balanced, displaying the active nature of the landscape with limited visible landscape modifications. Due to the massive scale of the natural landscape, the structures are visible but do not disturb the harmonious balance and scale of the setting. There are three main focal points in the view, with the first two (Kīlauea Crater and Mauna Loa) appearing largely intact with the modifications on Uēkahuna Bluff, third focal point, attracting additional attention since the existing structures are located on the highest point on the crater wall. While these structures interrupt the natural continuity of the landscape, the viewing distance diminishes their visual dominance, allowing the natural landscape to appear unified and organized. From this distance, the variety of architecture used for the buildings is not evident and their presence appears organized, with their effect limited to the bluff area.

KOP Number	Landscape Character	Visual Elements	Spatial Composition
KOP 5: Crater Rim Drive west of Kīlauea Visitor Center	The setting adjacent to this KOP has been modified by the existing KVC, Volcano Art Center, Volcano House, parking lots, entrance road, and other park infrastructure, creating a natural developed character. The dense forest surrounding this KOP location forms an enclosed landscape setting with focal features (e.g., KVC and Volcano Art Center) attracting attention within the setting. Due to the varying architectural styles, a more diverse landscape is present in this view compared to KOP 2, where the other structures are not visible. The dominant materials used in these structures are lava rock and wood (stained red or brown) with the KVC displaying a shingle roof with distinctive pyramidal roof forms whereas the Volcano Art Center has a tall, metal gable roof.	The KVC and Volcano Art Center have blocky, angular forms that contrast with the dense rounded form generated by the adjacent forest. Vertical lines occur in the signage and light posts with the KVC and Volcano Art Center introducing horizontal and angular lines. The KVC is constructed of dark colored lava rock, dark brown siding, and a brown roof. The Volcano Art Center (former Volcano House) has red-stained wood siding with a gray, metal roof. The adjacent vegetation is composed of a range of greens with a uniform, medium texture. Rough textures are found in the KVC and Volcano Art Center, including the vertical form of the buildings' chimneys, pyramidal roof form (KVC), and tall, gable roofline (Volcano Art Center).	The KVC, Volcano Art Center, and adjacent forest are in visual balance and of appropriate scale since the forest vegetation is taller than any built structure. The KVC and Volcano Art Center attract attention in the setting and are focal points in the landscape as the large openings in the forest interrupt the continuity of the surrounding forest setting. The kauhale is ordered and designed, including ornamental landscape plantings and large parking areas.
KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field	The setting is mostly natural where Crater Rim Drive travels through a dense ʻōhiʻa lehua and koa forest. There are intermittent openings in the forest with views of the historic ball field adjacent to KMC. The setting is uniform with the dense forest and roadway creating a repeating theme along this stretch of Crater Rim Drive. The forest forms enclosed views along the road except where intermittent openings in the forest create short-duration framed views. There are limited structures in view with the asphalt road and wooden powerline poles being the primary visible built elements. There are glimpses of structures in the KMC complex, where light colored building features contrast with the forest's natural green, brown, and tan colors, but the forms of the structures are not apparent.	The level, geometric roadway crosses flat terrain where tall trees form a dense rounded canopy on either side of the road. Horizontal lines are formed by the roadway with vertical lines in the tree trunks and powerline poles. The forest canopy is defined by its curving lines and tall, rounded form adjacent to the road. Vegetation introduces a wide range of greens with a gray roadway and brown powerline poles as the primary built features in the setting. The forest creates a mostly uniform texture, which partially conceals the powerline poles along the roadway. The road surface and meadow, visible through the forest openings, are finer textured and smoother in comparison.	With similar forest canopies on either side of the road, as well as the narrow road shoulders and concealed powerline poles, the setting appears balanced and in scale with the natural setting. Views are focused along the roadway with those views being the primary focal point. Glimpses of forest openings along Crater Rim Drive attract the eye but are short in duration, occur infrequently, and are mostly of recreation sites (or their access roads). As motorists travel between the Uēkahuna Bluff and KMC, the setting is unified and connected by the ʻōhiʻa lehua and koa forest, which becomes more dense approaching KMC. With the roadway and adjacent powerline poles following the same alignment, development in view appears organized and focused along this corridor.

KOP Number	Landscape Character	Visual Elements	Spatial Composition
KOP 7: Kilauea Military Camp	The setting is mostly natural appearing, with a large clearing containing KMC and support structures forming a natural developed character. The view type is a loose, enclosed view with the dense forest surrounding the camp focusing views inwards. Due to the cohesive blend of the older and modern buildings within KMC, a simple, cultural landscape character is formed. The front office is constructed of wood siding with a metal gable roof and lava rock chimneys in a country art deco style. The cabins are constructed of similar materials but are of a simpler, geometric design with metal, gable roofs.	The KMC front office and cabins have a blocky, angular forms, which contrast with the dense rounded form generated by the adjacent forest. Vertical lines occur in signage with the KMC cabins introducing horizontal and angular lines and lava rock curbs forming curving lines along the road. The KMC cabins are constructed of light brown siding, dark brown trim, dark lava rock chimneys, and a brown metal roof. The adjacent vegetation is composed of a range of greens with a uniform, medium texture. Rough textures are introduced by the KMC cabins through their triangular, vertical forms, including the form of the chimneys and gable roof lines.	The KMC and adjacent forest are in visual balance and of appropriate scale since the forest vegetation is taller than any built structure. The curving driveways at the entrance of KMC focus views inward toward the front row of cabins and the art deco style front office building. Along the edge of KMC, views include forest openings and a glimpse of the historic ball field. The KMC and supporting facilities form a large opening in the forest, interrupting the continuity of the surrounding forest setting. Additionally, the varying architectural styles in KMC partially interrupt the continuity of the setting, but through the use of common materials, the structures appear unified. The KMC has an orderly design, including ornamental plantings and several curving entrance roads. The cabins are also constructed in rows, further organizing the built elements within this setting.

5.3 Viewer Groups and Sensitivity

Different viewer groups, and their sensitivity to changes in their view, were analyzed from each KOP to understand how viewers would respond to the introduction of the Project. Due to the accessibility of each KOP location and the range of visitors to the park, every KOP would have casual eye, critical observers, and repeat local observer viewers (as defined in Section 5.1) with their different visual and experience expectations. Table 2 describes these user groups by KOP and their relationship to the existing landscape setting. To provide a more complete picture related to the sensitivity of views from these KOPs, Table 3 describes the viewer groups from Table 2 and considers the number of visitors, duration of their visit, and the activities occurring at each viewpoint.

Table 2. Key Observation Point Viewer Groups

KOP Number	Casual Eye	Critical Observer	Repeat Local Observer
KOP 1: Park Entrance Road	First impression for casual eye observers after passing the park entrance station is of a dense, forested entrance road approaching the KVC. Limited development and vegetation clearing conceal views of KVC and further along, of Kīlauea Crater. These viewers are typically focused on wayfinding and reading the map provided by the ranger at the park entrance station.	The vegetation along the roadway (ʻōhiʻa lehua, koa, and hapuʻu) are typical vegetation types and form an intact landscape setting along the roadway, which would likely be apparent to critical observers.	Experience is similar to the description for critical observers as both viewer type groups would traverse the area between the park entrance station, KVC, and overlooks further along Crater Rim Drive.

KOP Number	Casual Eye	Critical Observer	Repeat Local Observer
KOP 2: Kīlauea Visitor Center Entrance	Park visitors enter the parking lot with views of both the existing KVC and associated parking lot. There are limited interpretive opportunities until visitors enter the KVC where Hawai'i Volcanoes is further explained, including its historic, cultural, and natural elements. Casual eye observers would likely stop at the KVC to learn more about the park before continuing on.	Similar to the entrance area, the native vegetation used in the landscaping provides these viewer groups the appropriate setting for the area. These viewers are also likely to stop at the KVC to find locations where they can experience the park according to their special interest (e.g., photographic viewpoints, birding trails, historic structures).	Experience is similar to the description for critical observers but due to visitation occurring over a longer timeframe, proposed changes introduced in this setting would be highly visible and more noticeable compared to first time or non-local viewer groups.
KOP 3: Crater Rim Trail	Casual eye observers have likely stopped at other viewpoints along Kīlauea Crater, with interpretive signage, to better understand the sacredness of the landscape as well as the level of change that occurs during each major volcanic period.	Geologists, photographers, and other critical observers are likely to understand how much this landscape has changed as a result of the 2018 volcanic activity. They are likely to understand the importance of this landscape to some Native Hawaiians, especially for those who visited the KVC or those interested in Hawaiian culture.	The sacredness of the setting is understood and may include conducting Native Hawaiian practices along the edge of Kīlauea Crater. The presence of the USGS field station and former Jaggar Museum have modified this sacred area's natural character. Changes to the setting from past volcanic eruptions are also likely to be known through visitation over many years.
KOP 4: Volcano House Overlook	A typical visitor to this location is a first-time visitor as it offers the first view of the caldera after leaving the KVC. Existing interpretive signage at the overlook is key to understanding the view and importance of the view for casual eye observers.	Views from inside the historic hotel, from the perspective of guests, would be long in duration as visitors would have time to survey the landscape through their room's windows. The historical association of this location may attract additional attention from history-focused critical observers.	Visited often by repeat local observers, including those staying or dining at the Volcano House. These viewers may venture on further along Kīlauea Crater to take in the view at Wahinekapu (Steaming Bluff), the Kīlauea Overlook, or on Uēkahuna Bluff.
KOP 5: Crater Rim Drive West of Kīlauea Visitor Center	First view of the KVC and the other buildings comprising the kauhale (integrated campus) after returning from visiting Wahinekapu (Steaming Bluff) and other overlooks along Crater Rim Drive. This area includes views of the historic Volcano House and Volcano Art Center. Casual eye observers would be returning to a familiar place before continuing to explore more of the park.	The vegetation along the roadway (mostly 'ōhi'a lehua and koa) is composed of typical vegetation types and forms an intact landscape setting along the roadway, which would be apparent to critical observers. This vegetation also partially screens views of structures in the kauhale.	Experience is similar to the description for critical observers as both viewer type groups traverse the area between the overlooks along Crater Rim Drive and the KVC.
KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field	Views as visitors return from Uēkahuna Bluff and drive toward the KVC. The KMC is not yet visible so there are limited landscape modifications visible from this location beyond the roadway and powerline poles. Casual eye observers would be focused on the road and would, in general, not be affected by landscape modifications unless they begin to dominate the setting.	The vegetation types along the roadway (mostly 'ōhi'a lehua and koa) are typical for this area and form an intact landscape setting along the roadway, which would be apparent to critical observers. The vegetation also mostly screens views of structures associated with KMC. Modifications in this setting would be more apparent to critical observers than casual eye observers.	Experience is similar to the description for critical observers as both viewer type groups traverse the area between the overlooks along Crater Rim Drive and KMC. Repeat local observers would notice modifications along the roadway especially if visible through large openings in the forest.

KOP Number	Casual Eye	Critical Observer	Repeat Local Observer
KOP 7: Kilauea Military Camp	Casual observers visiting KMC would have views of this historic camp near Kīlauea Crater. Modifications located within or adjacent to the camp would have limited effect on casual eye observers, as these viewers would likely not recognize which structures are historic and non-historic within the wide range of architectural styles and eras which comprise KMC.	History and military history focused visitors would recognize the intact historic setting of KMC and notice non-historic structures if they are visible from the camp, potentially diminishing the historic character of KMC.	As they visit KMC with family and friends over the years, changes to this historic area and adjacent areas would be highly noticeable to repeat local observers. Introduction of incongruent landscape features visible from the camp could reduce the intactness of the historic setting associated with KMC and experiences of frequent visitors.

Table 3. Key Observation Point Sensitivity

KOP Number	Viewer Groups	Number of Viewers	Duration	Activities
KOP 1: Park Entrance Road	Casual eye, critical observer, repeat local observer	High number of visitors since this is the main entrance to the park, very high during volcanic events	Short duration as motorists move through this setting to access other areas	Scenic driving
KOP 2: Kīlauea Visitor Center Entrance	Casual eye, critical observer, repeat local observer	High number of visitors, starting point for other park activities, very high during volcanic events	Short to moderate duration with new park visitors likely spending more time to orient themselves to the park	Park orientation, using park facilities, interpretive experiences with National Park Service rangers
KOP 3: Crater Rim Trail	Casual eye, critical observer, repeat local observer	Moderate to high number of visitors, very high during volcanic events	Short to moderate duration depending on the visitor group. Casual eye viewers may spend a few minutes with critical/local observers spending more time analyzing the landscape	Lava viewing (during volcanic events), scenic viewing, landscape photography, hiking
KOP 4: Volcano House Overlook	Casual eye, critical observer, repeat local observer	Moderate to high number of visitors, very high during volcanic events	Short to moderate duration views while hotel guests with caldera view rooms would experience long duration views	Lava viewing (during volcanic events), scenic viewing, hotel guests, landscape photography
KOP 5: Crater Rim Drive West of Kīlauea Visitor Center	Casual eye, critical observer, repeat local observer	High number of visitors travel this road between Wahinekapu (Steaming Bluff) area and the KVC. Moderate to high number of visitors hike the adjacent trail, which connects the KVC and Volcano House to the Crater Rim Trail	Short duration as motorists approach KVC; moderate duration for hikers on the trail	Scenic driving, hiking, landscape photography
KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field	Casual eye, critical observer, repeat local observer	High number of visitors travel this road between Uēkahuna Bluff and KMC	Short duration as motorists approach KMC	Scenic driving

KOP Number	Viewer Groups	Number of Viewers	Duration	Activities
KOP 7: Kilauea Military Camp	Casual eye, critical observer, repeat local observer	Low number of visitors, moderate number of authorized patrons, increased during winter season, holidays, and volcanic events	Short to moderate duration for active recreation groups with camp guests experiencing long duration views	Camp guests (authorized patrons), active recreation, parking for lava viewing (during volcanic events)

5.4 National Park Service Interest

From a park-wide perspective the KVC, entrance area, and Uēkahuna Bluff areas are included in the Visitor Services Zone as described in the GMP (National Park Service 2016), which is primarily managed for a high level of visitor use, access, and interpretation with a wide range of media and facilities to support diverse visitor needs. The proposed USGS field station, since it is located adjacent to KMC, would be within the Park Support Zone, which is managed to support park operations and maintenance, including operational needs of park partners such as KMC and USGS. Both zones were intended to focus built elements within the park into these "higher density" zones to allow other zones to retain a more natural setting. Regarding visitor use and interpretive opportunities, the Visitor Services Zone seeks to provide a high level of interpretive programs to support a high level of visitation. These areas are highly important to the park's purpose to protect, study, and provide access to Kīlauea and Mauna Loa in addition to perpetuating endemic Hawaiian ecosystems and traditional Hawaiian culture connected to these landscapes through associated interpretive themes and allocation of park resources. This differs for the Park Support Zone, which has limited visitor activities with a low level of encounters with other visitors. Both zones seek to provide safe visitor access during volcanic events with high levels of use during these periods, especially within the Visitor Services Zone supported by parking facilities and other infrastructure contained in the Park Support Zone (e.g., KMC). Table 4 describes National Park Service interest, by KOP, through assessing the viewpoint's importance (value of the viewed landscape), uniqueness (one-of-a-kind viewing opportunity or cultural, historic, or scientific significance), and National Park Service commitment to spending funds or committing staff time to enhance the viewer's experience.

Table 4. National Park Service Interest by Key Observation Point

KOP Number	Importance	Uniqueness	Commitment
KOP 1: Park Entrance Road	The entrance road, defined by its densely vegetated corridor, leads to the KVC and sets up additional experiences in the park. There are no specific interpretive opportunities in the area except for the map/brochure visitors are given at the park entrance station, which provides some geographic, biological, and historic context for the park.	Since all visitors entering this unit of the park would drive this road segment, it is a unique first impression for most park visitors. Road corridors through dense forests occur in other locations in Hawai'i Volcanoes, including Crater Rim Drive between this turnoff near the park entrance and Nāhuku (Thurston Lava Tube).	In addition to the rangers stationed at the park entrance station, park managers commit to maintaining the roadway character through vegetation maintenance and limiting modifications along this corridor.

KOP Number	Importance	Uniqueness	Commitment
KOP 2: Kīlauea Visitor Center Entrance	While views of the KVC are not highly important for park interpretation, the high level of visitation and historic structures in the kauhale (integrated campus) makes this area important to the park's purpose. Modifications in this area have a high probability of affecting park experience (positive or negative) as this is typically the first stop for visitors.	Due to the closure of the Jaggar Museum, the KVC is unique as it is the only visitor center in the park. There is a small museum, an outdoor lanai for 24/7 information, and several ranger-led activities that begin at the KVC, providing unique opportunities to experience the park's natural and cultural settings.	Being the core of the Visitor Services Zone, the National Park Service is highly committed to maintaining the character of the KVC area to support increasing visitation. There are typically multiple rangers providing visitor information and interpretation inside and outside of the KVC.
KOP 3: Crater Rim Trail	Uēkahuna Bluff is a highly important area and is considered a sacred site by some Native Hawaiians. The 2018 volcanic activity damaged the structures on the bluff, providing the National Park Service an opportunity to create a more natural setting in this area. Uēkahuna Bluff is highly important for future interpretive opportunities for the park. The area is also nesting habitat for the threatened, endemic nēnē (Hawaiian goose).	Being the high point on Kīlauea Crater, this area is highly unique and is a focal point for views throughout this portion of the park. Additionally, during volcanic events, this area is heavily visited, as it provides one of the closest and most elevated views of the crater and night-glow from the volcano.	The removal of infrastructure in this area was identified as an option in the 2016 GMP as well as providing opportunities for less impactful recreation. During volcanic events, Hawai'i Volcanoes commits large amounts of resources to provide safe opportunities to visit this area and see the night-glow from the volcano. Prior to this Project, park managers have repaired Crater Rim Trail connecting Uēkahuna Bluff to the Kīlauea Overlook, displaying the continuing commitment of resources to this area.
KOP 4: Volcano House Overlook	This site, adjacent to the historic Volcano House, was the original location of the first volcano observatory in the United States before structures were built on Uēkahuna Bluff. Today these views are prized by Volcano House guests and visitors to the park, who often have their first view of Kīlauea Crater from this location.	There are several other locations with similar views across the caldera including Kūpina'i Pali (Waldron Ledge), Keanakāko'i Crater, Wahinekapu (Steaming Bluff), and the Kīlauea Overlook. Due to the accessibility of this location, the long-duration views from the hotel, and the historic context of these views, this viewpoint is unique within the park.	The National Park Service has interpretive signage at the overlook which introduce Pele and the scientific study of the volcanoes (first volcano observatory in the United States). Due to the importance of views across the caldera and especially during volcanic events, park managers have a high level of commitment to protecting views from this and other locations along Kīlauea Crater.
KOP 5: Crater Rim Drive west of Kīlauea Visitor Center	Views from this location are important for the park as this viewpoint is located along Crater Rim Drive between the former Volcano House (current Volcano Art Center) and the present-day Volcano House as well as being located on a side trail connecting to Crater Rim Trail. The high level of visitation to this area combined with the presence of historic structures makes this area highly important to the park's purpose. Modifications in this area have a high probability of affecting park experience (positive or negative) as this area is typically one of the first stops for visitors.	After visiting the KVC, this area offers multiple unique opportunities including touring the historic Volcano Art Center, accessing Crater Rim Trail, and becoming better acquainted with the park through review of interpretive signage. For guests of the Volcano House, this corridor provides access to the KVC and Crater Rim Trail without the need for a vehicle.	With its administrative area located in the core of the Visitor Services Zone, the National Park Service is highly committed to maintaining the character of the KVC area to support increasing visitation. There are typically multiple rangers providing visitor information and interpretation inside and outside of the KVC. Additionally, the presence of multiple interpretive signs, sculptures, and the historic Volcano Art Center (former Volcano House) increases the importance of maintaining the area's natural, historic developed character.

KOP Number	Importance	Uniqueness	Commitment
KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field	Views along Crater Rim Drive are important for the park, with the road corridor displaying a highly intact character with limited visible human-made modifications. Motorists traverse this setting between Uēkahuna Bluff and the KVC, passing by the historic KMC and the historic ball field. There are no specific interpretive opportunities along the road, since KMC is available only to authorized patrons, with visitors scanning the landscape for signs to provide direction to additional recreation areas and overlooks.	The drive between Uēkahuna Bluff and the KVC is unique within the park as the road provides access to multiple overlooks with views into Kīlauea Crater. As most development in the park is focused in the KVC area and National Park Service administrative area, the screening of views by existing vegetation toward KMC maintains the uniqueness of this undeveloped-appearing corridor along the north side of Kīlauea Crater.	Through vegetation management along this section of road, views toward KMC have remained screened, which maintains the natural-appearing landscape character of this area. There are typically no rangers or specific visitor services in this area, except during volcanic events when rangers may be directing traffic or protecting specific park resources. This area (Crater Rim Drive) is one of the most visited corridors in the park and provides access to several unique, interpretive opportunities.
KOP 7: Kilauea Military Camp	The historic KMC is important as it provides a range of recreation opportunities and lodging for active and retired military members as well as their families. High levels of visitation (especially during holidays and volcanic events) to this historic setting makes this area important to the park's purpose to support different park partners while providing opportunities for increased visitation.	Other than the Volcano House, KMC represents the only other lodging opportunity in the park for authorized patrons. The long historic use of the camp is unique and was established soon after the creation of Hawai'i Volcanoes. Additionally, a side trail connects the camp to the Crater Rim Trail, providing connectivity to several overlooks and the KVC.	Park managers are highly committed to working with their partners to provide a range of experiences for visitors and support their partners' operational needs. There are limited interpretive opportunities at KMC, but during volcanic events, the historic ball field is used as an overflow parking area with rangers providing safe access across Crater Rim Drive to the Crater Rim Trail.

6 IMPACTS

The assessment of impacts on visual resources, based on the new draft National Park Service visual impact assessment manual, uses the same seven KOP locations identified in Section 3.3 and described in Section 5. This section first outlines the methodology used to assess impacts on visual resources with following subsections documenting the visual change proposed from each KOP, effects on viewer experience and National Park Service management associated with each KOP, and the overall impacts to park visual resources.

6.1 Methodology

The assessment of impacts, as described in the new National Park Service visual impact assessment methods and guidelines document (National Park Service 2021b), involves a team of evaluators who form conclusions, especially when assessing the visual change proposed from each KOP. A five-member team, consisting of National Park Service specialists, including an archeologist, and the third-party visual resource planner, conducted an on-site evaluation of visual change from each KOP location on January 3, 2022. To support the analysis and depict the proposed changes within the view from each KOP, visual simulations were developed from the KOP locations and are included in Appendix B. To assess impacts from each KOP associated with the visual change proposed by the Project, team members reviewed the visual simulations on-site before editing the draft Visual Change Evaluation Form. This form assesses (1) project compatibility with existing landscape character, (2) contrast of visual elements (form, line, color, texture), and (3) contrast with spatial composition and patterns. The final element on the worksheet is the assessment of an overall impact level (adverse; no effect; beneficial with a scale of high, moderate, low) incorporating the above information with additional consideration of differing lighting conditions,

changes due to seasonality, and other variable factors that may affect the evaluation. After each team member reviewed the draft form, the team discussed the results to reach a consensus for each factor, including the impact level for the final version of the form. Note, the assessment only considered what can be seen in the simulations completed from each KOP. The location of each KOP and the distance zones radiating out from the KOP location (foreground [0–0.5 mile] and middle ground [0.5–3 miles]) are included on Figures 2 to 8.

The second component of the visual assessment was determining the impact of the Project on viewer experience and National Park Service management. The assessment of impacts on viewer experience focused on how a change in landscape character, visual elements, and spatial composition would affect viewer visual experience based on different viewer groups and associated sensitivity to these changes. After assessing the impact on each user group, a summary conclusion was identified, balancing the different user groups and the effect of seasonal variation and other variable factors (e.g., increased visitation during volcanic events). To evaluate impacts to National Park Service management, the value of the view from each KOP was assessed as it relates to the park's interpretive themes and stories the park wishes to communicate to its visitors. This includes potential changes to existing interpretive features, compatibility with existing interpretive themes, potential for the Project to be a new interpretive opportunity for the park, and whether the Project would create a distraction in the views being interpreted especially from prominent viewpoints.

The final component of the assessment was determining the overall impact to park visual resources. A summary table of impacts first summarizes the conclusions from each KOP, using the previous two analysis components, and then considers the effect of the Project on the park and visitors as a whole. While this evaluation relies on the KOP analysis, the focus of the analysis is on compatibility of the Project with the Hawai'i Volcanoes GMP and long-term vision for the park.

6.2 Visual Change

Key information from the Visual Change Evaluation Forms completed for each KOP location, included in Appendix C, are summarized in Table 5.

Figure 2. KOP 1 – Park Entrance Road: Location Map

Figure 3. KOP 2 – Kīlauea Visitor Center Entrance: Location Map

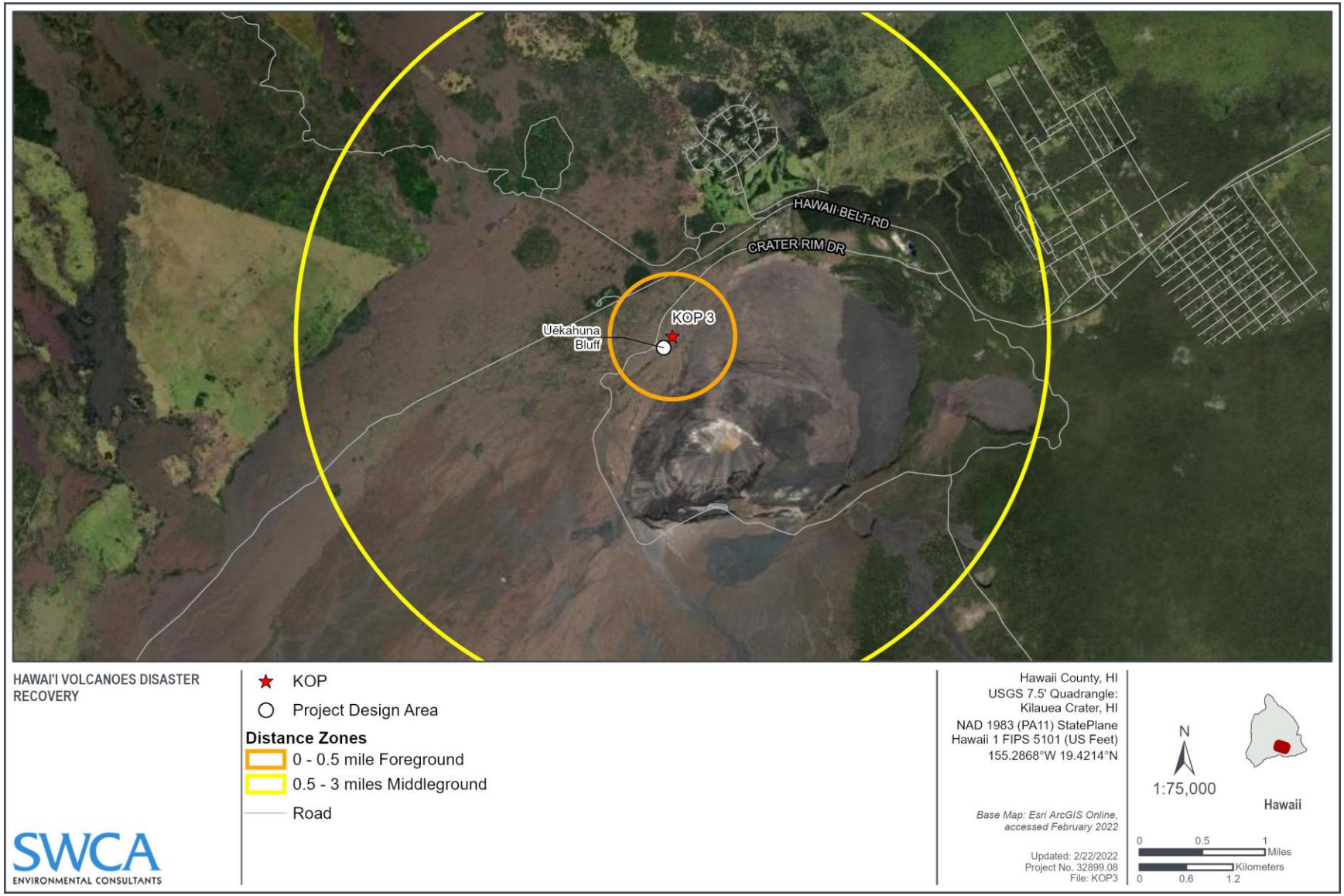

Figure 4. KOP 3 – Crater Rim Trail: Location Map

Figure 5. KOP 4 – Volcano House Overlook: Location Map

Figure 6. KOP 5 – Crater Rim Drive West of Kīlauea Visitor Center: Location Map

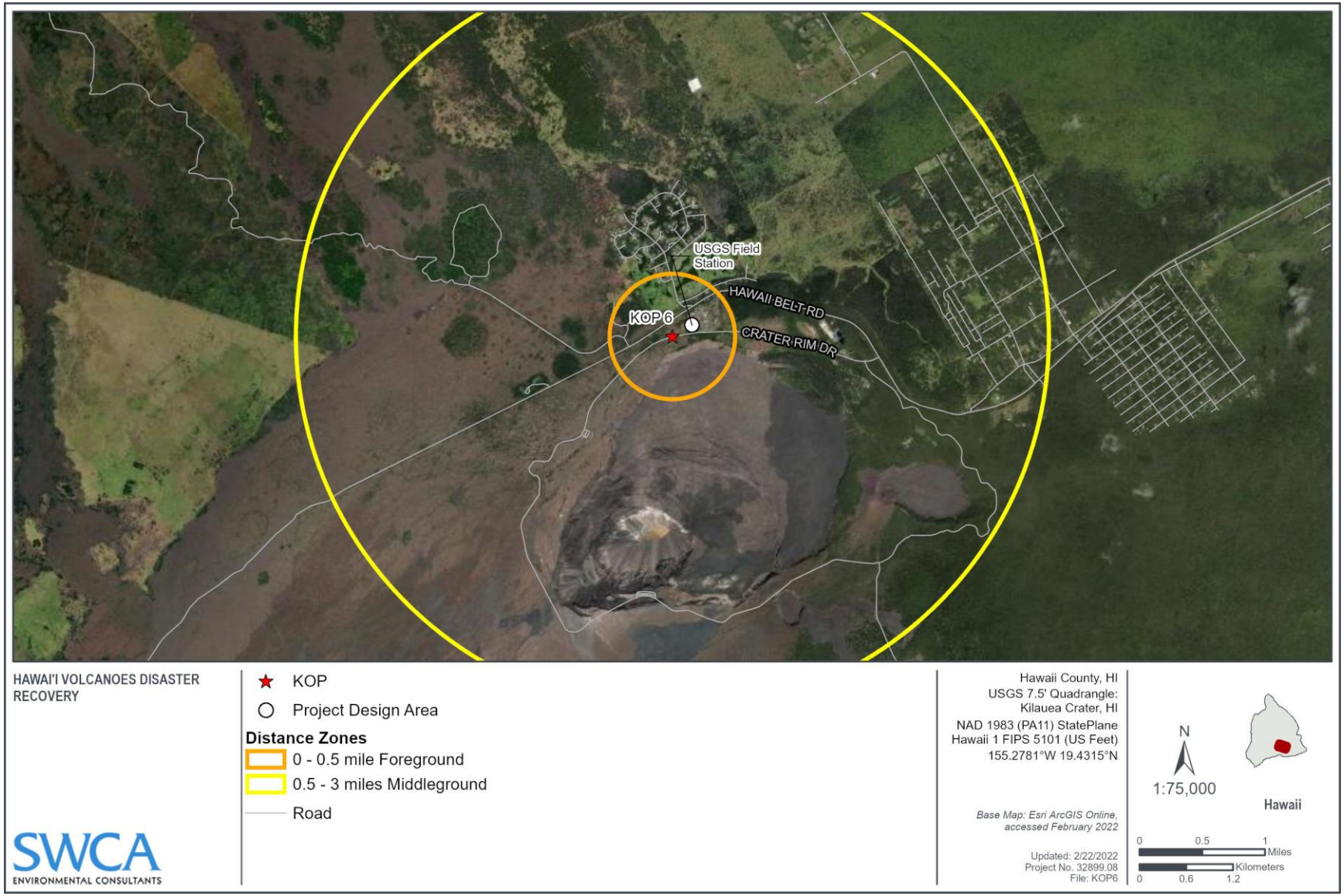

Figure 7. KOP 6 – Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field: Location Map

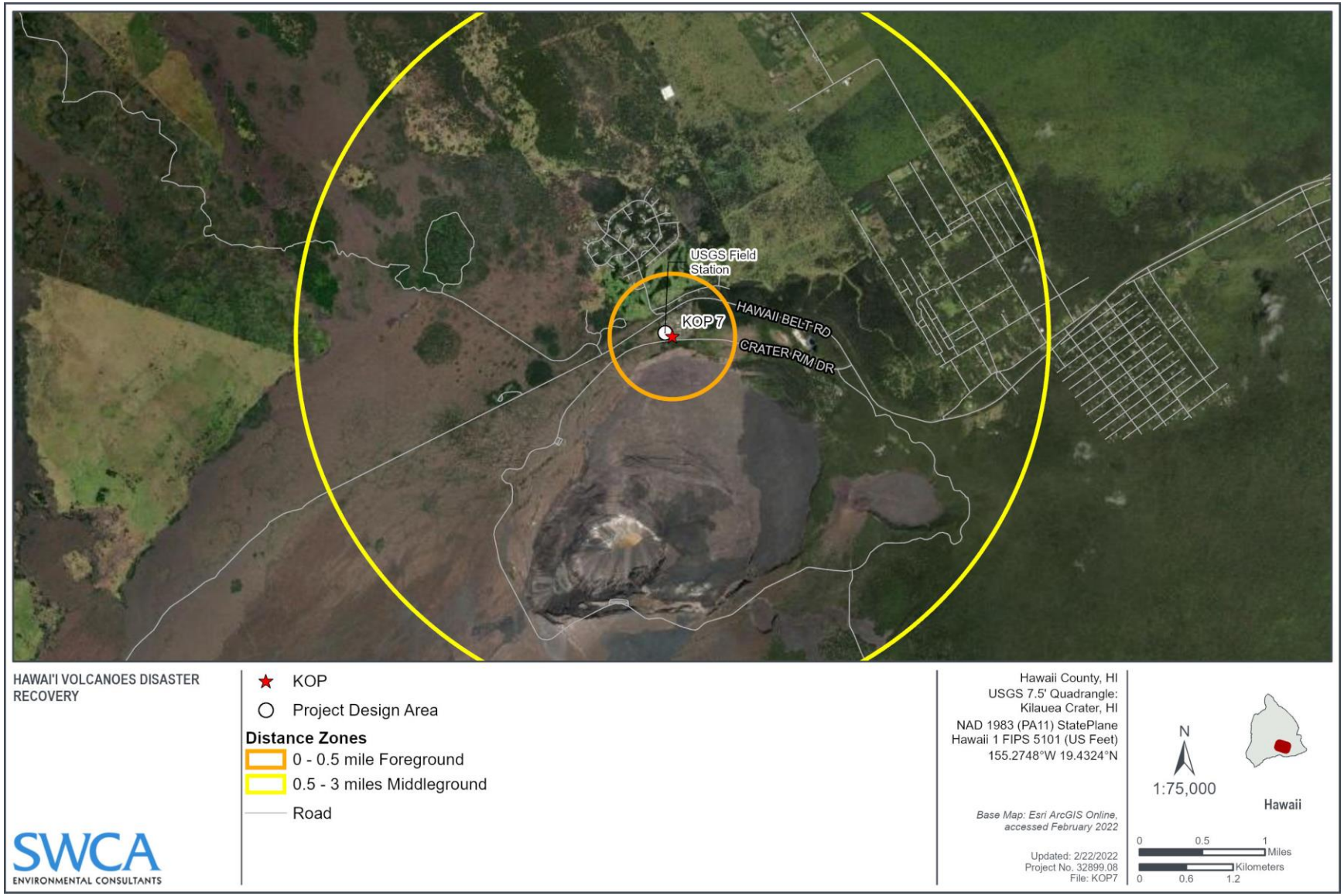

Figure 8. KOP 7 – Kilauea Military Camp: Location Map

Table 5. Key Observation Point Visual Change

KOP Number	Compatibility with Landscape Character	Contrast with Visual Elements	Contrast with Spatial Composition	Additional/ Variable Factors	Overall Effect on Scenic Quality
KOP 1: Park Entrance Road	The Project would be partially compatible with the existing landscape character. The addition of a new lane, a traffic circle, and additional signage would begin to transform the existing natural character to a more transportation-focused character. Vegetation clearing proposed from the new entrance to the replacement visitor center and traffic circle would create a clearing in a dense forest, modifying the existing vegetation patterns. The proposed plantings in the center of the traffic circle would begin to repeat those patterns to help connect the adjacent forest settings. Views toward the existing KVC and replacement visitor center would be opened, leading to potential views of these buildings and associated parking lots immediately after passing the park entrance station.	The rounded forms of the dense forest canopy would be split where the new entrance road to the replacement visitor center is proposed. Splitting the forest in view would also result in coarser textures where the continuous form of the forest would be interrupted. The simple curving roadway would be replaced by a series of curving roads emanating from a round, traffic circle. The proposed signage would introduce additional vertical lines into the landscape. The Project would mostly repeat colors present in the existing landscape with the addition of more gray asphalt and concrete in view associated with the proposed road improvements. Motion along the additional roadways would further contrast with the existing setting.	The proposed transportation improvements would partially disrupt the existing, simple, balanced view as more transportation features would be in view (e.g., pavement, signs, striping, etc.). These features would be out of the scale with the existing setting and appear larger than those elements currently in view. The addition of the road directly accessing the KVC would create a new focal point from this location, adjacent to the park's entrance. The continuity and existing patterns within this landscape would be interrupted as an additional corridor would be cut through the forest compared to the simple, continuous roadway present in the existing landscape.	Long-term vegetation management would facilitate maintaining a natural, forest setting as well as providing opportunities to screen views of the replacement visitor center and other project elements.	Moderate adverse impacts are anticipated on views from this location as the Project would begin to transform the setting into a more transportation-focused character including a new traffic circle and entrance road to the KVC, requiring vegetation clearing within a dense forest setting. The continuity and existing patterns within this landscape would be interrupted and views toward the existing KVC and replacement visitor center would be opened creating a new focal point. The character of driving along a densely vegetated corridor between the park entrance station and the KVC would be interrupted as a result of the Project. To further reduce these impacts, the planting of native vegetation within medians and along the roadside would visually break up expanses of pavement to blend with the natural setting and minimize the visual width of entry into the park.

KOP Number	Compatibility with Landscape Character	Contrast with Visual Elements	Contrast with Spatial Composition	Additional/ Variable Factors	Overall Effect on Scenic Quality
KOP 2: Kīlauea Visitor Center Entrance	The Project would be partially compatible with the natural developed character type found in the existing setting. As a result of the Project, the area viewed as modified would be expanded to include the replacement visitor center and parking lot. The architectural style of the replacement visitor center would be similar to the existing KVC. The lava rock and fiber cement siding (mimicking wood siding) would be very compatible with the existing KVC but the solar panels are not consistent with the existing KVC. It is important to note while the existing KVC does not have solar panels, there are solar panels on the KVC garage and restroom building, therefore the Project would introduce elements that are mostly compatible with the existing setting.	The blocky form of the replacement visitor center would mimic the existing KVC but would introduce another large building into view. The lines introduced by the solar panels would attract additional attention as they differ from those found on the existing KVC. The colors proposed would mimic those in the existing KVC including the selected roof color, which matches the existing KVC. Coarse textures found in the replacement visitor center would be similar to the existing KVC including pyramidal roof forms.	The addition of the replacement visitor center would partially disrupt the existing balance of the landscape which would begin to tilt toward recreation development instead of a balanced recreation/natural composition. This is mostly due to the introduction of a new building, which would create a new focal point from this location. By keeping the building height below the treetops and maintaining vegetation screening in front of the building, the apparent scale of the Project would be reduced and continuity of the surrounding forest setting would be mostly maintained.	Maintaining existing vegetation, as well as planting additional plants between Crater Rim Drive and the replacement visitor center, would reduce the physical presence of the building including the proposed solar panels by partially screening views, similar to how the existing KVC is screened.	Moderate adverse impacts are anticipated on views from this location, as the Project would expand the area viewed as modified, leading to a more recreation-focused landscape compared to the existing recreation/natural setting. Additionally, the solar panels would be noticeably different than the existing KVC, introducing more variety in the setting. The planting of additional native vegetation in the road medians would further screen views of the solar panels, reducing their effect on scenic quality.

KOP Number	Compatibility with Landscape Character	Contrast with Visual Elements	Contrast with Spatial Composition	Additional/ Variable Factors	Overall Effect on Scenic Quality
KOP 3: Crater Rim Trail	The Project would be compatible with the existing landscape character. The removal of the HVO, Geochemistry Annex building, and Jaggar Museum on the bluff would result in a more natural-appearing landscape, allowing the natural elements of the landscape to dominate. Through redesign of the existing berm, the existing restroom building would be visible but the replacement water tank would be screened from view. The remaining structures would be grouped away from the edge of Kīlauea Crater, improving compatibility with the existing landscape character.	The removal of the blocky forms associated with the existing buildings would reduce contrast with the natural setting. By screening the view of the cylindrical form of the replacement water tank, which would appear more industrial in the setting, contrast with the natural setting would be further reduced. The angular lines in the existing restroom building would repeat angular lines in the existing landscape. Removal of the HVO and Jaggar Museum would reduce the extent of incompatible coarse-textured elements in view.	In general, the Project would bring the setting more into balance and increase landscape continuity through the removal of the HVO and Jaggar Museum, which created a discordant landscape. Removal of these structures would also bring development more into scale with the natural setting. While the existing restroom building may be visible from this location, the removal of three dominant structures on the bluff would allow the landscape to be the main focal point in the setting.	Removal of the HVO and Jaggar Museum would reduce the extent of skylined structures in view as the existing restroom building would be backdropped by existing vegetation. Views may be partially impeded by rain and clouds during heavy storms or other weather events.	Moderate beneficial impacts are anticipated on views from Crater Rim Trail as the Project would be compatible with the natural landscape character. The Project would improve scenic quality through the removal of the HVO and Jaggar Museum and through retaining some of the existing berm to screen views of the replacement water tank. If visible, this feature would attract attention, with the utilitarian-appearing water tank being incompatible with natural setting. To reduce impacts where the replacement water tank could be visible from other locations, the tank would be painted a darker color to match the setting allowing it to blend with the natural landscape. Additional mitigation consisting of planting more vegetation along the berm, to further screen views of the Project, would result in greater beneficial impacts.
KOP 4: Volcano House Overlook	The Project would be compatible with the existing landscape character as it would remove incompatible, geometric landscape features on Uēkahuna Bluff (e.g., Jaggar Museum and HVO). Through thoughtful design of the proposed overlook, including the use of natural materials (lava rock and wood) and limiting the height of the facility, the Project would result in beneficial impacts on landscape character.	The low-profile design of the proposed overlook would introduce weak to no contrast on views from 2 miles away at the Volcano House Overlook. Therefore, high beneficial impacts on the existing visual elements are anticipated. The use of diffuse, low temperature lighting directed downward at the overlook would result in minimal impacts from this location considering other lighting sources in the area (e.g., vehicle headlights, flashlights, and lighting around the Volcano House).	By removing the existing structures on the bluff and designing the Project to visually blend with the setting, the spatial composition of this view would be improved. This includes reducing the scale of built elements in the view as well as removing geometric features on Uēkahuna Bluff (a landscape focal point).	Atmospheric conditions sometimes limit visibility across the caldera (approximately 2 miles away).	High beneficial impacts are anticipated on views from the Volcano House Overlook as the Project would remove incompatible landscape features on a high point, construct an overlook repeating the landscape's existing visual elements and materials, and establish a more visually intact setting adjacent to Kīlauea Crater.

KOP Number	Compatibility with Landscape Character	Contrast with Visual Elements	Contrast with Spatial Composition	Additional/ Variable Factors	Overall Effect on Scenic Quality
KOP 5: Crater Rim Drive West of Kīlauea Visitor Center	The Project would be very compatible with the existing landscape character as viewed from this location. The portion of the replacement visitor center visible from this location, mostly the structure's roof, mimics the existing KVC, including the color of the proposed roof, allowing it to blend with the existing setting. The natural developed character of the landscape, and landscape diversity, would be minimally impacted.	Since the replacement visitor center mimics the existing KVC, as well as being partially screened by vegetation, it would introduce a weak level of contrast with the existing landscape. The building's blocky form and angular rooflines minimally contrast with the existing setting including the existing KVC. The roof color is similar to the existing KVC and other adjacent structures. The geometric form of the roof's solar panels would be apparent but would not attract attention from this location.	The addition of the replacement visitor center would have a minimal effect on the balance and patterns within the existing setting. Since the scale of the proposed structure is similar to the existing KVC, it would extend the focal point associated with the existing KVC but would not distract views from this location. Similarity, the continuity of the landscape would be minimally affected, as the Project would appear within existing openings in the forest as viewed from this location.	The parking area between the viewpoint and the replacement visitor center is often very busy (as shown in the simulation), therefore views of the replacement visitor center would typically be partially screened from view by vehicles.	Low adverse impacts are anticipated on views from Crater Rim Drive west of the KVC as the Project would attract attention but would not be prominent in the setting. This is based on the design of the replacement visitor center mimicking the existing KVC to the extent possible while also maintaining vegetation between the viewpoint and the proposed building to reduce its apparent size in the view.
KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field	The Project would be screened from view by the dense forest adjacent to Crater Rim Drive. Two simulation overlays were completed, confirming the Project would not be visible in the larger openings along the roadway. Based on this level of screening, the Project would be compatible with the existing landscape character.	Since views of the proposed USGS field station would be screened, the Project would introduce no visual contrast with the existing setting. If there are portions of the USGS field station visible in small gaps in the forest, the dark colors proposed for the building would blend into the forest setting.	The Project would not affect the landscape's spatial composition as the proposed USGS field station would be screened from view.	Maintaining the dense forest adjacent to Crater Rim Drive is key to avoiding future impacts on views from this location.	No effects are anticipated on views from Crater Rim Drive toward the proposed USGS field station since the Project would not be visible in the large openings in the forest. Where potentially visible in small openings, the Project would not attract attention from the roadway.

KOP Number	Compatibility with Landscape Character	Contrast with Visual Elements	Contrast with Spatial Composition	Additional/ Variable Factors	Overall Effect on Scenic Quality
KOP 7: Kilauea Military Camp	The proposed USGS field station would be partially compatible with the existing landscape character. There are several eras of buildings visible from this location, including those associated with the historic KMC as well as a maintenance facility with a large warehouse. The more modern split-gable roof design proposed would be incompatible with the historic KMC buildings. Since the Project would be partially screened from view, and the presence of the existing maintenance facility (partially screened) has already modified this setting, the Project would appear more compatible with the existing landscape character.	The blocky, pyramidal form of the proposed USGS field station, partially obscured by existing vegetation, would contrast with the existing structures in view. The diagonal rooflines would introduce weak contrast with the existing landscape setting. The coarser textures associated with the split gable roofline would moderately contrast with the simpler gable rooflines present on KMC's historic structures.	The presence of the proposed USGS field station in this view would partially disrupt the visual balance, continuity, and existing patterns in the landscape. By maintaining existing vegetation in front of and behind the proposed building, these effects would be reduced as the continuity of the forest setting would be maintained. The proposed building would be taller than most of the existing structures in the KMC area but based on the level of vegetative screening, the structure would attract attention but would not create a new focal point in the setting.	Maintaining existing vegetation in front and behind the proposed USGS field station is key to avoiding additional impacts on views from this location and the historic setting adjacent to KMC.	Moderate adverse impacts are anticipated on views from this location as the Project would partially interrupt the continuity of the landscape and introduce a more modern building into a view dominated by historic structures. The split gable roof and height of the building would attract attention and would be prominent as viewed from KMC. To further reduce impacts, planting additional native vegetation around the proposed field station would more fully screen views of the Project reducing its physical presence in view.

6.3 Impacts to Viewers and National Park Service Interpretation

In addition to the level of contrast (visual change) introduced by the Project, this assessment seeks to identify the impact on viewer experience and its effect on National Park Service management of these views. This section first describes the impact the visual change would have on the experience from each KOP and then considers the effect the visual change would have on park interpretive themes as well as management and resource allocation within Hawai'i Volcanoes.

6.3.1 Viewers

Through consideration of the results from Table 5, Table 6 summarizes how those changes introduced by the Project could affect the visual experience for different viewer groups at each KOP. This assessment included the consideration of how different user groups would react to changes proposed in the viewshed, including the casual eye, critical observer, and repeat local observer viewers (as described in Table 2) as well as their sensitivity to change (as described in Table 3).

Table 6. Key Observation Point Impacts on Viewers

KOP Number	Summary of Impacts on Viewers
KOP 1: Park Entrance Road	As the first impression after passing the park entrance station, casual eye observers would have additional signage and options to explore the park initially, compared to the existing setting where visitors would drive along an enclosed corridor, building anticipation of reaching the KVC. These effects on the experience of entering the park would be more apparent to repeat visitors, including critical observers and repeat local observers, as they would have prior knowledge of this forested corridor. There are a high number of visitors to this location, as it is the main entrance into the park, and during volcanic events the additional entrance lanes would shorten wait times at the park entrance station. In general, views from this area would be short in duration but have the opportunity to establish future expectations within the park. By preserving vegetation to the extent possible, as well as planting native vegetation within the center of the traffic circle, medians, and along the roadside to break up of expanses of pavement and minimize the visual width of entry into the park, the continuity of the forest would be partially maintained.
KOP 2: Kīlauea Visitor Center Entrance	The introduction of the replacement visitor center would provide all viewer types more interpretive opportunities, which is especially important for the casual eye and critical observer viewer groups. Since many of these viewers have not visited the park previously, they may have limited knowledge of the KVC area prior to the Project. The proposed building would be of similar design as the existing KVC but would be slightly larger in scale and would expand the area viewed as developed. For repeat local observers entering the parking lot, the replacement visitor center would be co-dominant with the existing KVC leading to the area having a more developed recreation-focused character. By maintaining vegetation along Crater Rim Drive and behind the new building, as well as the planting native plants within the replacement visitor center parking lot, islands, and entrance area, the physical presence of the building would be reduced, bringing it more in scale with the existing KVC and the surrounding forest.
KOP 3: Crater Rim Trail	The experience for most viewer types would be improved through redesign of the area on Uēkahuna Bluff, including the removal of the HVO and Jaggar Museum. By returning the area to a more natural character, the Project would allow visitors of all types to spend more time focusing on the landscape, geologic processes, and cultural significance of the setting. By retaining enough of the existing berm to screen views of the replacement water tank, the Project would support the natural setting and improve the recreation experience especially for critical eye observers and repeat local observers. The anticipation of hiking up the trail to visit the top of Uēkahuna Bluff would be improved as the setting would appear more natural without buildings obscuring the view, allowing the panoramic views from the high point to appear more suddenly, resulting in a more profound recreation and cultural experience. For many repeat local observers, especially those with a generational connection to the land, the presence and visibility of any structures on Uēkahuna Bluff would be seen as an impact on this culturally important landscape.

KOP Number	Summary of Impacts on Viewers
KOP 4: Volcano House Overlook	The experience for all viewer types would be improved through the implementation of the Project as the view across Kīlauea Crater would become more visually intact. For causal eye observers, this would include observing a landscape with fewer human-made modifications, allowing for a potentially more vivid experience aided by interpretive signage and other National Park Service materials. Critical observers, including those staying at the Volcano House with longer duration views as well as history-focused park visitors, would experience a less modified setting similar to those prior to the construction of modern facilities on Uēkahuna Bluff. Impacts on views for repeat local observers would be similar but through the partial removal of built elements on the bluff, beneficial effects on views toward this culturally important landscape are anticipated.
KOP 5: Crater Rim Drive West of Kīlauea Visitor Center	As visitors return from the overlooks along Crater Rim Drive, the view of the kauhale (integrated campus) would be minimally modified by the Project since the replacement visitor center was designed to repeat the design characteristics of the existing KVC and would be partially screened from view. Casual eye observers visiting this location would likely not notice the addition of the Project due to the weak level of visual contrast and since the replacement visitor center would facilitate increased recreation and interpretive opportunities. This would lead to a more developed character, which this viewer group may expect adjacent to a visitor center in a national park. For critical eye observers and repeat local observers, the addition of the replacement visitor center would begin to shift this landscape toward a more recreation development-focused setting, instead of the existing balanced recreation/natural composition, which is more directly visible from KOP 2. In addition to views from the roadway, this KOP also represents views from the adjacent trail that connects the KVC and Volcano House to the Crater Rim Trail as well as representing the historic setting adjacent to the Volcano Art Center. The addition of the replacement visitor center would minimally affect the historic setting as viewed from this location, as the Project would not dominate the historic character of this area and would visually blend with the existing KVC. By maintaining the native vegetation between Crater Rim Drive and the buildings (mostly ʻōhiʻa lehua and koa), the continuity of this setting would be maintained for the high number of visitors who travel this corridor. This is especially important for critical observers and repeat local observers for whom changes to the native forest and historic setting would be apparent.
KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field	Since views of the proposed USGS field station would be screened by existing vegetation, where there are larger openings in the forest, there would be limited impacts on viewers and their experience driving Crater Rim Drive. If there are small gaps within the dense forest canopy along the road, the dark colors proposed for the USGS field station would blend into the setting and would not attract attention from the roadway as the form of the building would not be visible. By maintaining the native vegetation along Crater Rim Drive (mostly ʻōhiʻa lehua and koa), the continuity of this setting would be maintained for the high number of visitors who travel between Uēkahuna Bluff and the KVC. This is especially important for critical observers and repeat local observers for whom changes to the native forest would be apparent.
KOP 7: Kilauea Military Camp	The different viewer groups would be affected in different ways by the proposed USGS field station through the expansion of development adjacent to the historic KMC. Casual observers would view the proposed USGS field station, located outside of the portion of KMC with an orderly design, as not being directly associated with KMC. Given this, there would be limited impacts on their experience visiting KMC especially if visiting later in the day to park for lava viewing along the crater rim. History and military history focused visitors (critical observers) may recognize the introduction of non-historic structures adjacent to KMC, especially near the historic ball field, which could diminish the overall historic character for these visitors. Repeat local observers would notice the change to the setting through visiting KMC over the years. The Project would be noticeable to these viewers and the introduction of incongruent landscape features would begin to reduce the intactness of the adjacent historic setting but since the proposed USGS field station would not be readily visible from many locations in KMC, there would be limited impacts on the experience of walking the grounds.

6.3.2 National Park Service Interpretation

In addition to the impacts on viewer experience, Table 7 summarizes the effect of potential impacts on park interpretive themes and the stories communicated to visitors. This includes the importance of the view, uniqueness of the view, and commitment by the National Park Service to the viewpoint and its viewshed. If the proposed changes in the view would reduce the value for interpretation, there may be reduced use of those facilities, necessitating potential alternative interpretive programs or locations.

Table 7. Key Observation Point Impacts on National Park Service Interpretation

KOP Number	Summary of Impacts on National Park Service
KOP 1: Park Entrance Road	Opening up of views along the densely vegetated entrance road corridor would have a minor impact on experiences for park visitors as there are no specific experiences or interpretive opportunities at this location. If the replacement visitor center or existing KVC would be visible from this location, the anticipation of traveling along the densely vegetated corridor would be reduced as the destination would be visible shorty after passing the park entrance station. Opportunities to drive along a dense, forested corridor would continue to occur in other locations in the park such as Crater Rim Drive between the turnoff near this location and Nāhuku (Thurston Lava Tube). Through signage and other design considerations (statues, plantings, etc.), the park could initiate interpretive opportunities sooner in the park and reduce impacts on National Park Service values from the increased level of development near the park entrance station.
KOP 2: Kīlauea Visitor Center Entrance	Since the closure of the Jaggar Museum on Uēkahuna Bluff, the existing KVC is the only visitor center in the park, leading to crowding and potential decreased quality of visitor experiences as a result. The construction of the proposed replacement visitor center would demonstrate the park managers' commitment to this area as it would facilitate additional interpretive opportunities, increasing the importance of this location to further park interpretive themes and the stories communicated to visitors. Through the thoughtful design of the replacement visitor center, the recreation/historic character of the kauhale (integrated campus) would be mostly maintained and potentially improved for some visitors through increased educational and wayfinding opportunities. A larger area would be disturbed as a result of the replacement visitor center, and associated parking lot, but would occur within the core of the Visitor Services Zone identified in the 2016 GMP as a place to support a high level of visitor use, access, and interpretation.
KOP 3: Crater Rim Trail	The removal of infrastructure on Uēkahuna Bluff was identified in the 2016 GMP as an option if the HVO and Jaggar Museum were damaged. By creating a more natural, intact setting on the bluff, park interpretive themes would be more clearly communicated to reflect the sacredness of the area. This area is a focal point for views throughout this portion of the park, including views from KOP 4. This area is highly visited during volcanic events as it has one of the closest and most elevated views of the crater and night-glow from the volcano. The Project is part of park managers' commitment to increasing natural recreation opportunities on the bluff, adding onto the recent repairs to Crater Rim Trail, continued maintenance of the area after the 2018 volcanic activity, and presence of multiple rangers especially during volcanic events. Additional interpretive opportunities including signage, ranger-led hikes, or updates to the National Park Service app could further educate visitors on the importance of the area and traditional Hawaiian culture. Additionally, the reduction of infrastructure on the bluff would likely make the area more attractive for native birds to nest, furthering the park mission to perpetuate endemic Hawaiian ecosystems.
KOP 4: Volcano House Overlook	Through the partial removal of structures on Uēkahuna Bluff, the National Park Service is further committing to the importance of the setting adjacent to Kīlauea Crater, including views from this and the other overlooks toward the bluff. Views specifically from the Volcano House Overlook are often the first views of the crater for visitors and the location affords long-duration views of the landscape, including those from caldera-view rooms (a unique opportunity in the park). During volcanic events, there is increased visitation to both the overlook and the Volcano House, increasing the importance of this view to the overall park purpose to protect, study, and provide access to Kīlauea as well as to educate visitors on traditional Hawaiian culture. Due to the potential increased visitation at this location and improvements within the viewshed, the interpretive signage could be updated to provide additional information regarding Native Hawaiian culture as well as the importance of this viewshed, facilitating increased visitation time at this location.
KOP 5: Crater Rim Drive West of Kīlauea Visitor Center	The proposed modifications to the kauhale would facilitate increased opportunities for interpretation, elevating the importance of this location to further park interpretive themes. Through the thoughtful design of the replacement visitor center, including limiting the height of the building, mimicking the design of the existing KVC, and maintaining existing vegetation to the extent possible, the recreation/historic character of the area would be maintained and improved through increased opportunities to educate and guide visitors, including those walking around the kauhale. The unique character of this area would be preserved as well as maintaining the opportunity to access the visitor center, Crater Rim Trail, Volcano House, and Volcano Art Center without the need for a vehicle. This area is often the first place visited after the visitor center, setting up additional opportunities for site interpretation as part of the Project (e.g., signs, sculptures, additions to National Park Service app, additional native plantings, etc.) to continue to further park interpretive themes and stories.

KOP Number	Summary of Impacts on National Park Service
KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field	Since the proposed USGS field station would be screened from view in the larger openings in the forest along Crater Rim Drive, and if visible through small gaps in the forest would not attract attention, the Project would not impact the intact setting along the road. Other than a small existing distribution power line, the highly visited natural-appearing landscape from Uēkahuna Bluff to KMC would continue to support park interpretive themes, including those associated with perpetuating endemic Hawaiian ecosystems. This includes maintaining an intact, native forest setting for visitors when they are not in highly developed areas such as the KVC area. Since there is no active site interpretation that occurs in this area, the maintenance of this vegetation indirectly supports interpretive themes for this unique drive along the north side of an active volcano.
KOP 7: Kilauea Military Camp	Most recreation experiences, and the limited park interpretive themes at KMC, would be minimally affected by the introduction of the USGS field station as its presence would not limit these opportunities. As previously described, history and military history focused visitors may view the introduction of non-historic structures adjacent to KMC as an impact on the overall historic character of the area. During volcanic events, when the area is used as an overflow parking area, the presence of the USGS field station may increase interpretive opportunities and ability for USGS staff to interact with the public. This strengthens the mission for the Park Support Zone to work with National Park Service partners to provide a range of experiences for visitors. The increase in traffic and vehicles located adjacent to KMC may be distracting and draw attention toward the west side of camp, including the historic ball field. This additional attention affords the National Park Service an opportunity to increase interpretive themes in KMC, at the proposed USGS field station, and adjacent to the historic ball field, to educate the public on this evolving historic landscape.

6.4 Overall Impact to Park Resources and Visitors

Table 8 summarizes the results from Tables 5, 6, and 7 to consider the overall effect of the Project on each KOP and to assess the overall effect on the park and visitors. The description after the table explains how the proposed visual change, impacts on viewer experience, and effects on National Park Service management of the views would impact Hawai'i Volcanoes and its visitors as a whole. This includes compatibility of the Project with the Hawai'i Volcanoes GMP and long-term vision for the park

Table 8. Key Observation Point Summary of Impacts

KOP Number	Overall Effect on KOP
KOP 1: Park Entrance Road	The proposed transportation improvements near the park entrance station would result in moderate adverse impacts on landscape character, as the Project would be incompatible with the existing setting through the introduction of more transportation features into a mostly natural setting. Vegetation clearing proposed to accommodate the traffic circle and new entrance to the KVC would interrupt the existing continuity of the forest and introduce a new focal point after passing the park entrance station. The first impression of driving Crater Rim Drive and approaching the KVC, compared to the existing setting, would be modified as the densely vegetated road corridor would be more open. There would be more opportunities to explore the park initially, as a result of additional signage to reduce confusion and safer traffic flow facilitated by the construction of the traffic circle, and during volcanic events there would be shorter wait times to enter the park, as the Project would include more entrance lanes. The experience of driving along a densely vegetated corridor would occur in other portions of the park, including the section of Crater Rim Drive between the turnoff near this location and Nāhuku (Thurston Lava Tube). Based on these potential opportunities to increase interpretive opportunities sooner in the park through entrance signage as well as mitigation to preserve vegetation to the extent possible and plant native vegetation within the center of the traffic circle, the Project would result in moderate adverse impacts when considering its overall effects on landscape character, viewer experience, and National Park Service management. To further reduce these impacts, the planting of native vegetation within medians and along the roadside would visually break up expanses of pavement to blend with the natural setting and minimize the visual width of entry into the park.

KOP Number	Overall Effect on KOP
KOP 2: Kīlauea Visitor Center Entrance	From a visual contrast perspective, the replacement visitor center would result in moderate adverse impacts as the Project would be co-dominant with the existing KVC and expand the area viewed as modified leading to a more recreation-focused landscape compared to the existing recreation/natural setting. For most viewer types, this would be counterbalanced with the additional interpretive opportunities afforded by the replacement visitor center with enhanced 24/7 interpretive and trip planning information. Additionally, the design of the replacement visitor center mimics the elements found in the existing KVC. Through maintaining vegetation along Crater Rim Drive and behind the new building, as well as the planting native plants within the replacement visitor center parking lot, medians, and entrance, the physical presence of the building, including the proposed solar panels, would be reduced, bringing it more in scale with the existing KVC and the surrounding forest. From a National Park Service management perspective, the replacement visitor center would further the purpose of the Visitor Services Zone to support a high level of visitor use, access, and interpretation. Through thoughtful design of the replacement visitor center (e.g., choosing appropriate building materials to match the existing buildings, including roof color, and planting additional vegetation to screen views) and additional interpretive opportunities, increasing the importance of this location to further park interpretive themes and the stories communicated to visitors, the Project would result in low adverse impacts when considering its overall effects on landscape character, viewer experience, and National Park Service management.
KOP 3: Crater Rim Trail	The redesign of the facilities on Uēkahuna Bluff would be compatible with the existing landscape character. The removal of the HVO and Jaggar Museum as well as retaining some of the existing berm, to screen views toward the replacement water tank, the Project would improve scenic quality. If visible, the water tank would attract attention with the utilitarian-appearing feature being incompatible with the natural setting. To reduce impacts where the replacement water tank could be visible from other locations, the tank would be painted a darker color to match the setting, allowing it to blend with the natural landscape. Through the removal of existing structures and retaining some of the existing berm to screen views of the Project, the experience for most viewer types would be improved by returning the area to a more natural-appearing character, allowing visitors to focus on the landscape, including its cultural significance. The experience of hiking the trail from the Kilauea Overlook to Uēkahuna Bluff would be improved, without buildings obscuring the view, allowing the panoramic views from the high point to appear more suddenly, resulting in a more profound recreation experience. For many repeat local observers, especially those with a generational connection to the land, the presence and visibility of any structures on Uēkahuna Bluff would be seen as an impact on this culturally important landscape. The removal of infrastructure on Uēkahuna Bluff was identified in the 2016 GMP as an option to relocate these facilities to a less impactful location. By creating a more natural, intact setting on the bluff, park interpretive themes would be more clearly communicated to reflect the sacredness of the area. This area is a focal point for views throughout this portion of the park, including views from KOP 4. Additional interpretive opportunities, including signage, ranger-led hikes, or updates to the National Park Service app could further educate visitors on the importance of the area and traditional Hawaiian culture. The Project would result in moderate beneficial impacts when considering its overall effects on landscape character, viewer experience, and National Park Service management. The planting of additional native plants on the redesigned berm would further screen views of the Project and allow Project components to blend with the natural setting, resulting in additional beneficial impacts.
KOP 4: Volcano House Overlook	The removal of most structures on Uēkahuna Bluff, as viewed from this location, would reduce the extent of incompatible landscape features in the viewshed. The proposed overlook would use natural materials (lava rock and wood), be low profile in design, and would be constructed to blend with the setting's existing form, line, color, and texture to minimize their impact from this viewpoint approximately 2 miles away. The experience for all viewer types would be improved as a result of the Project, with casual eye observers having views with fewer human-made modifications, critical observers viewing a less modified setting similar to those prior to the construction of modern facilities on Uēkahuna Bluff, and repeat local observers, especially those with a generational connection to the land, having views of a more intact culturally important landscape. Through the partial removal of structures on Uēkahuna Bluff, the National Park Service is further committing to the importance of the setting adjacent to Kīlauea Crater, including views from this and the other overlooks toward the bluff. Due to the potential increased visitation and landscape improvements within the viewshed, the interpretive signage could be updated to provide additional information regarding Hawaiian culture to support the overall park purpose to educate visitors on traditional Hawaiian culture in addition to protecting, studying, and providing access to Kīlauea. These would further affirm importance of this viewshed to the park and would facilitate increased visitation time at this location. The Project would result in high beneficial impacts when considering its overall effects on landscape character, viewer experience, and National Park Service management.

KOP Number	Overall Effect on KOP
KOP 5: Crater Rim Drive West of Kīlauea Visitor Center	Since the replacement visitor center would be partially screened from view and the design would mimic the existing KVC, the Project would attract attention but would not be prominent in the setting as viewed from this location. Some viewer types would likely not notice the addition of the Project, especially first-time visitors or casual eye observers who may anticipate a more developed character adjacent to a visitor center in a national park. For critical eye observers and repeat local observers, the addition of the replacement visitor center would begin to shift this landscape toward a more recreation development-focused character, instead of the existing balanced recreation/natural composition, which is more directly visible from KOP 2. The historic setting of the area would be minimally impacted as the Project would not dominate the historic character of this area and would visually blend with the existing KVC. As described for KOP 2, maintaining native vegetation between Crater Rim Drive and the buildings (mostly 'ohi'a and koa), would maintain the visual continuity of this setting for the high number of visitors who travel this corridor. The intactness of vegetation along this corridor is especially important for critical observers and repeat local observers. From a National Park Service management perspective, the replacement visitor center would facilitate increased visitor interpretive opportunities. This area is often the first place visited after the visitor center leading to an opportunity to expand outdoor interpretive opportunities. Based on the thoughtful design of the replacement visitor center including using existing and proposed vegetation to screen views, choosing appropriate building materials to match the existing buildings, including roof color, increasing opportunities for site interpretive experiences, and furthering the purpose of the Visitor Services Zone to support high level of visitor use, the Project would result in low beneficial impacts when considering its overall effects on landscape character, viewer experience, and National Park Service management.
KOP 6: Crater Rim Drive toward Kilauea Military Camp and Historic Ball Field	Views of the proposed USGS field station would be screened from view in the large openings in the forest along Crater Rim Drive and if visible in small gaps in the forest, the Project would not attract attention from roadway as the dark colors proposed for the building would blend into the forest setting. Two simulation overlays were completed, confirming the Project would not be visible in the larger openings along the roadway. Since views would be screened, there would be limited impacts on viewers and their experience driving Crater Rim Drive. Other than a small existing distribution power line, the highly visited natural appearing landscape from Uēkahuna Bluff to KMC would continue to support park interpretive themes, including those associated with perpetuating endemic Hawaiian ecosystems. Preservation of the native vegetation along Crater Rim Drive and adjacent to the proposed USGS field station, especially the koa trees on the southwest corner of the proposed building, are essential to maintain this intact corridor and indirectly support interpretive themes for this unique drive along the north side of an active volcano. The Project would result in neutral impacts when considering its overall effects on landscape character, viewer experience, and National Park Service management.
KOP 7: Kilauea Military Camp	The proposed USGS field station would be partially compatible with the existing landscape character, as there are existing structures from different eras, including the historic KMC cabins as well as a maintenance facility with a large warehouse. The Project would interrupt the continuity of the landscape and introduce a more modern building into a view dominated by historic structures. Specifically, the split-gable roof and height of the building would attract attention and would be prominent as viewed from KMC. Existing vegetation would partially screen views of the proposed building. Casual observers would likely view the proposed USGS field station as being outside of the portion of KMC with an orderly design and if visiting later in the day, such as for parking for lava viewing, would have limited impacts on their experience. History and military history focused visitors, as well as repeat local observers, may view the Project as an incongruent landscape feature, which could begin to reduce the intactness of the historic setting, but since the proposed USGS field station would not be readily visible from many locations in KMC, there would be limited impacts on the experience of walking the grounds. Since there are limited existing interpretive opportunities at KMC, the Project would have minimal impacts on those park values and themes. During volcanic events, when the area is used as an overflow parking area, the presence of the USGS field station may increase interpretive opportunities and ability for USGS staff to interact with the public, resulting in potential beneficial impacts. This strengthens the mission for the Park Support Zone to work with National Park Service partners to provide a range of experiences for visitors. This additional attention affords the National Park Service an opportunity to increase interpretive themes in KMC, at the proposed USGS field station, and adjacent to the historic ball field, to educate the public on this evolving historic landscape. Based on these potential opportunities to increase interpretive opportunities and through minor modifications to the proposed USGS field station design to better blend with the existing setting, including planting of additional native vegetation to further screen views, the Project would result in low adverse effects when considering its overall effects on landscape character, viewer experience, and National Park Service management.

In general, the Project would increase visitor interpretive opportunities both at the KVC and on Uēkahuna Bluff as well as provide an experience more in tune with the area's natural, cultural, and historic character. By removing most of the structures on Uēkahuna Bluff, not only are views from that area more natural appearing but views from around the Kīlauea Crater toward the bluff would appear more visually

intact. In addition, the Project would implement the GMP's option to remove infrastructure on the bluff if the Jaggar Museum and HVO were significantly damaged or destroyed during volcanic activity.

The addition of the replacement visitor center would expand the area viewed as modified within the Visitor Services Zone, leading to a more recreation-focused landscape within the kauhale (integrated campus), but this would be counterbalanced with the additional interpretive opportunities, especially considering the removal of the Jaggar Museum.

The proposed USGS field station would impact the historic setting adjacent to KMC, introducing a more modern building into a view dominated by historic structures, but would occur in an area with minimal existing interpretive opportunities. The addition of the proposed USGS field station may provide an opportunity to expand cooperation with National Park Service partners including USGS, especially during volcanic events when the historic ball field is used as overflow parking.

Overall, the Project would further the park's mission as well as meet management zone- and site-specific guidance from the GMP. Specifically, this includes the following GMP elements (with relevant Project component[s] in parentheses):

- **Park Purpose**
  - Maintain vegetation, especially along intact roadway corridors and highly sensitive landscapes, to provide visitors opportunities to see endemic Hawaiian ecosystems (all project elements).
  - Provide interpretive opportunities and themes to perpetuate traditional Hawaiian culture through landscapes they are connected to (all project elements).
- **Visitor Services Zone Guidance**
  - Increase capacity for a larger number of park visitors through expansion of the park entrance area and number of entry lanes (park entrance).
  - Facilitate a higher level of visitor use, access, and interpretation in the Visitor Services Zone through the construction of the Project (replacement visitor center).
  - Provide orientation and intensive interpretation that is programmatically accessible with a wide range of media and facilities to support diverse visitor needs (replacement visitor center).
  - Opportunity to connect with the meanings and themes of the park, including preservation of cultural resources through the removal of structures in a culturally important landscape (Uēkahuna Bluff).
  - Provide safe access to volcanic events, with an appropriate level of visitor orientation, which is enhanced by the more natural setting proposed by the Project (Uēkahuna Bluff).
- **Park Support Zone Guidance**
  - Opportunity for National Park Service partners, including the USGS, to provide a range of experiences for visitors, especially during volcanic events when the historic ball field is used as an overflow parking area (proposed USGS field station)
- **Site-specific Guidance**
  - KVC and Surrounding Area: The GMP places a priority on keeping development within existing footprints but states a modest expansion may be necessary to achieve the overall vision and accommodate conflicts between vehicles and visitors. Additionally, the GMP suggests increasing parking and expanding the covered lanai space to address visitor use. The replacement visitor center would follow through on the GMP's vision for the kauhale (integrated campus).

- Jaggar Museum and HVO: The GMP identified three options if the Jaggar Museum and HVO were significantly damaged or destroyed during volcanic activity. The Project would mostly align with the second option of finding a new location for those facilities inside the park but off the crater edge and Uēkahuna Bluff. The proposed replacement visitor center and USGS field station would be constructed adjacent to the existing KVC and KMC respectively, both located away from the crater edge and Uēkahuna Bluff. Additionally, the Project would include removing three buildings, restoring their footprints, and planting native plants to initiate restoration of the site as identified in the third option.

7 MITIGATION

To reduce contrast (visual change) introduced by the Project, minimize effects on viewer experience, and limit impacts on National Park Service management, the following potential mitigation measures were identified:

- Reduce the height of proposed structures to the extent possible to decrease their visibility (and level of visual dominance) from viewpoints and to blend with the existing setting.
- Choose building materials, paint, stain, and other color treatments to match existing park structures and the natural, existing setting to minimize their visual intrusion and adverse effects on natural and cultural resources including the selection of the replacement visitor center roof color to match adjacent structures.
- Introduce additional site interpretation opportunities (e.g., signs, ranger led activities, or additions to National Park Service app) to describe historic, cultural, or natural elements modified by the Project. For example, this could include describing the cultural importance of Uēkahuna Bluff, the construction of structures on the bluff, and the subsequent removal of most of these structures to return the area to a more natural condition after the 2018 volcanic activity.
- Maintain, or expand, landscape plantings adjacent to the replacement visitor center and USGS field station including selective clearing of mature ʻōhiʻa lehua and koa during construction to maintain existing vegetative screening.
- Maintain, or expand, landscape plantings along Crater Rim Drive to minimize visibility of structures proposed by the Project. Additional plantings within the proposed traffic circle, in medians, and along the roadside would visually break up expanses of pavement to blend with the natural setting, minimize visibility of the traffic circle, minimize the visual width of entry into the park, and minimize visibility of the Project within historic districts.
- Maintain enough of the redesigned berm to reduce the visibility of the replacement water tank on Uēkahuna Bluff as viewed from the Crater Rim Trail.
- Expand landscape plantings on and adjacent to the redesigned berm to further screen views of the replacement water tank.
- Choose a paint color for the replacement water tank on Uēkahuna Bluff to allow it to blend with the natural setting.

8 LITERATURE CITED

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Appendix A

View Inventory Forms

VIEW INVENTORY FORM

KOP Viewpoint: #1: Park Entrance Road _____ **Date**: 7/13/2021

Recorder: Kevin Rauhe _____ **Time**: _____

INSTRUCTIONS. Describe the existing visual qualities of the view: its landscape character, visual elements, and spatial patterns. Circle terms that fit for each component and provide notes to explain key details.

LANDSCAPE CHARACTER

Describe the existing landscape's character. Consider the character type, diversity and the dominance and contribution of the existing landscape elements to the visual quality of the view. Circle as many terms as needed and add notes to help describe the view

Existing Character Type(s):	Natural	Pastoral	Agricultural	Rural	Suburban	Urban	Industrial

Notes**:** Other than the park entrance station, roadway, signage, and overhead lines, the entrance road is mostly a natural setting

Landscape Diversity	Uniform	Simple	Diverse	Complex

Notes: Repeating vegetation types (ʻōhiʻa lehua, koa, and hapuʻu) and patterns occur in proximity to this viewpoint

View type	Panorama	Enclosed	Focal	Feature	Framed	Canopy

Notes: Narrow enclosed corridor along the roadway

What are the dominant materials and style of built elements? Lava rock and metal roof in park entrance station with a tall roof line; typical National Park Service wood and metal signage

Other factors:

Landscape Features

Refer to the Field Guide to identify the most prominent features in the landscape. Rate their dominance (**L** – present but inconspicuous, **M** – for evident, and **H** – for very conspicuous) and whether the contribution to landscape quality is negative (**—**) or positive (**+**).

Element	Dominance			Contrib.		Element	Dominance			Contrib.	
	L	M	H	+	—		L	M	H	+	—
Roadway	■			■							
Park entrance station		■			■						
Overhead power/communication lines	■				■						
Signage and barriers	■				■						

VISUAL ELEMENTS

Describe the existing view's visual elements of form, line, color and texture. If available, use a photograph to annotate the most prominent visual elements as shown on the field guide. Refer to the field guide for additional descriptive vocabulary.

FORM:	Blocky	Angular	Sloping	Circular	Rolling	Rounded	Flat	Pyramidal

Notes: The park entrance station has a blocky, angular form; the forest canopy creates a dense, rounded form split by the roadway

LINE:	Vertical	Horizontal	Angular	Curving	Irregular	Broken	Sinuous	Undulating

Notes: Vertical and angular lines in park entrance station, curving lines in roadway, vertical lines in signage

COLOR:	Red	Green	White	Gray
	Orange	Yellow	Blue	Black
	Brown			

Notes: Range of greens in vegetation, gray roadway, park entrance station has a range of grays from dark lava rock to light gray roof, brown signage

TEXTURE:	Smooth	Rough	Medium	Fine	Coarse	Patchy	Stippled	Uniform

Notes: Forest canopy forms a uniform medium texture, whereas the park entrance station introduces rough textures due to its blocky, vertical form

VIEW INVENTORY FORM

SPATIAL COMPOSITION COMPONENTS				
Describe the aspects of existing view's spatial composition and patterns (i.e., balance, scale, continuity). If available, use a photograph to annotate the existing focal points, visual balance and coherence of the view, as well as the other spatial pattern elements.				
BALANCE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: With the park entrance station in the middle of the roadway, the view is well balanced, creating an overall symmetrical view				
SCALE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: None of the built elements are taller than the trees, which brings them into balance with the natural setting				
FOCAL POINTS:	None	Minimal	Moderate	Strong
NOTES: The dense forest and roadway direct focus along the curvilinear roadway and toward the park entrance station				
CONTINUITY:	Unified/Connected	Interrupted	Fragmented	Chaotic
NOTES: The landscape is generally unified, except for the park entrance station and roadway, which have carved a path through the forest				
PATTERN:	Random	Organized	Regular	Formal
NOTES: Since there are minimal elements in view, except for facilities to support the park entrance that follow the roadway, the overall view is organized with those elements				
NOTES:				

OBSERVER POSITION	DISTANCE ZONES
☐ Looking up	Foreground: Views are limited due to the dense forest, which parallels the road from the entrance past this location to the KVC
X Eye level	Middle ground: Not applicable due to dense forest screening views
☐ Looking down	Background: Not applicable due to dense forest screening views

VIEW INVENTORY FORM

View west from park entrance road toward the KVC and proposed road re-alignment and traffic circle

View east from park entrance road toward the entrance station, turn to Chain of Craters Road, and Highway 11

VIEW INVENTORY FORM

KOP Viewpoint: #2: Kīlauea Visitor Center Entrance **Date**: 7/13/2021

Recorder: Kevin Rauhe **Time**:

INSTRUCTIONS. Describe the existing visual qualities of the view: its landscape character, visual elements, and spatial patterns. Circle terms that fit for each component and provide notes to explain key details.

LANDSCAPE CHARACTER

Describe the existing landscape's character. Consider the character type, diversity and the dominance and contribution of the existing landscape elements to the visual quality of the view. Circle as many terms as needed and add notes to help describe the view

Existing Character Type(s):	Natural	Pastoral	Agricultural	Rural	Suburban	Urban	Industrial

Notes**:** While the setting is generally natural appearing, the presence of the visitor center and other structures in the area evoke a natural developed type.

Landscape Diversity	Uniform	Simple	Diverse	Complex

Notes: This natural, developed landscape has a common character in the viewshed, with the visitor center and parking lot being the primary elements visible from this location, creating a landscape with simple diversity.

View type	Panorama	Enclosed	Focal	Feature	Framed	Canopy

Notes: The overall setting presents an enclosed view type due to the dense forest surrounding the KVC and associated parking lot.

What are the dominant materials and style of built elements? The visitor center is made of lava rock and wood, with a long ridge broken up by a series of pyramidal roof forms.

Other factors:

Landscape Features

Refer to the Field Guide to identify the most prominent features in the landscape. Rate their dominance (**L** – present but inconspicuous, **M** – for evident, and **H** – for very conspicuous) and whether the contribution to landscape quality is negative (**—**) or positive (**+**).

Element	**Dominance**			**Contrib.**		**Element**	**Dominance**			**Contrib.**	
	L	**M**	**H**	**+**	**—**		**L**	**M**	**H**	**+**	**—**
Existing visitor center		■		■							
Roadway	■			■							
Parking lot		■			■						
Signage and light posts	■				■						

VISUAL ELEMENTS

Describe the existing view's visual elements of form, line, color and texture. If available, use a photograph to annotate the most prominent visual elements as shown on the field guide. Refer to the field guide for additional descriptive vocabulary.

FORM:	Blocky	Angular	Sloping	Circular	Rolling	Rounded	Flat	Pyramidal

Notes: The visitor center has a blocky, angular form; the forest canopy creates a dense, rounded form surrounding the KVC and parking lot.

LINE:	Vertical	Horizontal	Angular	Curving	Irregular	Broken	Sinuous	Undulating

Notes: Vertical, horizontal, and angular lines in the visitor center, vertical lines in signage and light posts.

COLOR:				
	Red	Green	White	Gray
	Orange	Yellow	Blue	Black
	Brown			

Notes: Range of greens in vegetation; gray roadway; the KVC is made of dark lava rock, dark brown siding, and a brown roof.

TEXTURE:	Smooth	Rough	Medium	Fine	Coarse	Patchy	Stippled	Uniform

Notes: Forest canopy forms a uniform medium texture whereas the visitor center introduces rough textures due to its blocky, vertical form including the form of the chimneys and pyramidal roof forms.

VIEW INVENTORY FORM

SPATIAL COMPOSITION COMPONENTS				
Describe the aspects of existing view's spatial composition and patterns (i.e., balance, scale, continuity). If available, use a photograph to annotate the existing focal points, visual balance and coherence of the view, as well as the other spatial pattern elements.				
BALANCE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: The visitor center and parking lot have similar overstory vegetation as the adjacent forest, creating a balanced setting.				
SCALE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: None of the built elements are taller than the trees, which helps brings the structures into balance with the natural setting.				
FOCAL POINTS:	None	Minimal	Moderate	Strong
NOTES: The form of the visitor center attracts your attention and is the focal point in this setting.				
CONTINUITY:	Unified/Connected	Interrupted	Fragmented	Chaotic
NOTES: The visitor center and parking lot creates a large opening in the forest that interrupts the continuity of the surrounding forest setting. While not visible from this location, there are multiple historic structures in the visitor center area that create a historic character that is more apparent in other locations.				
PATTERN:	Random	Organized	Regular	Formal
NOTES: The visitor center area is ordered and clearly designed, including ornamental landscape plantings and large parking areas.				
NOTES:				

OBSERVER POSITION	DISTANCE ZONES
☐ Looking up	Foreground: Views are limited due to the dense forest that surrounds the visitor center area
X Eye level	Middle ground: Not applicable due to dense forest screening views
☐ Looking down	Background: Not applicable due to dense forest screening views

VIEW INVENTORY FORM

View north toward the existing KVC and parking lot

View northwest toward the existing KVC parking lot and proposed replacement visitor center

VIEW INVENTORY FORM

KOP Viewpoint: #3: Crater Rim Trail **Date**: 7/13/2021

Recorder: Kevin Rauhe **Time**: _____

INSTRUCTIONS. Describe the existing visual qualities of the view: its landscape character, visual elements, and spatial patterns. Circle terms that fit for each component and provide notes to explain key details.

LANDSCAPE CHARACTER

Describe the existing landscape's character. Consider the character type, diversity and the dominance and contribution of the existing landscape elements to the visual quality of the view. Circle as many terms as needed and add notes to help describe the view

Existing Character Type(s):	Natural	Pastoral	Agricultural	Rural	Suburban	Urban	Industrial

Notes**:** The setting is largely natural appearing except for the presence of the structures, including the HVO, Geochemistry Annex building, and Jaggar Museum, which have modified this setting.

Landscape Diversity	Uniform	Simple	Diverse	Complex

Notes: Largely natural setting with Kīlauea Crater and Mauna Loa visible as well as the existing structures on the bluff.

View type	Panorama	Enclosed	Focal	Feature	Framed	Canopy

Notes: Due to the lack of tall vegetation adjacent to the crater, the views are open and panoramic.

What are the dominant materials and style of built elements? The structures are made of lava rock and wood with a metal roof. The existing HVO includes a tall observation tower, which rises above the other single-story structures. Existing water tanks are screened by a berm. A steel lattice radio tower is located adjacent to the other structures.

Landscape Features

Refer to the Field Guide to identify the most prominent features in the landscape. Rate their dominance (**L** – present but inconspicuous, **M** – for evident, and **H** – for very conspicuous) and whether the contribution to landscape quality is negative (**—**) or positive (**+**).

Element	**Dominance**			**Contrib.**		**Element**	**Dominance**			**Contrib.**	
	L	**M**	**H**	**+**	**—**		**L**	**M**	**H**	**+**	**—**
Jaggar Museum	■				■	Fence posts and barrier	■				■
Hawaiian Volcano Observatory (HVO)			■		■	Radio tower		■			■
Water tanks	■				■						

VISUAL ELEMENTS

Describe the existing view's visual elements of form, line, color and texture. If available, use a photograph to annotate the most prominent visual elements as shown on the field guide. Refer to the field guide for additional descriptive vocabulary.

FORM:	Blocky	Angular	Sloping	Circular	Rolling	Rounded	Flat	Pyramidal

Notes: The existing structures have a blocky, angular form. The adjacent setting is defined by the eroding crater with flat level benches and Mauna Loa rising above the landscape with its massive shape.

LINE:	Vertical	Horizontal	Angular	Curving	Irregular	Broken	Sinuous	Undulating

Notes: Vertical, horizontal, and angular lines in the existing structures; vertical lines in the radio tower and fence posts; curving line of the trail. Horizontal and undulating lines are evident along the crater rim and down the layers of eroding rocks. Mauna Loa has long, angular lines meeting at the summit.

COLOR:	Red	Green	White	Gray
	Orange	Yellow	Blue	Black
	Brown			

Notes: Scattered green/tan vegetation; gray trail; gray/brown exposed soil and lava rock; existing structures have dark lava rock, dark brown siding, and red or brown roofs. Views across the crater include dense green vegetation contrasting with the adjacent gray/brown lava rock.

TEXTURE:	Smooth	Rough	Medium	Fine	Coarse	Patchy	Stippled	Uniform

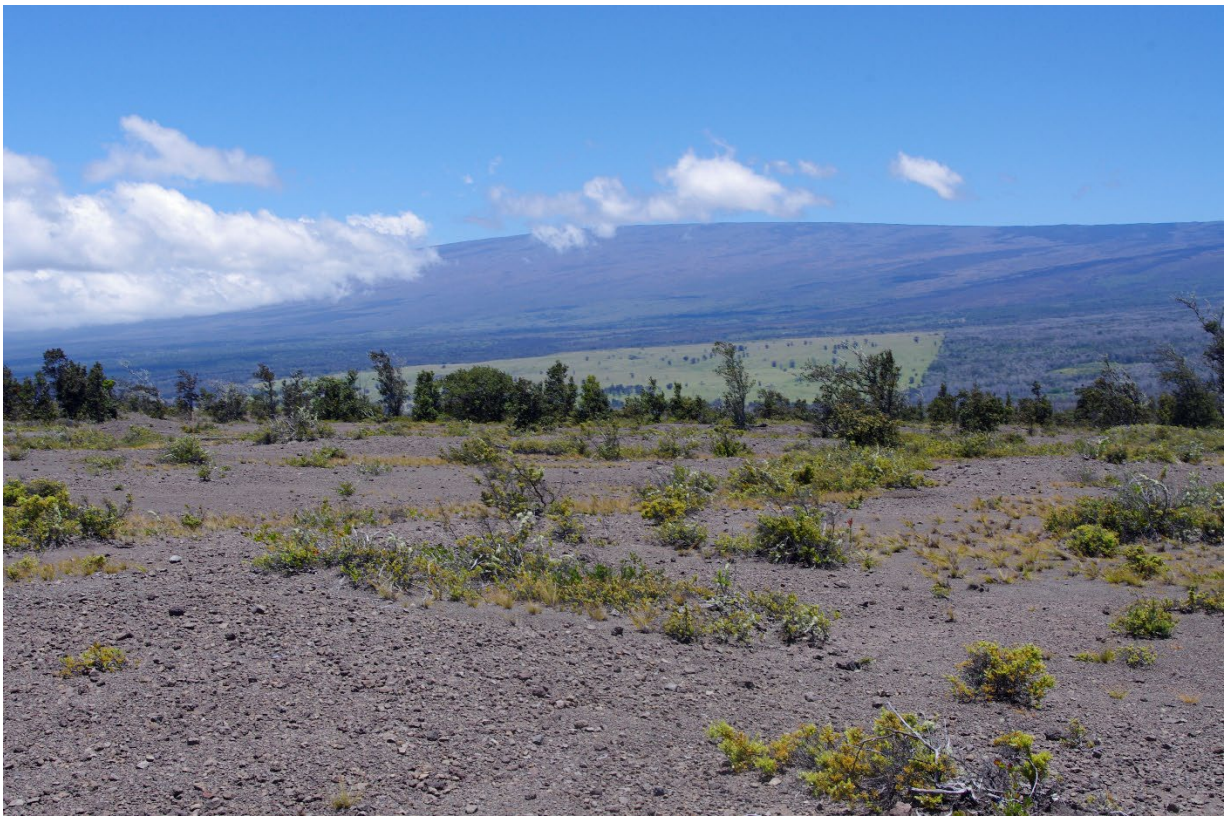
Notes: The general texture is medium due to the scattered vegetation and variable rock sizes throughout the areas of exposed soil/rock. The existing structures including the radio tower introduce rougher textures into the setting. Adjacent scenery includes rough, broken crater walls and the fine, smooth texture of Mauna Loa.

VIEW INVENTORY FORM

SPATIAL COMPOSITION COMPONENTS				
Describe the aspects of existing view's spatial composition and patterns (i.e., balance, scale, continuity). If available, use a photograph to annotate the existing focal points, visual balance and coherence of the view, as well as the other spatial pattern elements.				
BALANCE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: The presence of these large buildings in a largely natural setting is out of balance.				
SCALE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: Due to the panoramic setting and limited existing vegetation, the scale of the existing structures does not fit within the natural setting.				
FOCAL POINTS:	None	Minimal	Moderate	Strong
NOTES: There are multiple focal points in this setting with Kīlauea Crater being the most dominant. The existing structures on the bluff and Mauna Loa also attract attention in the setting.				
CONTINUITY:	Unified/Connected	Interrupted	Fragmented	Chaotic
NOTES: The existing structures on the bluff interrupt the natural continuity of the landscape.				
PATTERN:	Random	Organized	Regular	Formal
NOTES: The variety of structures (HVO, Geochemistry Annex, Jaggar Museum, water tanks, radio tower, and restrooms) have some common design elements but through differing designs, do not form an organized or regular composition in the setting.				
NOTES:				

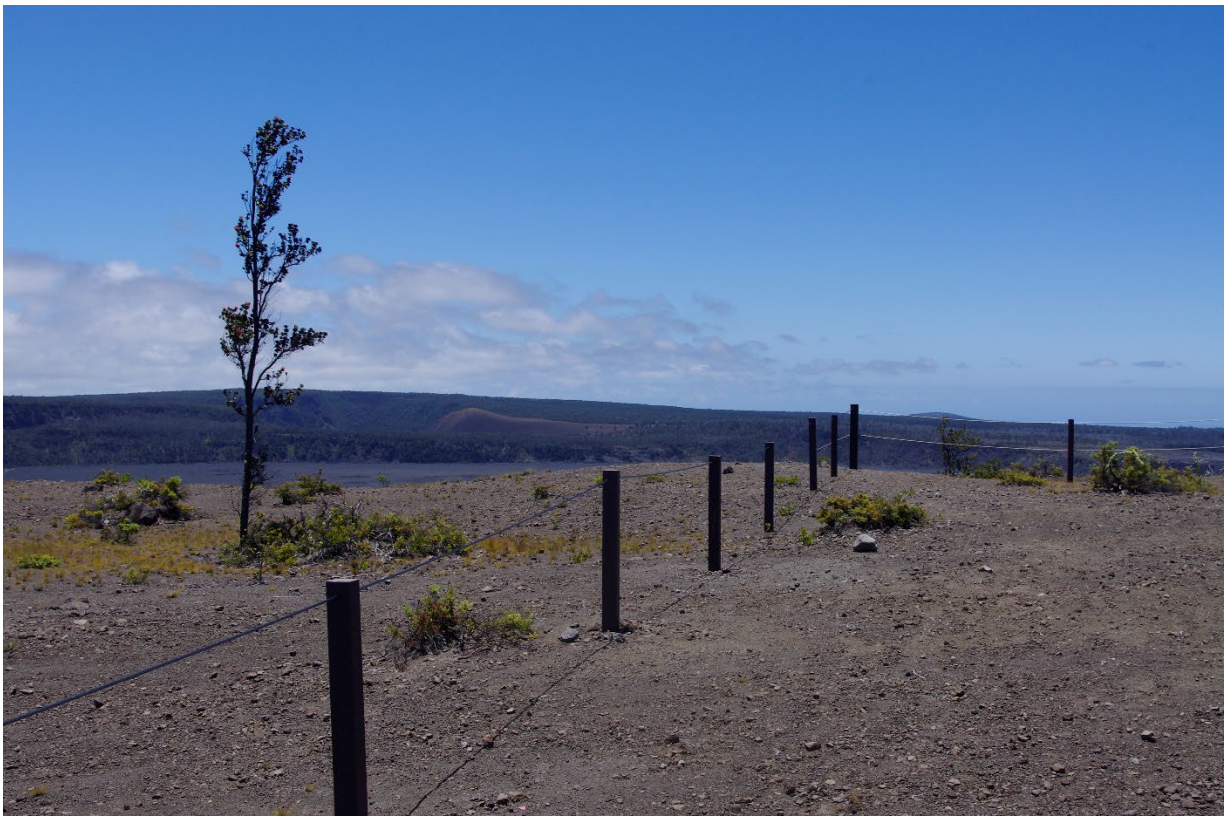
OBSERVER POSITION	DISTANCE ZONES
X Looking up	Foreground: Views are focused on the existing structures and of the edge of the caldera
X Eye level	Middle ground: Views across the caldera and toward the lower slopes of Mauna Loa
☐ Looking down	Background: Distant views to Mauna Loa and surrounding areas (depending on atmospheric conditions)

View southwest from Crater Rim Trail toward the existing Jaggar Museum and HVO visible on Uēkahuna Bluff



View west from Crater Rim Trail toward Mauna Loa

VIEW INVENTORY FORM



View southeast from Crater Rim Trail across Kīlauea Crater

VIEW INVENTORY FORM

KOP Viewpoint: #4: Volcano House Overlook **Date**: 8/2/2021

Recorder: Kevin Rauhe **Time**: _____

INSTRUCTIONS. Describe the existing visual qualities of the view: its landscape character, visual elements, and spatial patterns. Circle terms that fit for each component and provide notes to explain key details.

LANDSCAPE CHARACTER

Describe the existing landscape's character. Consider the character type, diversity and the dominance and contribution of the existing landscape elements to the visual quality of the view. Circle as many terms as needed and add notes to help describe the view

Existing Character Type(s):	Natural	Pastoral	Agricultural	Rural	Suburban	Urban	Industrial

Notes**:** Generally intact natural setting except for the presence of the Jaggar Museum and HVO on the bluff, which have modified the setting.

Landscape Diversity	Uniform	Simple	Diverse	Complex

Notes: Natural setting with views of Kīlauea Crater, including the intermediate vegetated bench, and Mauna Loa rising above the landscape in the background. The geometric existing structures on the bluff contrast with the natural, horizontal and angular lines.

View type	Panorama	Enclosed	Focal	Feature	Framed	Canopy

Notes: Due to the lack of tall vegetation adjacent to this viewpoint, views are unobstructed and panoramic over the intermediate bench toward Kīlauea Crater, Uēkahuna Bluff, and Mauna Loa.

What are the dominant materials and style of built elements? The structures are made of lava rock and wood with a metal roof. The existing HVO building includes a tall observation tower that rises above the other, single-story structures. An existing lava rock wall and steel interpretive sign are located directly adjacent to this viewpoint.

Landscape Features

Refer to the Field Guide to identify the most prominent features in the landscape. Rate their dominance (**L** – present but inconspicuous, **M** – for evident, and **H** – for very conspicuous) and whether the contribution to landscape quality is negative (**—**) or positive (**+**).

Element	**Dominance**			**Contrib.**		**Element**	**Dominance**			**Contrib.**	
	L	**M**	**H**	**+**	**—**		**L**	**M**	**H**	**+**	**—**
Jaggar Museum	■				■	Lava rock wall (immediate foreground)	■			■	
Hawaiian Volcano Observatory (HVO)		■			■	Radio tower	■				■
Water tanks	■				■						

VISUAL ELEMENTS

Describe the existing view's visual elements of form, line, color and texture. If available, use a photograph to annotate the most prominent visual elements as shown on the field guide. Refer to the field guide for additional descriptive vocabulary.

FORM:	Blocky	Angular	Sloping	Circular	Rolling	Rounded	Flat	Pyramidal

Notes: The existing landscape is defined by the eroding crater with flat, level benches descending along steep slopes down to the crater floor. Mauna Loa rises above the landscape in the background with its massive shape. Existing structures on the bluff have a blocky, angular form.

LINE:	Vertical	Horizontal	Angular	Curving	Irregular	Broken	Sinuous	Undulating

Notes: Horizontal and undulating lines are evident from the crater rim down the layers of eroding rocks, including the intermediate benches. A similar undulating line forms a butt edge between the vegetation on the intermediate bench and the stark lava flows. In the background, Mauna Loa has long, angular lines meeting at the summit. The structures on the bluff create horizontal and angular lines in the landscape.

COLOR:	Red	Green	White	Gray
	Orange	Yellow	Blue	Black
	Brown			

Notes: Vegetation on the intermediate bench includes a mix of greens and grays. The lava rocks on the crater walls and floors include a range of colors from dark gray to brown with areas of brighter, red lava. Scattered dark green vegetation is visible on the crater rim and distant crater wall.

TEXTURE:	Smooth	Rough	Medium	Fine	Coarse	Patchy	Stippled	Uniform

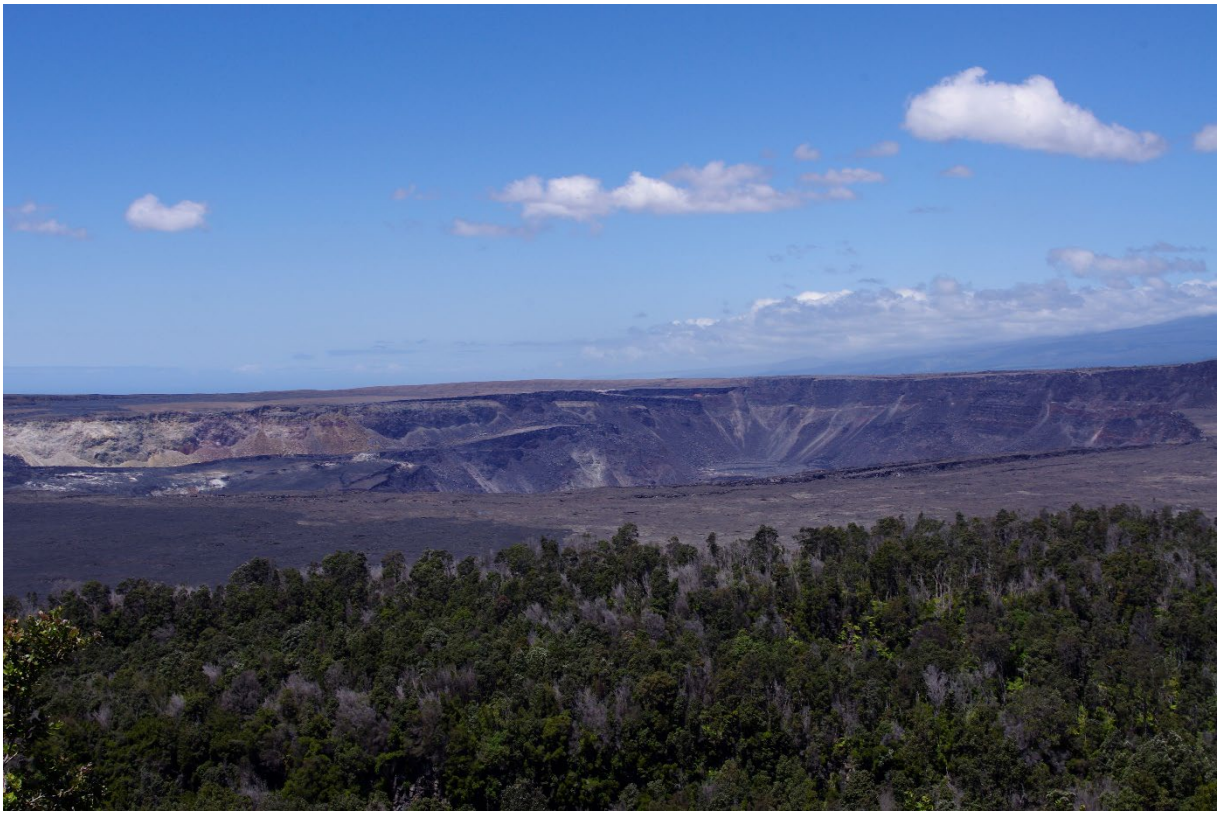
Notes: There is a range of textures from rough, broken crater walls to the medium-textured forest on the intermediate bench and the fine, smooth texture of Mauna Loa. Stippled vegetation occurs along the distant crater wall and rim.

VIEW INVENTORY FORM

SPATIAL COMPOSITION COMPONENTS				
Describe the aspects of existing view's spatial composition and patterns (i.e., balance, scale, continuity). If available, use a photograph to annotate the existing focal points, visual balance and coherence of the view, as well as the other spatial pattern elements.				
BALANCE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: The natural setting is well balanced and displays the active nature of this landscape, forming a harmonious composition with limited visible landscape modifications. The structures on the bluff attract attention but do not disturb the balance formed by the natural setting.				
SCALE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: Similar to balance, the setting is harmonious as the structures are visible but due to the massive scale of the natural landscape, the natural elements dominate the setting.				
FOCAL POINTS:	None	Minimal	Moderate	Strong
NOTES: This distant viewpoint has three main focal points. The first two (Kīlauea Crater and Mauna Loa) are largely intact and appear natural from this location. The other main focal point is Uēkahuna Bluff, which is the highpoint on the crater wall. The existing structures on the bluff attract attention because they are sited at this focal point in the landscape.				
CONTINUITY:	Unified/Connected	Interrupted	Fragmented	Chaotic
NOTES: The existing structures on the bluff interrupt the natural continuity of the landscape but due to the distance, their visual dominance in the setting diminishes, allowing the natural setting to appear unified.				
PATTERN:	Random	Organized	Regular	Formal
NOTES: From this distance, the variety of structures on the bluff appear similar due to their common form and colors. Since they are located in the same area, their presence appears organized and their effect on the setting limited to the bluff area.				
NOTES:				

OBSERVER POSITION	DISTANCE ZONES
X Looking up	Foreground: Views of the caldera edge and vegetated intermediate bench
X Eye level	Middle ground: Views across the caldera toward Uēkahuna Bluff and the eroding crater floor
☐ Looking down	Background: Distant views of Mauna Loa and surrounding areas (depending on atmospheric conditions)

View west toward Uēkahuna Bluff with the existing Jaggar Museum and HVO visible on the bluff



View southwest across Kīlauea Crater and toward Halemaʻumaʻu Crater

VIEW INVENTORY FORM

KOP Viewpoint: #5 – Crater Rim Drive West of Kīlauea Visitor Center **Date**: 10/14/2021

Recorder: Kevin Rauhe **Time**:

INSTRUCTIONS. Describe the existing visual qualities of the view: its landscape character, visual elements, and spatial patterns. Circle terms that fit for each component and provide notes to explain key details.

LANDSCAPE CHARACTER

Describe the existing landscape's character. Consider the character type, diversity and the dominance and contribution of the existing landscape elements to the visual quality of the view. Circle as many terms as needed and add notes to help describe the view

Existing Character Type(s):	Natural	Pastoral	Agricultural	Rural	Suburban	Urban	Industrial

Notes**:** While the setting is generally natural appearing, the presence of the visitor center, turfgrass, and other structures in the area evoke a natural developed character type.

Landscape Diversity	Uniform	Simple	Diverse	Complex

Notes: This natural, developed landscape has a diverse character due to the varying architectural styles in the visitor center, Volcano Art Center, and other structures visible from this location, which are accompanied by parking areas, trails, and ornamental landscape plantings.

View type	Panorama	Enclosed	Focal	Feature	Framed	Canopy

Notes: The overall setting presents an enclosed view type due to the dense forest surrounding the visitor center, Volcano Art Center, and current Volcano House (not visible from this location), with those structures attracting attention and becoming features within the view.

What are the dominant materials and style of built elements? The visitor center is made of lava rock, wood, with a long ridge broken up by a series of pyramidal roof forms. Volcano Art Center is made of wood siding stained red and a gray roof with a tall, gable roof line.

Other factors:

Landscape Features

Refer to the Field Guide to identify the most prominent features in the landscape. Rate their dominance (**L** – present but inconspicuous, **M** – for evident, and **H** – for very conspicuous) and whether the contribution to landscape quality is negative (—) or positive (**+**).

Element	**Dominance**			**Contrib.**		**Element**	**Dominance**			**Contrib.**	
	L	**M**	**H**	**+**	**—**		**L**	**M**	**H**	**+**	**—**
Existing visitor center		■		■		Volcano Art Center (former Volcano House)		■		■	
Roadway	■			■							
Parking lot		■			■						
Signage and light posts	■				■						

VISUAL ELEMENTS

Describe the existing view's visual elements of form, line, color and texture. If available, use a photograph to annotate the most prominent visual elements as shown on the field guide. Refer to the field guide for additional descriptive vocabulary.

FORM:	Blocky	Angular	Sloping	Circular	Rolling	Rounded	Flat	Pyramidal

Notes: The visitor center and Volcano Art Center have a blocky, angular form; forest canopy creates a dense rounded form surrounding these structures and parking lot.

LINE:	Vertical	Horizontal	Angular	Curving	Irregular	Broken	Sinuous	Undulating

Notes: Vertical, horizontal, and angular lines in the visitor center and Volcano Art Center, vertical lines in signage and light posts

COLOR:				
Red	Green	White	Gray
Orange	Yellow	Blue	Black
Brown			

Notes: Range of greens in vegetation; gray roadway; the visitor center is made up of dark lava rock, dark brown siding, and a brown roof; Volcano Art Center is made of red-stained wood siding and a gray roof.

TEXTURE:	Smooth	Rough	Medium	Fine	Coarse	Patchy	Stippled	Uniform

Notes: Forest canopy forms a uniform medium texture whereas the visitor center and Volcano Art Center introduce rough textures due to their blocky, vertical form, including the form of the chimneys and pyramidal roof forms.

VIEW INVENTORY FORM

SPATIAL COMPOSITION COMPONENTS				
Describe the aspects of existing view's spatial composition and patterns (i.e., balance, scale, continuity). If available, use a photograph to annotate the existing focal points, visual balance and coherence of the view, as well as the other spatial pattern elements.				
BALANCE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: The visitor center, Volcano Art Center, and parking lots contain similar overstory vegetation as the adjacent forest, creating a balanced setting.				
SCALE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: None of the built elements are taller than the trees, which helps brings the structures into balance with the natural setting.				
FOCAL POINTS:	None	Minimal	Moderate	Strong
NOTES: The form of the visitor center and Volcano Art Center attract your attention and are the focal points in this setting.				
CONTINUITY:	Unified/Connected	Interrupted	Fragmented	Chaotic
NOTES: The visitor center, Volcano Art Center, Volcano House (not visible from this location), and parking lots create large openings in the forest that interrupt the continuity of the surrounding forest setting. Since many of these structures within the kauhale (integrated campus) are historic, this area evokes a historic character that is more apparent here than in other locations within the kauhale.				
PATTERN:	Random	Organized	Regular	Formal
NOTES: The visitor center area, Volcano Art Center, and current Volcano House areas are ordered and designed, including ornamental landscape plantings and large parking areas.				
NOTES:				

OBSERVER POSITION	DISTANCE ZONES
☐ Looking up	Foreground: Views are limited due to the dense forest that surrounds the visitor center area with views most open along Crater Rim Drive
X Eye level	Middle ground: Not applicable due to dense forest screening views
☐ Looking down	Background: Not applicable due to dense forest screening views

View west from trail adjacent to Crater Rim Drive toward existing KVC and interpretive signage

View northwest from trail adjacent to Crater Rim Drive toward the Volcano Art Center (former Volcano House)

VIEW INVENTORY FORM

KOP Viewpoint: #6 – Crater Rim Drive toward KMC and historic ball field _____ **Date**: 11/18/2021

Recorder: Kevin Rauhe _____ **Time**: _____

INSTRUCTIONS. Describe the existing visual qualities of the view: its landscape character, visual elements, and spatial patterns. Circle terms that fit for each component and provide notes to explain key details.

LANDSCAPE CHARACTER

Describe the existing landscape's character. Consider the character type, diversity and the dominance and contribution of the existing landscape elements to the visual quality of the view. Circle as many terms as needed and add notes to help describe the view

Existing Character Type(s):	Natural	Pastoral	Agricultural	Rural	Suburban	Urban	Industrial

Notes**:** The setting is mostly natural along a densely forested roadway with limited visible existing modifications except for the powerline and roadway. There are intermittent openings in the forest with views toward the historic ball field adjacent to KMC.

Landscape Diversity	Uniform	Simple	Diverse	Complex

Notes: This natural landscape has uniform landscape diversity as the dense forest and roadway create a repeating theme along this stretch of Crater Rim Drive. There are limited views of developed areas, until closer to KMC, where the landscape becomes more diverse.

View type	Panorama	Enclosed	Focal	Feature	Framed	Canopy

Notes: The enclosed setting through an ʻōhiʻa/koa forest focuses views along the roadway, with the linear corridor becoming the setting's primary feature. Intermittent openings in the forest introduce short duration framed views of the historic ball field and surrounding areas.

What are the dominant materials and style of built elements? There are limited structures in view with the asphalt road and wooden power line poles being the primary visible built elements. Glimpses of structures associated with KMC appear where white, or other light-colored, features contrast with the forest's natural green, brown, and tan colors. These views occur infrequently along the road.

Other factors:

Landscape Features

Refer to the Field Guide to identify the most prominent features in the landscape. Rate their dominance (**L** – present but inconspicuous, **M** – for evident, and **H** – for very conspicuous) and whether the contribution to landscape quality is negative (**—**) or positive (**+**).

Element	**Dominance**			**Contrib.**		**Element**	**Dominance**			**Contrib.**	
	L	**M**	**H**	**+**	**—**		**L**	**M**	**H**	**+**	**—**
Powerline	■				■	Historic ball field	■			■	
Roadway	■			■		KMC maintenance buildings	■				■

VISUAL ELEMENTS

Describe the existing view's visual elements of form, line, color and texture. If available, use a photograph to annotate the most prominent visual elements as shown on the field guide. Refer to the field guide for additional descriptive vocabulary.

FORM:	Blocky	Angular	Sloping	Circular	Rolling	Rounded	Flat	Pyramidal

Notes: The terrain in this area is flat to slightly rolling with a level, geometric roadway cut through the forest, which is defined by its dense, rounded forms on either side of the road.

LINE:	Vertical	Horizontal	Angular	Curving	Irregular	Broken	Sinuous	Undulating

Notes: Horizontal lines are formed by the roadway with vertical lines in the tree trunks and powerline poles. The forest canopy creates curving lines in the setting.

COLOR:				
	Red	Green	White	Gray
	Orange	Yellow	Blue	Black
	Brown			

Notes: Range of greens in vegetation; gray roadway (yellow and white striping); brown powerline poles.

TEXTURE:	Smooth	Rough	Medium	Fine	Coarse	Patchy	Stippled	Uniform

Notes: The forest canopy forms a mostly uniform medium texture that partially conceals the powerline poles along the roadway. The road surface and meadow, visible through the forest openings, are finer textured and smoother in comparison.

VIEW INVENTORY FORM

SPATIAL COMPOSITION COMPONENTS				
Describe the aspects of existing view's spatial composition and patterns (i.e., balance, scale, continuity). If available, use a photograph to annotate the existing focal points, visual balance and coherence of the view, as well as the other spatial pattern elements.				
BALANCE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: With similar forest canopies on either side of the road and the lack of additional features in view, the setting appears balanced from this location.				
SCALE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: The roadway has narrow shoulders, and the powerline poles are partially concealed by vegetation, which creates a setting where built features are balanced in scale with the natural setting.				
FOCAL POINTS:	None	Minimal	Moderate	Strong
NOTES: Views are focused along the roadway with that being the primary focal point. Glimpses of openings in the forest attract the eye while driving Crater Rim Drive but are short in duration and occur infrequently.				
CONTINUITY:	Unified/Connected	Interrupted	Fragmented	Chaotic
NOTES: As motorists travel between the Uēkahuna Bluff and KMC, the setting is unified and connected by the ʻōhiʻa/koa forest, which becomes more dense approaching KMC. There are intermittent views along the road through forest openings but these are brief and mostly are of recreation sites (or their access roads) along Crater Rim Drive.				
PATTERN:	Random	Organized	Regular	Formal
NOTES: With the roadway and adjacent powerline poles following the same right-of-way corridor, development in view appears organized and focused along this corridor.				
NOTES:				

OBSERVER POSITION	DISTANCE ZONES
☐ Looking up	Foreground: Intermittent views of the existing historic ball field and potentially of the proposed USGS field station through the dense ʻōhiʻa/koa forest
X Eye level	Middle ground: Not applicable due to dense forest screening views
☐ Looking down	Background: Not applicable due to dense forest screening views

View north northwest from Crater Rim Drive toward the historic ball field near KMC

View northwest from Crater Rim Drive toward the historic ball field near KMC

VIEW INVENTORY FORM

KOP Viewpoint: #7 – Kilauea Military Camp **Date**: 10/14/2021

Recorder: Kevin Rauhe **Time**:

INSTRUCTIONS. Describe the existing visual qualities of the view: its landscape character, visual elements, and spatial patterns. Circle terms that fit for each component and provide notes to explain key details.

LANDSCAPE CHARACTER

Describe the existing landscape's character. Consider the character type, diversity and the dominance and contribution of the existing landscape elements to the visual quality of the view. Circle as many terms as needed and add notes to help describe the view

Existing Character Type(s):	Natural	Pastoral	Agricultural	Rural	Suburban	Urban	Industrial

Notes**:** The setting adjacent to KMC is mostly natural-appearing (ʻōhiʻa and koa trees) with a large clearing containing KMC and supporting structures, evoking a natural developed character type.

Landscape Diversity	Uniform	Simple	Diverse	Complex

Notes: This natural, developed cultural landscape has a simple character focused on the cohesive blend of the older and modern buildings within KMC.

View type	Panorama	Enclosed	Focal	Feature	Framed	Canopy

Notes: The overall setting is a loosely, enclosed view type due to the dense forest surrounding KMC focusing views inward toward the camp.

What are the dominant materials and style of built elements? Near this photo point, simple wooden cabins with metal gable roofs and lava rock chimneys. The front office is constructed of similar materials with a country art deco style. Lava rock curbs along curving roadways.

Other factors:

Landscape Features

Refer to the Field Guide to identify the most prominent features in the landscape. Rate their dominance (**L** – present but inconspicuous, **M** – for evident, and **H** – for very conspicuous) and whether the contribution to landscape quality is negative (—) or positive (**+**).

Element	**Dominance**			**Contrib.**		**Element**	**Dominance**			**Contrib.**	
	L	**M**	**H**	**+**	**—**		**L**	**M**	**H**	**+**	**—**
Kilauea Military Camp cabins and office		■		■							
Roadway		■			■						
Signage	■				■						
Distribution powerline	■				■						

VISUAL ELEMENTS

Describe the existing view's visual elements of form, line, color and texture. If available, use a photograph to annotate the most prominent visual elements as shown on the field guide. Refer to the field guide for additional descriptive vocabulary.

FORM:	Blocky	Angular	Sloping	Circular	Rolling	Rounded	Flat	Pyramidal

Notes: The cabins and front office have a blocky, angular form; forest canopy creates a dense, rounded form surrounding KMC and parking lot.

LINE:	Vertical	Horizontal	Angular	Curving	Irregular	Broken	Sinuous	Undulating

Notes: Vertical, horizontal, and angular lines in the cabins, vertical lines in signage, curving line in lava rock curb and roadway.

COLOR:	Red	Green	White	Gray
	Orange	Yellow	Blue	Black
	Brown			

Notes: Range of greens in vegetation; gray roadway; cabins are made of light brown siding, dark brown wood trim, dark lava rock chimneys, and a brown roof.

TEXTURE:	Smooth	Rough	Medium	Fine	Coarse	Patchy	Stippled	Uniform

Notes: Forest canopy forms a uniform medium texture, whereas the cabins introduce rough textures due to their triangular, vertical form including the form of the chimneys and gable roof lines.

VIEW INVENTORY FORM

SPATIAL COMPOSITION COMPONENTS				
Describe the aspects of existing view's spatial composition and patterns (i.e., balance, scale, continuity). If available, use a photograph to annotate the existing focal points, visual balance and coherence of the view, as well as the other spatial pattern elements.				
BALANCE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: The KMC and parking areas have similar overstory vegetation as the adjacent forest, creating a balanced setting.				
SCALE:	Harmonious	Balanced	Discordant	Chaotic
NOTES: None of the built elements are taller than the trees, which helps brings the structures into balance with the natural setting.				
FOCAL POINTS:	None	Minimal	Moderate	Strong
NOTES: The curving driveways at the entrance of KMC focus attention inwardly toward the front row of cabins and the art deco style front office building. Along the edge of KMC, views include forest openings, a glimpse of the historic ball field, and partial views of the KMC maintenance area.				
CONTINUITY:	Unified/Connected	Interrupted	Fragmented	Chaotic
NOTES: The KMC and supporting facilities create a large opening in the forest, which interrupts the continuity of the surrounding forest setting. The varying architecture through the different eras of construction in the KMC partially interrupts the continuity of the KMC setting but their common materials provide important unifying elements.				
PATTERN:	Random	Organized	Regular	Formal
NOTES: The KMC is ordered and displays a cohesive blend of the older and modern buildings including ornamental landscape plantings and several curving entrance roads. The cabins are constructed in formal rows, further organizing the built elements within this setting.				
NOTES:				

OBSERVER POSITION	DISTANCE ZONES
☐ Looking up	Foreground: Views are limited due to the dense forest that surrounds the KMC
X Eye level	Middle ground: Not applicable due to dense forest screening views
☐ Looking down	Background: Not applicable due to dense forest screening views

VIEW INVENTORY FORM

View northwest from KMC entrance road toward the proposed USGS field station site

View north from KMC entrance road toward the existing historic cabins

VIEW INVENTORY FORM

View northeast from KMC entrance road toward the KMC front office building

Appendix B

Visual Simulations

KOP 1: Park Entrance Road

The before and after images below show how the view along Crater Rim Drive is anticipated to change under proposed conditions.

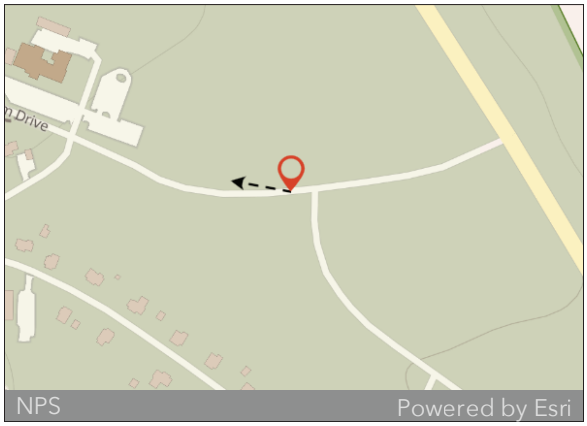


Photo location and view direction

Before

After

KOP 2: Kīlauea Visitor Center Entrance

The before and after images below show how the view along Crater Rim Drive is anticipated to change under proposed conditions.

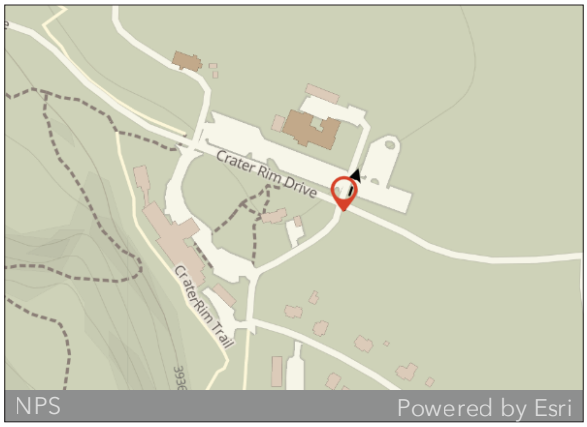


Photo location and view direction

Before

After

KOP 3: Crater Rim Trail

The before and after images below show how the view of Uēkahuna bluff is anticipated to change under proposed conditions.

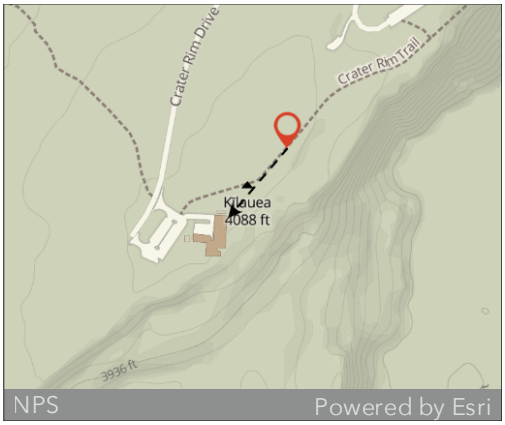


Photo location and view direction

Before

After

KOP 4: Volcano House Overlook

The before and after images below show how the view of Uēkahuna bluff is anticipated to change under proposed conditions.

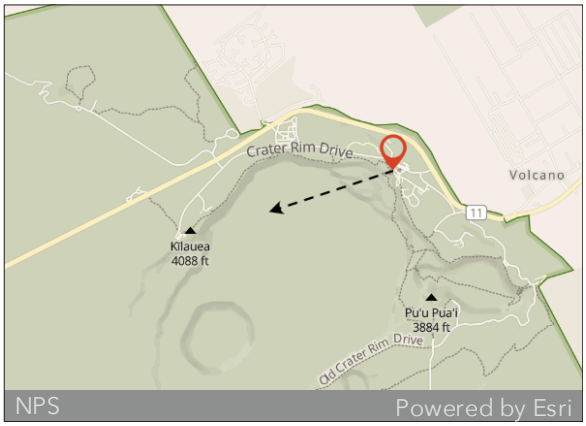


Photo location and view direction

Before

After

KOP 5: Crater Rim Drive west of Kīlauea Visitor Center

The before and after images below show how the view along Crater Rim Drive is anticipated to change under proposed conditions.

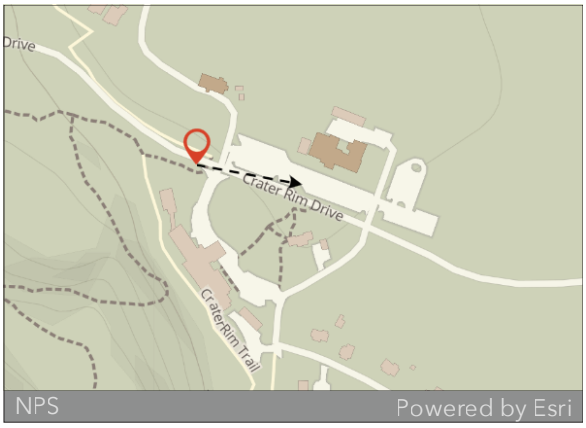


Photo location and view direction

Before

After

KOP 7: Kilauea Military Camp

The before and after images below show how the view is anticipated to change under proposed conditions.

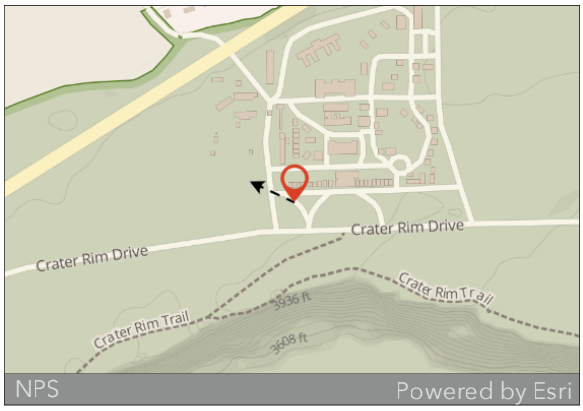


Photo location and view direction

Before

After

Appendix C

Visual Change Evaluation Forms

CONSENSUS VISUAL CHANGE RECORD

KOP/Viewpoint: #1: Park Entrance Road **Date**:2/8/2022

Evaluator: Kevin Rauhe **Time**:

INSTRUCTIONS. Then assess the details of the potential effects on scenic quality. The effect on scenic quality is influenced by three factors: **Compatibility** with existing landscape character, **contrast** of the project's visual elements with the existing landscape and the **compatibility** of the project with the spatial patterns and composition of the existing landscape. First, assess each component according and provide a brief explanation for your choice. Then use the scale to evaluate the effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

COMPATIBILITY WITH LANDSCAPE CHARACTER				
Assess the **compatibility** (e.g., fit, intactness) of the **project's character** with the existing landscape character. Consider if the project seems appropriate for the landscape character; if any existing landscape elements might be affected; and if the landscape character actually might change.				
Compatibility with Landscape Character	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The modifications proposed near the park entrance would begin to transform the natural character of the existing setting to a more transportation-focused setting with extra lanes, a traffic circle, and additional signage.				
Compatibility with Landscape Diversity	Not compatible	Somewhat compatible	Compatible	Little change
Notes**:** The Project would result in creating a clearing along a dense forested corridor, which would be incompatible with the existing repeating vegetation types and patterns. Landscape plantings in the center of the traffic circle would begin to repeat those patterns and help connect the adjacent forest settings.				
Project Design/Style	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The park does not currently have any traffic circles and large clearings for transportation infrastructure along Crater Rim Drive, therefore the Project would generally be incompatible with existing built features in the area. Note, there is a traffic circle and paved half circles at KMC.				
Project materials	Not at all compatible	Somewhat compatible	Very Compatible	Can't really tell
Notes: Planting materials, paving, signage, and other site features proposed would be compatible with materials present in other portions of the park.				
Would any existing landscape features be affected such as removed, concealed or damaged in some way? ☑ **Y** ☐ **N**				
If so – describe: Views toward the existing KVC and replacement visitor center could be opened, leading to potential views of these buildings and associated parking lots after passing the park entrance station.				
Other considerations:				

OVERALL COMPATIBILITY OF PROJECT WITH EXISTING LANDSCAPE CHARACTER										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST OF VISUAL ELEMENTS				
Assess the **contrast** of the **project's visual elements** (i.e., form, line, color and texture) with the existing view's visual elements. Consider how visually prominent the project will be through the introduction of, bold lines, forms & textures, intense colors, and contrasting motions or bright or flashing lights.				
Project form contrast:	None	Weak	Moderate	Strong
Describe: The rounded forms of the dense forest canopy would be split where the new entrance road to the KVC is proposed. The simple curving roadway would be replaced by a series of curving roads emanating from a round traffic circle.				
Project line contrast:	None	Weak	Moderate	Strong
Describe: ☐ Breaks horizon Additional vertical lines associated with signage would be added as well as more curving lines from the proposed road improvements.				
Project color contrast:	None	Weak	Moderate	Strong
Describe: ☐ unpleasant contrast/colors clash, ☐ pleasing color contrast The Project would mostly repeat colors present in the existing landscape with the addition of more gray asphalt and concrete in view associated with the proposed road improvements.				
Project texture contrast:	None	Weak	Moderate	Strong
Describe: The uniform, medium texture associated with the forest canopy on either side of the road would be split, resulting in coarser textures where the continuous form would be interrupted.				
Other considerations: ☑ motion, ☑ lights Motion along the additional roadways would further contrast with the existing setting, including at night when there is limited lighting in the park (i.e., vehicle headlights).				

OVERALL CONTRAST OF THE PROJECT'S VISUAL ELEMENTS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST WITH SPATIAL COMPOSITION AND PATTERNS

Assess the **contrast** of the project's spatial patterns such as continuity scale and balance with the existing view's spatial patterns. Consider the project's visual relation to changes to the visual balance, scale of other elements, location in the view and spatial relationship to focal points, continuity/coherence of the view, as well as the other spatial pattern elements,				
Visual Balance:	Supports or Enhances	No effect	Somewhat disrupts	Substantially disrupts
Notes: With the additional roads proposed by the Project, the simple balanced existing view would be partially disrupted by vegetation clearing along these proposed corridors and more transportation features in view (e.g., signs, striping, etc.). Using similar curbstone materials will help the visual balance.				
Scale (size):	Substantially smaller	Somewhat smaller	Comparable	Somewhat larger	Substantially larger
Notes: With the addition of the traffic circle, additional roads, and other improvements, the Project would be out of scale with the existing setting and would appear somewhat larger than those elements currently in view.				
Focal points:	No effect	Somewhat distracts	Creates new focal point	Creates new dominant FP
Notes: The addition of a new route to directly access the existing and proposed KVC, with its corridor of cleared vegetation, would create a new focal point from this location adjacent to the park entrance.				
Continuity:	no disruption	Noticeable but minor	Substantial	
Notes: The continuity of this landscape would be interrupted as an additional corridor would be cut through the forest compared to the simple, continuous roadway present in the existing landscape.				
Pattern:	Enhances	No effect	Somewhat disrupts	Substantially disrupts
Notes: fits within existing patterns	somewhat consistent with patterns	completely inconsistent with patterns		
Location in view:	Periphery/Edge Left	Off center – left	Center	Off center right	Periphery/edge Right
Notes: The traffic circle would be on left side with the new roadway and potential views of the KVC and parking lot off center right.				
Other considerations:				

OVERALL COMPATIBILITY OF PROJECT WITH SPATIAL COMPOSITION AND PATTERNS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

OVERALL EFFECT. Considering the project's visual effects described above, assess the visual effect to scenic quality as a whole. It is not expected that this is simply the sum of the above ratings, but will require thoughtful consideration and judgement. Use this scale to evaluate the overall effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

OVERALL EFFECT ON SCENIC QUALITY																			
Adverse:	**High**			**Moderate**			**Low**			**No Effect**	**Low**			**Moderate**			**High**			**: Beneficial**
	+	**…**	**–**	**+**	**…**	**–**	**+**	**…**	**–**		**+**	**…**	**–**	**+**	**…**	**–**	**+**	**…**	**–**	

VARIABLE FACTORS	
Lighting	Not applicable (N/A)
Atmospheric conditions	N/A
Distance/ backdrop	The proposed changes at the park entrance and proposed KVC would occur within the foreground distance zone (0–0.5 mile).
Viewing position	Views would occur from a level viewing position.
Backdrop	By maintaining existing vegetation wherever possible, Project elements would appear backdropped, limiting their extent of visual dominance on these views.
View limiting factors – topography, vegetation etc.	Long-term vegetation management would facilitate maintaining a natural forest setting as well as providing opportunities to screen views of the replacement visitor center and other project elements.
Other	N/A

CONSENSUS VISUAL CHANGE RECORD

KOP/Viewpoint: #2: Kīlauea Visitor Center Entrance **Date**:2/8/2022

Evaluator: Kevin Rauhe **Time**:

INSTRUCTIONS. Then assess the details of the potential effects on scenic quality. The effect on scenic quality is influenced by three factors: **Compatibility** with existing landscape character, **contrast** of the project's visual elements with the existing landscape and the **compatibility** of the project with the spatial patterns and composition of the existing landscape. First, assess each component according and provide a brief explanation for your choice. Then use the scale to evaluate the effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

COMPATIBILITY WITH LANDSCAPE CHARACTER				
Assess the **compatibility** (e.g., fit, intactness) of the **project's character** with the existing landscape character. Consider if the project seems appropriate for the landscape character; if any existing landscape elements might be affected; and if the landscape character actually might change.				
Compatibility with Landscape Character	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The replacement visitor center would generally be compatible with the natural developed character type found in the existing setting except the area viewed as modified would be expanded to include the new building and parking lot.				
Compatibility with Landscape Diversity	Not compatible	Somewhat compatible	Compatible	Little change
Notes**:** The replacement visitor center would minimally add to landscape diversity as the architectural style is similar to the existing KVC. Even though the project would repeat the simple landscape diversity current present in this location (e.g., visitor center and parking lot), it would expand the area viewed as modified within the setting.				
Project Design/Style	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** Since the replacement visitor center mostly mimics the design of the existing KVC, the project design is very compatible.				
Project materials	Not at all compatible	Somewhat compatible	Very Compatible	Can't really tell
Notes: The lava rock and fiber cement siding would be very compatible with the existing KVC. The solar panels are not consistent with the existing KVC and introduce features somewhat incompatible with the existing landscape setting, although there are solar panels on the KVC restrooms and the garage building behind KVC. The selected roof color is similar to those two adjacent buildings, making the replacement visitor center more compatible with those existing structures.				
Would any existing landscape features be affected such as removed, concealed or damaged in some way? ☐ **Y** ☑ **N**				
If so – describe:				
Other considerations:				

OVERALL COMPATIBILITY OF PROJECT WITH EXISTING LANDSCAPE CHARACTER										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST OF VISUAL ELEMENTS				
Assess the **contrast** of the **project's visual elements** (i.e., form, line, color and texture) with the existing view's visual elements. Consider how visually prominent the project will be through the introduction of, bold lines, forms & textures, intense colors, and contrasting motions or bright or flashing lights.				
Project form contrast:	None	Weak	Moderate	Strong
Describe: The blocky form of the replacement visitor center would mimic the existing KVC but would introduce another large building into view.				
Project line contrast:	None	Weak	Moderate	Strong
Describe: ☐ Breaks horizon The lines introduced by the solar panels would attract additional attention as they are more visible than the others found in the existing KVC area.				
Project color contrast:	None	Weak	Moderate	Strong
Describe: ☐ unpleasant contrast/colors clash, ☐ pleasing color contrast The replacement visitor center would generally mimic colors found in the existing KVC.				
Project texture contrast:	None	Weak	Moderate	Strong
Describe: The coarse textures introduced by the project are similar to the existing KVC including pyramidal roof forms.				
Other considerations: ☐ motion, ☑ lights Proposed lighting for the replacement visitor center and parking area would be consistent with the lighting currently present at the existing KVC.				

OVERALL CONTRAST OF THE PROJECT'S VISUAL ELEMENTS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST WITH SPATIAL COMPOSITION AND PATTERNS					
Assess the **contrast** of the project's spatial patterns such as continuity scale and balance with the existing view's spatial patterns. Consider the project's visual relation to changes to the visual balance, scale of other elements, location in the view and spatial relationship to focal points, continuity/coherence of the view, as well as the other spatial pattern elements,					
Visual Balance:	Supports or Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: The balance of the landscape would be disrupted through the addition of the replacement visitor center, which would begin to tilt the balance toward recreation development instead of a balanced recreation/natural composition.					
Scale (size):	Substantially smaller	Somewhat smaller	Comparable	Somewhat larger	Substantially larger
Notes: The expansion of the KVC area, as a result of the project, would expand the area viewed as modified from this location. By keeping the structure height below the tree tops and maintaining vegetation screening, the apparent scale of the project would be reduced.					
Focal points:	No effect	Somewhat distracts	Creates new focal point	Creates new dominant FP	
Notes: The addition of the replacement visitor center would add a second focal point while entering the parking lot. These features would be co-dominant in the setting.					
Continuity:	no disruption	Noticeable but minor	Substantial		
Notes: Since about half of the project would occur within already cleared areas, the general continuity of the surrounding forest would be partially interrupted with the areas of removed forest becoming noticeable.					
Pattern:	Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: fits within existing patterns	somewhat consistent with patterns	completely inconsistent with patterns			
Location in view:	Periphery/Edge Left	Off center – left	Center	Off center right	Periphery/edge Right
Notes: The project would be located on the right edge of the view with the adjacent existing KVC located on the left edge of the view.					
Other considerations: Spatially, the design is very similar to how circulation currently works and the location of the building is line with the other building.					

OVERALL COMPATIBILITY OF PROJECT WITH SPATIAL COMPOSITION AND PATTERNS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

OVERALL EFFECT. Considering the project's visual effects described above, assess the visual effect to scenic quality as a whole. It is not expected that this is simply the sum of the above ratings, but will require thoughtful consideration and judgement. Use this scale to evaluate the overall effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

OVERALL EFFECT ON SCENIC QUALITY																			
Adverse:	**High**			**Moderate**			**Low**			**No Effect**	**Low**			**Moderate**			**High**			**: Beneficial**
	+	…	–	+	…	–	+	…	–		+	…	–	+	…	–	+	…	–	

VARIABLE FACTORS	
Lighting	N/A
Atmospheric conditions	N/A
Distance/ backdrop	The replacement visitor center would be visible within the foreground distance zone (0–0.5 mile).
Viewing position	Views would occur from a level viewing position.
Backdrop	By maintaining existing vegetation behind the replacement visitor center, it appears backdropped against the forest setting.
View limiting factors – topography, vegetation etc.	Maintaining existing vegetation, as well as planting additional plants between Crater Rim Drive and the replacement visitor center, would reduce the physical presence of the building by partially screening views similar to the existing KVC. This could include additional plantings to screen views of the solar panels proposed on the roof of the replacement visitor center.
Other	N/A

CONSENSUS VISUAL CHANGE RECORD

KOP/Viewpoint: #3: Crater Rim Trail **Date**:2/8/2022

Evaluator: Kevin Rauhe **Time**:

INSTRUCTIONS. Then assess the details of the potential effects on scenic quality. The effect on scenic quality is influenced by three factors: **Compatibility** with existing landscape character, **contrast** of the project's visual elements with the existing landscape and the **compatibility** of the project with the spatial patterns and composition of the existing landscape. First, assess each component according and provide a brief explanation for your choice. Then use the scale to evaluate the effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

COMPATIBILITY WITH LANDSCAPE CHARACTER				
Assess the **compatibility** (e.g., fit, intactness) of the **project's character** with the existing landscape character. Consider if the project seems appropriate for the landscape character; if any existing landscape elements might be affected; and if the landscape character actually might change.				
Compatibility with Landscape Character	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The removal of the HVO, Geochemistry Annex building, and Jaggar Museum would result in a more natural-appearing landscape. The redesigned berm would open up views of the existing restroom building, but its design is very compatible with the natural setting. Native plant revegetation will also occur and topography will be restored to how it looked prior to the buildings being constructed.				
Compatibility with Landscape Diversity	Not compatible	Somewhat compatible	Compatible	Little change
Notes**:** Through removal of three buildings on the bluff, the landscape would appear less diverse. The existing and proposed features would appear grouped, away from the edge of Kīlauea Crater.				
Project Design/Style	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** Removing the buildings restores much of the natural character of the area. The design of the replacement water tank would be incompatible with the natural setting but would be screened by the redesigned berm. The existing restroom would be visible, but its architectural style matches the design aesthetic of the park.				
Project materials	Not at all compatible	Somewhat compatible	Very Compatible	Can't really tell
Notes: Through the removal of the HVO, Geochemistry Annex, and Jaggar Museum, incompatible materials would be removed within this view. If visible, the replacement water tank, with its metal exterior, would appear incompatible with the natural setting mostly composed of rock and vegetation (wood).				
Would any existing landscape features be affected such as removed, concealed or damaged in some way? ☐ **Y** ☑ **N**				
If so – describe:				
Other considerations: Painting the water tank a color that blends with the existing setting and increasing vegetation at the end of the berm would increase landscape compatibility of the Project. In addition, next time HVO staff paints the radio tower, they should use a color similar to the water tank (the replacement tank color, not existing color).				

OVERALL COMPATIBILITY OF PROJECT WITH EXISTING LANDSCAPE CHARACTER										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST OF VISUAL ELEMENTS				
Assess the **contrast** of the **project's visual elements** (i.e., form, line, color and texture) with the existing view's visual elements. Consider how visually prominent the project will be through the introduction of, bold lines, forms & textures, intense colors, and contrasting motions or bright or flashing lights.				
Project form contrast:	None	Weak	Moderate	Strong
Describe: The existing, blocky structures would be mostly removed by the Project, reducing contrast. The cylindrical form of the water tank would be screened from view by the redesigned berm with a portion of the blocky, existing restroom building being visible.				
Project line contrast:	None	Weak	Moderate	Strong
Describe: ☐ Breaks horizon The angular lines in the existing restroom building would repeat those angular lines in the existing landscape.				
Project color contrast:	None	Weak	Moderate	Strong
Describe: ☐ unpleasant contrast/colors clash, ☐ pleasing color contrast The colors of the existing restroom building blend with the natural setting and in other locations, where the replacement water tank could be visible, it will be painted a darker, natural color to bring it into balance with the landscape.				
Project texture contrast:	None	Weak	Moderate	Strong
Describe: Removal of the HVO, Geochemistry Annex, and Jaggar Museum would greatly reduce the extent of incompatible coarse-textured elements in view, with only the existing radio tower and portion of the existing restroom building being visible from this location.				

Other considerations: ☐ motion, ☑ lights Effect of diffuse lighting along proposed overlooks would be minor considering other lighting sources in the area (e.g., vehicle headlights, flashlights, and at the existing restroom building). Lights currently are found in parking lot and along the trail to the overlook.

OVERALL CONTRAST OF THE PROJECT'S VISUAL ELEMENTS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST WITH SPATIAL COMPOSITION AND PATTERNS					
Assess the **contrast** of the project's spatial patterns such as continuity scale and balance with the existing view's spatial patterns. Consider the project's visual relation to changes to the visual balance, scale of other elements, location in the view and spatial relationship to focal points, continuity/coherence of the view, as well as the other spatial pattern elements**,**					
Visual Balance:	Supports or Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: The Project would bring the setting more into balance through the removal of the HVO, Geochemistry Annex, and Jaggar Museum, which created a discordant landscape. Through redesign of the existing berm, the replacement water tank would be screened from view.					
Scale (size):	Substantially smaller	Somewhat smaller	Comparable	Somewhat larger	Substantially larger
Notes: The removal of structures, especially the two-story HVO, would bring development on the bluff more in scale with the natural setting.					
Focal points:	No effect	Somewhat distracts	Creates new focal point	Creates new dominant FP	
Notes: While the existing restroom building may be visible from this location, the removal of three dominant structures on the bluff would allow the landscape to be the main focal point in the setting.					
Continuity:	no disruption	Noticeable but minor	Substantial		
Notes: The removal of structures on the bluff would help unify the landscape, resulting in increased continuity that was interrupted by the large structures in view. The design of existing restroom building is more in tune with the natural setting.					
Pattern:	Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: fits within existing patterns	somewhat consistent with patterns	completely inconsistent with patterns			
Location in view:	Periphery/Edge Left	Off center – left	Center	Off center right	Periphery/edge Right
Notes: The removal of structures would occur in the center of the view.					
Other considerations:					

OVERALL COMPATIBILITY OF PROJECT WITH SPATIAL COMPOSITION AND PATTERNS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

OVERALL EFFECT. Considering the project's visual effects described above, assess the visual effect to scenic quality as a whole. It is not expected that this is simply the sum of the above ratings, but will require thoughtful consideration and judgement. Use this scale to evaluate the overall effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

OVERALL EFFECT ON SCENIC QUALITY																			
Adverse:	**High**			**Moderate**			**Low**			**No Effect**	**Low**			**Moderate**			**High**			**: Beneficial**
	+	···	–	+	···	–	+	···	–		+	···	–	+	···	–	+	···	–	

VARIABLE FACTORS	
Lighting	N/A
Atmospheric conditions	Views may be partially impeded by rain and clouds during heavy storms or other weather events.
Distance/ backdrop	The proposed changes on Uēkahuna Bluff would occur within the foreground distance zone (0–0.5 mile).
Viewing position	The slightly inferior (looking up) view from this location would limit visibility of the proposed overlooks as any surface disturbance would be obstructed from view.
Backdrop	Removal of the HVO, Geochemistry Annex, and Jaggar Museum would reduce the extent of skylined structures in view as the existing restroom building would be backdropped by existing vegetation.
View limiting factors – topography, vegetation etc.	The existing berm would be shortened to fill in the foundations of structures on the bluff planned to be removed as a part of this Project, but would be kept enough to screen the water tank. The replacement water tank would be visible from other locations, but if colored appropriately, will not attract attention. To further reduce impacts on scenic quality, revegetation of ʻōhiʻa trees or shrubs along the top and edge of the berm would screen views of the water tank from other locations on the bluff.
Other	N/A

CONSENSUS VISUAL CHANGE RECORD

KOP/Viewpoint: #4: Volcano House Overlook **Date**: 2/8/2022

Evaluator: Kevin Rauhe **Time**:

INSTRUCTIONS. Then assess the details of the potential effects on scenic quality. The effect on scenic quality is influenced by three factors: **Compatibility** with existing landscape character, **contrast** of the project's visual elements with the existing landscape and the **compatibility** of the project with the spatial patterns and composition of the existing landscape. First, assess each component according and provide a brief explanation for your choice. Then use the scale to evaluate the effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

COMPATIBILITY WITH LANDSCAPE CHARACTER				
Assess the **compatibility** (e.g., fit, intactness) of the **project's character** with the existing landscape character. Consider if the project seems appropriate for the landscape character; if any existing landscape elements might be affected; and if the landscape character actually might change.				
Compatibility with Landscape Character	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The removal of existing structures on Uēkahuna Bluff by the Project would improve the integrity of the area's natural character through minimizing visibility of human-made modifications across Kīlauea Crater.				
Compatibility with Landscape Diversity	Not compatible	Somewhat compatible	Compatible	Little change
Notes**:** Similarly, the removal of the structures would eliminate incompatible geometric features on the bluff that conflicted with views toward Kīlauea Crater and Mauna Loa.				
Project Design/Style	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** Through design of the project to blend with the existing terrain and the removal the two-story HVO, the project design would be compatible with the existing landscape character.				
Project materials	Not at all compatible	Somewhat compatible	Very Compatible	Can't really tell
Notes: The use of lava rock and wood to construct the overlook on the bluff would be compatible with the existing landscape character as it would repeat the natural materials present in the setting.				
Would any existing landscape features be affected such as removed, concealed or damaged in some way? ☐ **Y** ☑ **N**				
If so – describe:				
Other considerations:				

OVERALL COMPATIBILITY OF PROJECT WITH EXISTING LANDSCAPE CHARACTER										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST OF VISUAL ELEMENTS				
Assess the **contrast** of the **project's visual elements** (i.e., form, line, color and texture) with the existing view's visual elements. Consider how visually prominent the project will be through the introduction of, bold lines, forms & textures, intense colors, and contrasting motions or bright or flashing lights.				
Project form contrast:	None	Weak	Moderate	Strong
Describe: The project would remove structures where the blocky form was incompatible with the existing setting. The low-lying form of the proposed overlook would blend with the existing setting.				
Project line contrast:	None	Weak	Moderate	Strong
Describe: ☐ Breaks horizon The project would include removing structures on the bluff that had introduced incompatible lines in the landscape. The horizontal lines associated with the proposed overlook would blend with the existing setting.				
Project color contrast:	None	Weak	Moderate	Strong
Describe: ☐ unpleasant contrast/colors clash, ☐ pleasing color contrast The project would remove structures that had a created weak color contrast with the existing setting from this distance. The natural materials proposed for the overlook would blend with the existing setting.				
Project texture contrast:	None	Weak	Moderate	Strong
Describe: The project would remove structures that had introduced coarse-textured structures on the bluff. The texture of the proposed overlook would blend with the existing setting it they would follow existing contours and not include vertical elements.				
Other considerations: ☐ motion, ☑ lights Effect of diffuse lighting along proposed overlook would be minor considering other lighting sources in the area (e.g., vehicle headlights, flashlights, and lighting around the Volcano House) and lights would be amber and downward directed, so unlikely to be very visible from this location.				
OVERALL CONTRAST OF THE PROJECT'S VISUAL ELEMENTS				

Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST WITH SPATIAL COMPOSITION AND PATTERNS					
Assess the **contrast** of the project's spatial patterns such as continuity scale and balance with the existing view's spatial patterns. Consider the project's visual relation to changes to the visual balance, scale of other elements, location in the view and spatial relationship to focal points, continuity/coherence of the view, as well as the other spatial pattern elements**,**					
Visual Balance:	Supports or Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: By removing the structures on the bluff and designing the project to blend with the setting, the existing harmonious balanced landscape would be maintained and improved.					
Scale (size):	Substantially smaller	Somewhat smaller	Comparable	Somewhat larger	Substantially larger
Notes: Since the proposed facilities would be smaller in footprint and in height than the existing structures, the project would reduce the extent of landscape modifications in the view, creating a more harmonious setting.					
Focal points:	No effect	Somewhat distracts	Creates new focal point	Creates new dominant FP	
Notes: By removing one of the focal points in the landscape (visible structures on the Uēkahuna Bluff), views will now focus on the two natural focal points in the landscape (Kīlauea Crater and Mauna Loa). A positive effect—people would view the whole natural landscape.					
Continuity:	no disruption	Noticeable but minor	Substantial		
Notes: The natural continuity of the landscape would be improved by the removal of structures and through thoughtful design of the proposed overlook.					
Pattern:	Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: fits within existing patterns	somewhat consistent with patterns	completely inconsistent with patterns			
Location in view:	Periphery/Edge Left	Off center – left	Center	Off center right	Periphery/edge Right
Notes: Both the proposed overlook and removed structures are located on Uēkahuna Bluff, a high point, which attracts additional attention in the viewshed. By limiting disturbance at this focal point, the overall setting will appear more natural.					
Other considerations:					

OVERALL COMPATIBILITY OF PROJECT WITH SPATIAL COMPOSITION AND PATTERNS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

OVERALL EFFECT. Considering the project's visual effects described above, assess the visual effect to scenic quality as a whole. It is not expected that this is simply the sum of the above ratings, but will require thoughtful consideration and judgement. Use this scale to evaluate the overall effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

OVERALL EFFECT ON SCENIC QUALITY																			
Adverse:	**High**			**Moderate**			**Low**			**No Effect**	**Low**			**Moderate**			**High**			**: Beneficial**
	+	**…**	**–**	**+**	**…**	**–**	**+**	**…**	**–**		**+**	**…**	**–**	**+**	**…**	**–**	**+**	**…**	**–**	

VARIABLE FACTORS	
Lighting	N/A
Atmospheric conditions	Views across the caldera are often impeded by rain and clouds, which limit visibility of Uēkahuna Bluff. When clouds are located between the bluff and Mauna Loa, the existing radio tower is more visually apparent as it appears skylined without the complex backdropping of Mauna Loa to allow its lattice design to blend in with the natural setting.
Distance/ backdrop	Views of Uēkahuna Bluff occur from approximately 2 miles away (middle ground) backdropped against the distant Mauna Loa.
Viewing position	The level to slightly inferior (looking up) view from this location would further limit visibility of the proposed overlook as any surface disturbance would be obstructed from view.
Backdrop	The removed structures and proposed overlooks are backdropped by the massive form of Mauna Loa.
View limiting factors – topography, vegetation etc.	N/A
Other	Project will restore the natural view, and the summit is culturally significant, so returning to a more natural state is highly beneficial to the cultural landscape.

CONSENSUS VISUAL CHANGE RECORD

KOP/Viewpoint: #5 – Crater Rim Drive West of Kīlauea Visitor Center **Date**:2/8/2022

Evaluator: Kevin Rauhe **Time**:

INSTRUCTIONS. Then assess the details of the potential effects on scenic quality. The effect on scenic quality is influenced by three factors: **Compatibility** with existing landscape character, **contrast** of the project's visual elements with the existing landscape and the **compatibility** of the project with the spatial patterns and composition of the existing landscape. First, assess each component according and provide a brief explanation for your choice. Then use the scale to evaluate the effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

COMPATIBILITY WITH LANDSCAPE CHARACTER				
Assess the **compatibility** (e.g., fit, intactness) of the **project's character** with the existing landscape character. Consider if the project seems appropriate for the landscape character; if any existing landscape elements might be affected; and if the landscape character actually might change.				
Compatibility with Landscape Character	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The portion of the replacement visitor center visible from this location mimics the existing KVC, maintaining the natural developed character type of this area.				
Compatibility with Landscape Diversity	Not compatible	Somewhat compatible	Compatible	Little change
Notes**:** The replacement visitor center would minimally add to landscape diversity viewed from this location as the architectural style is similar to the existing KVC and would not introduce incompatible features.				
Project Design/Style	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The sloping roofline of the replacement visitor center mimics the roof design of the existing KVC, which is the main proposed component visible from this area.				
Project materials	Not at all compatible	Somewhat compatible	Very Compatible	Can't really tell
Notes: The color of the proposed roof is similar to the existing KVC, with its natural color blending with the existing setting.				
Would any existing landscape features be affected such as removed, concealed or damaged in some way? ☐ **Y** ☑ **N**				
If so – describe:				
Other considerations:				

OVERALL COMPATIBILITY OF PROJECT WITH EXISTING LANDSCAPE CHARACTER										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST OF VISUAL ELEMENTS				
Assess the **contrast** of the **project's visual elements** (i.e., form, line, color and texture) with the existing view's visual elements. Consider how visually prominent the project will be through the introduction of, bold lines, forms & textures, intense colors, and contrasting motions or bright or flashing lights.				
Project form contrast:	None	Weak	Moderate	Strong
Describe: The blocky form of the replacement visitor center would be similar to the existing KVC and other structures visible from this location. The geometric form of the solar panels may be apparent but does not attract attention from this location.				
Project line contrast:	None	Weak	Moderate	Strong
Describe: ☐ Breaks horizon The angular rooflines mimic those found in the existing KVC and other structures visible from this location.				
Project color contrast:	None	Weak	Moderate	Strong
Describe: ☐ unpleasant contrast/colors clash, ☐ pleasing color contrast The roof color is similar to the existing KVC with its natural hue matching adjacent structures.				
Project texture contrast:	None	Weak	Moderate	Strong
Describe: The rough textures introduced by the existing KVC are repeated in the replacement visitor center except the new structure would not include additional vertical protrusions (e.g., chimneys).				
Other considerations: ☐ motion, ☑ lights Proposed lighting for the replacement visitor center and parking area would be consistent with the lighting currently present at the existing KVC.				

OVERALL CONTRAST OF THE PROJECT'S VISUAL ELEMENTS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST WITH SPATIAL COMPOSITION AND PATTERNS

Assess the **contrast** of the project's spatial patterns such as continuity scale and balance with the existing view's spatial patterns. Consider the project's visual relation to changes to the visual balance, scale of other elements, location in the view and spatial relationship to focal points, continuity/coherence of the view, as well as the other spatial pattern elements,					
Visual Balance:	Supports or Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: The introduction of the replacement visitor center would have minimal effect on the balance of this landscape, as the building would blend with the existing forest and existing KVC.					
Scale (size):	Substantially smaller	Somewhat smaller	Comparable	Somewhat larger	Substantially larger
Notes: Since the replacement visitor center would be shorter than the existing trees and is partially screened from view, the scale of the project is comparable to the existing setting and structures.					
Focal points:	No effect	Somewhat distracts	Creates new focal point	Creates new dominant FP	
Notes: The addition of the replacement visitor center would extend the focal point associated with the existing KVC but would minimally distract views from this location.					
Continuity:	no disruption	Noticeable but minor	Substantial		
Notes: Since the replacement visitor center would be partially screened from view, it would minimally affect the landscape's continuity. The existing clearings would be expanded to contain the expanded parking lot, but this would not be visible from this location.					
Pattern:	Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: fits within existing patterns	somewhat consistent with patterns	completely inconsistent with patterns			
Location in view:	Periphery/Edge Left	Off center – left	Center	Off center right	Periphery/edge Right
Notes: The project would be located in the center part of the view adjacent to the existing KVC.					
Other considerations:					

OVERALL COMPATIBILITY OF PROJECT WITH SPATIAL COMPOSITION AND PATTERNS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

OVERALL EFFECT. Considering the project's visual effects described above, assess the visual effect to scenic quality as a whole. It is not expected that this is simply the sum of the above ratings, but will require thoughtful consideration and judgement. Use this scale to evaluate the overall effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

OVERALL EFFECT ON SCENIC QUALITY																			
Adverse:	**High**			**Moderate**			**Low**			**No Effect**	**Low**			**Moderate**			**High**			**: Beneficial**
	+	···	–	+	···	–	+	···	–		+	···	–	+	···	–	+	···	–	

VARIABLE FACTORS	
Lighting	There could be more lighting evident, but the lights will be amber and downward directed, so should not attract much attention.
Atmospheric conditions	N/A
Distance/ backdrop	The replacement visitor center would be visible within the foreground distance zone (0–0.5 mile).
Viewing position	Views would occur from a level viewing position.
Backdrop	By maintaining existing vegetation behind the replacement visitor center, it appears backdropped against the forest setting.
View limiting factors – topography, vegetation etc.	The parking area between the viewpoint and the replacement visitor center is often very busy (as shown in the simulation), therefore views of the replacement visitor center would typically be partially screened from view by vehicles.
Other	N/A

CONSENSUS VISUAL CHANGE RECORD

KOP/Viewpoint: #6 – Crater Rim Drive toward KMC and historic ball field **Date**: 2/8/2022

Evaluator: Kevin Rauhe **Time**:

INSTRUCTIONS. Then assess the details of the potential effects on scenic quality. The effect on scenic quality is influenced by three factors: **Compatibility** with existing landscape character, **contrast** of the project's visual elements with the existing landscape and the **compatibility** of the project with the spatial patterns and composition of the existing landscape. First, assess each component according and provide a brief explanation for your choice. Then use the scale to evaluate the effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

COMPATIBILITY WITH LANDSCAPE CHARACTER				
Assess the **compatibility** (e.g., fit, intactness) of the **project's character** with the existing landscape character. Consider if the project seems appropriate for the landscape character; if any existing landscape elements might be affected; and if the landscape character actually might change.				
Compatibility with Landscape Character	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** Since the dense forest would screen the proposed USGS field station from view, the project would appear compatible with the existing landscape character. Two simulation overlays, from different locations, were completed, confirming the project would not be visible in the larger openings along the roadway.				
Compatibility with Landscape Diversity	Not compatible	Somewhat compatible	Compatible	Little change
Notes**:** The uniform landscape diversity, defined by the dense forest and roadway, would not be impacted by the project since the proposed USGS field station would be screened from view.				
Project Design/Style	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The dense forest would screen views of the proposed USGS field station and its design.				
Project materials	Not at all compatible	Somewhat compatible	Very Compatible	Can't really tell
Notes: If there are small gaps within the dense forest canopy along the road, the dark colors proposed for the USGS field station would not attract attention from the roadway.				
Would any existing landscape features be affected such as removed, concealed or damaged in some way? ☐ **Y** ☑ **N**				
If so – describe:				
Other considerations:				

OVERALL COMPATIBILITY OF PROJECT WITH EXISTING LANDSCAPE CHARACTER										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST OF VISUAL ELEMENTS				
Assess the **contrast** of the **project's visual elements** (i.e., form, line, color and texture) with the existing view's visual elements. Consider how visually prominent the project will be through the introduction of, bold lines, forms & textures, intense colors, and contrasting motions or bright or flashing lights.				
Project form contrast:	None	Weak	Moderate	Strong
Describe: The form of the proposed USGS field station would not be visible from this location.				
Project line contrast:	None	Weak	Moderate	Strong
Describe: ☐ Breaks horizon Since the proposed USGS field station would be screened from view, lines associated with the building would not be visible.				
Project color contrast:	None	Weak	Moderate	Strong
Describe: ☐ unpleasant contrast/colors clash, ☐ pleasing color contrast The dark colors proposed for the USGS field station would blend with the forest setting even if there are small gaps in the forest where glimpses of a piece of the station may occur.				
Project texture contrast:	None	Weak	Moderate	Strong
Describe: Since the proposed USGS field station would not be visible from this location, textures would not be apparent.				
Other considerations: ☐ motion, ☐ lights				

OVERALL CONTRAST OF THE PROJECT'S VISUAL ELEMENTS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST WITH SPATIAL COMPOSITION AND PATTERNS

Assess the **contrast** of the project's spatial patterns such as continuity scale and balance with the existing view's spatial patterns. Consider the project's visual relation to changes to the visual balance, scale of other elements, location in the view and spatial relationship to focal points, continuity/coherence of the view, as well as the other spatial pattern elements,					
Visual Balance:	Supports or Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: The project would not modify the landscape's visual balance since the USGS field station would be screened from view.					
Scale (size):	Substantially smaller	Somewhat smaller	Comparable	Somewhat larger	Substantially larger
Notes: With views of the proposed USGS field station screened by vegetation, the scale of the project would be comparable to the existing setting.					
Focal points:	No effect	Somewhat distracts	Creates new focal point	Creates new dominant FP	
Notes: Since the proposed USGS field station would be screened by vegetation, it would not modify existing focal points in the landscape.					
Continuity:	no disruption	Noticeable but minor	Substantial		
Notes: The continuity of the landscape would remain intact as the proposed USGS field station would not be visible.					
Pattern:	Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: fits within existing patterns somewhat consistent with patterns completely inconsistent with patterns					
Location in view:	Periphery/Edge Left	Off center – left	Center	Off center right	Periphery/edge Right
Notes: If visible, the project would appear off center—left as viewed from a driver's perspective.					
Other considerations:					

OVERALL COMPATIBILITY OF PROJECT WITH SPATIAL COMPOSITION AND PATTERNS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

OVERALL EFFECT. Considering the project's visual effects described above, assess the visual effect to scenic quality as a whole. It is not expected that this is simply the sum of the above ratings, but will require thoughtful consideration and judgement. Use this scale to evaluate the overall effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

OVERALL EFFECT ON SCENIC QUALITY																			
Adverse:	**High**			**Moderate**			**Low**			**No Effect**	**Low**			**Moderate**			**High**			**: Beneficial**
	+	···	–	+	···	–	+	···	–		+	···	–	+	···	–	+	···	–	

VARIABLE FACTORS	
Lighting	N/A
Atmospheric conditions	N/A
Distance/ backdrop	The proposed USGS field station would be located within the foreground distance zone (0–0.5 mile).
Viewing position	Views would occur from a level viewing position.
Backdrop	N/A
View limiting factors – topography, vegetation etc.	The dense forest adjacent to Crater Rim Drive would screen views of the proposed USGS field station. Maintaining this level of vegetation screening over the long term is essential to avoid impacts in the future from this location.
Other	N/A

CONSENSUS VISUAL CHANGE RECORD

KOP/Viewpoint: #7 – Kilauea Military Camp **Date**: 2/8/2022

Evaluator: Kevin Rauhe **Time**:

INSTRUCTIONS. Then assess the details of the potential effects on scenic quality. The effect on scenic quality is influenced by three factors: **Compatibility** with existing landscape character, **contrast** of the project's visual elements with the existing landscape and the **compatibility** of the project with the spatial patterns and composition of the existing landscape. First, assess each component according and provide a brief explanation for your choice. Then use the scale to evaluate the effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

COMPATIBILITY WITH LANDSCAPE CHARACTER				
Assess the **compatibility** (e.g., fit, intactness) of the **project's character** with the existing landscape character. Consider if the project seems appropriate for the landscape character; if any existing landscape elements might be affected; and if the landscape character actually might change.				
Compatibility with Landscape Character	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The proposed field station would generally be compatible with the existing setting as there are several eras of existing buildings, including a large maintenance facility, adjacent to the proposed field station. The more modern design of the field station would be somewhat compatible with the existing structures and setting.				
Compatibility with Landscape Diversity	Not compatible	Somewhat compatible	Compatible	Little change
Notes**:** By not removing additional vegetation in front of, behind, and adjacent to the field station, the diversity of landscape features would be mostly maintained. The introduction of the split-gable roof of the field station would introduce features not currently in the landscape but that are found on other buildings in the park.				
Project Design/Style	Not at all compatible	Somewhat compatible	Very compatible	Can't really tell
Notes**:** The modern design of the field station would be incompatible with the historic KMC but since there is an existing maintenance facility with a large warehouse in view (partially screened), and the field station would be partially screened from view, its effect would be reduced to being somewhat compatible with the setting. The low, lava rock wall would be similar to other lava rock walls and columns in the park.				
Project materials	Not at all compatible	Somewhat compatible	Very Compatible	Can't really tell
Notes: The use of fiber cement siding, with texture to mimic wood, will be painted brown to match other buildings in HAVO. The proposed lava rock foundation and wall matches the typical dark-colored lava rock used on other park buildings.				
Would any existing landscape features be affected such as removed, concealed or damaged in some way? ☐ **Y** ☑ **N**				
If so – describe:				
Other considerations:				

OVERALL COMPATIBILITY OF PROJECT WITH EXISTING LANDSCAPE CHARACTER										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST OF VISUAL ELEMENTS				
Assess the **contrast** of the **project's visual elements** (i.e., form, line, color and texture) with the existing view's visual elements. Consider how visually prominent the project will be through the introduction of, bold lines, forms & textures, intense colors, and contrasting motions or bright or flashing lights.				
Project form contrast:	None	Weak	Moderate	Strong
Describe: The blocky, pyramidal form of the USGS field station from this viewpoint would contrast with the existing structures in KMC. By maintaining existing vegetation around the proposed field station, the form is somewhat obscured limiting the level of contrast.				
Project line contrast:	None	Weak	Moderate	Strong
Describe: ☐ Breaks horizon The diagonal split-gable roof lines would be noticeable from this viewpoint, as the more modern architecture contrasts with the existing historic structures.				
Project color contrast:	None	Weak	Moderate	Strong
Describe: ☐ unpleasant contrast/colors clash, ☐ pleasing color contrast The dark siding, dark foundation rock, and lava rock wall blend with the setting.				
Project texture contrast:	None	Weak	Moderate	Strong
Describe: The coarser texture of the split gable roofline contrasts with the nearby historic structures, which have more simple gable rooflines.				
Other considerations: ☐ motion, ☑ lights The effect of diffuse lighting around the proposed USGS field station would be consistent with the existing lighting in KMC.				

OVERALL CONTRAST OF THE PROJECT'S VISUAL ELEMENTS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

CONTRAST WITH SPATIAL COMPOSITION AND PATTERNS					
Assess the **contrast** of the project's spatial patterns such as continuity scale and balance with the existing view's spatial patterns. Consider the project's visual relation to changes to the visual balance, scale of other elements, location in the view and spatial relationship to focal points, continuity/coherence of the view, as well as the other spatial pattern elements,					
Visual Balance:	Supports or Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: Since there are several eras of buildings in the KMC, the introduction of the USGS field station may disrupt the visual balance created by the historic structures in the KMC. Since existing vegetation would obscure views of the more modern field station, these effects would be reduced to "somewhat disrupts."					
Scale (size):	Substantially smaller	Somewhat smaller	Comparable	Somewhat larger	Substantially larger
Notes: The height of the proposed USGS field station would make it taller than most of the existing structures in KMC and more similar in scale to the maintenance facilities (mostly screened from view). The existing vegetation, screening views of the Project, would reduce the apparent scale of the field station and therefore reduce its visual influence on KMC.					
Focal points:	No effect	Somewhat distracts	Creates new focal point	Creates new dominant FP	
Notes: Along the western edge of the KMC, the presence of the USGS field station would begin to draw attention, but since the existing vegetation would partially obscure its form, it would not create a new focal point in the landscape.					
Continuity:	no disruption	Noticeable but minor	Substantial		
Notes: The field station would be noticeable but also partially screened by vegetation as well as being backdropped by existing vegetation. By maintaining the continuous forest setting from this viewpoint, the field station would begin to blend with the setting.					
Pattern:	Enhances	No effect	Somewhat disrupts	Substantially disrupts	
Notes: fits within existing patterns	somewhat consistent with patterns	completely inconsistent with patterns			
Location in view:	Periphery/Edge Left	Off center – left	Center	Off center right	Periphery/edge Right
Notes: The proposed USGS field station would be located in the center part of the view from this area. Through maintaining existing vegetation in the area, the visible extent of modifications proposed by the Project are reduced.					
Other considerations:					

OVERALL COMPATIBILITY OF PROJECT WITH SPATIAL COMPOSITION AND PATTERNS										
Adverse:	Very High	High	Moderate	Low	**No Effect**	Low	Moderate	High	Very High	**: Beneficial**

OVERALL EFFECT. Considering the project's visual effects described above, assess the visual effect to scenic quality as a whole. It is not expected that this is simply the sum of the above ratings, but will require thoughtful consideration and judgement. Use this scale to evaluate the overall effect: (1.) Is the effect Adverse or Beneficial, or is there No Effect? (2.) Is the effect Low, Moderate or High?

OVERALL EFFECT ON SCENIC QUALITY																		
Adverse:	**High**			**Moderate**			**Low**			**No Effect**	**Low**			**Moderate**			**High**			**: Beneficial**
	+	···	–	+	···	–	+	···	–		+	···	–	+	···	–	+	···	–	

VARIABLE FACTORS	
Lighting	N/A
Atmospheric conditions	N/A
Distance/ backdrop	The proposed USGS field station would be visible within the foreground distance zone (0–0.5 mile).
Viewing position	Views would occur from a level viewing position.
Backdrop	By maintaining existing vegetation behind the proposed USGS field station, it appears backdropped against the forest setting.
View limiting factors – topography, vegetation etc.	Maintaining existing vegetation in front of the proposed USGS field station would partially screen views of the structures and associated infrastructure.
Other	Having contrast between this building and the others in KMC is good to provide that delineation. The building's impact will be mitigated by using brown colors for walls, darker rock color, keeping the building below the treetops, and planting vegetation as needed to help screen the building.