



**National Park Service
U.S. Department of the Interior
Hawai'i Volcanoes National Park
Regions 8, 9, 10 and 12**



**U. S. Geological Survey
United States Department of the Interior
Volcano Science Center, HVO
PIERC, Pacific Islands Region**

FINDING OF NO SIGNIFICANT IMPACT Hawai'i Volcanoes Disaster Recovery Project

Recommended:

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Date

Approved:

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Date

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Date

1. Introduction

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine alternative actions and environmental impacts associated with the proposed project to repair or replace critical park and U.S. Geological Survey (USGS) infrastructure and park visitor facilities damaged in the 2018 eruption to address the National Park Service and USGS long-term operational and visitor use needs. USGS is a cooperating agency and participated in the development of the EA for the USGS facilities.

The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the EA and associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference below.

2. Selected Alternative and Rationale for the Decision

At the beginning of this process National Park Service Denver Service Center, regional, and local park staff and technical experts from the consulting team visited the park to evaluate locations for the replacement buildings. Following this site visit, four concepts were developed. Figures detailing these concepts can be found in Appendix B of the EA. These concepts were then presented to the public and agencies during the civic engagement process (further described on page 52 of the EA). Following the civic engagement period, a Value Analysis (VA) workshop was held on June 30 to July 2, 2020. Further discussion on the VA workshop can be found on page 6 of the EA.

During the VA workshop, the four concepts were evaluated using a process called Value Based Decision Making (VBDM). VBDM decisions are based on a choosing by advantages analysis (CBA), a process that evaluates the importance of advantages between alternatives.

Based on the CBA analysis, the VA team identified Concept 2 as the preferred concept. The final effort in the CBA process is referred to as the Reconsideration Phase. In this process Concept 2 was further refined by considering advantages from other alternatives. These changes included relocating the USGS facilities to the former ball field to provide separation of visitor functions from USGS functions. The results of the Reconsideration Phase are shown on Figures 7 and 8 in Appendix A of the EA. From this initial VA process and based on comments received during the public scoping process, the concept was further refined to reduce cultural and natural impacts, improve functionality, reduce initial and life cycle costs, and address staff, consulting parties, and public concerns. Modifications included removing the third full fee booth and reducing the size of the lane at the park entrance, reducing the size of the replacement visitor center by retaining the use of the existing auditorium, and optimizing outdoor visitor orientation, exhibits, and programming on the replacement visitor center lānai to allow for 24/7 access.

The result of these additional modifications is the proposed action that was described in the EA in detail and shown on Figures 1-6 in Appendix A of the EA.

This proposed action was then presented to the public in the draft EA in July 2022. During this period, the park held virtual public meetings to provide an opportunity for the public to learn more about the project and provide comments. During this period, the park also held consultation meetings with the Kūpuna consultation group.

Based on the analysis in the EA and considering consultations that occurred during the public comment period, the NPS has modified the proposed action as presented in the EA to remove the proposal to construct a replacement visitor center next to the existing Kīlauea Visitor Center/Headquarters (KVC/HQ) and to repurpose KVC/HQ for special programs and environmental education. The selected alternative consists of the following actions that were described in the EA (beginning on page 6).

- Deconstructing the damaged facilities and repairing visitor use amenities in the Uēkahuna bluff area
- Replacing the USGS research facilities with a new field station adjacent to the historic ball field within the Kilauea Military Camp (KMC)
- Enhancing the park entrance and realigning Crater Rim Drive to improve visitor safety
- Deconstruction of three temporary buildings located within the park Resources Management complex and relocation of National Park Service offices to former USGS Pacific Island Ecosystems Research Center-Kīlauea Field Station (PIERC-KFS) buildings

Details of these actions are presented in detail in Chapter 2 of the EA (beginning on page 6). Locations of these activities are shown on Figure 1.

Rationale

The selected alternative will meet the purpose and need of the project for repairing or replacing critical park and USGS infrastructure and park visitor facilities damaged in the 2018 eruption. While the selected alternative does not address replacing lost visitor facilities to resolve the overcrowding and diminished visitor experience that has resulted at the current KVC/HQ, this need will be addressed with future planning and compliance. Changes to the impacts disclosed in Chapter 3 of the EA are presented in Appendix A of this FONSI.

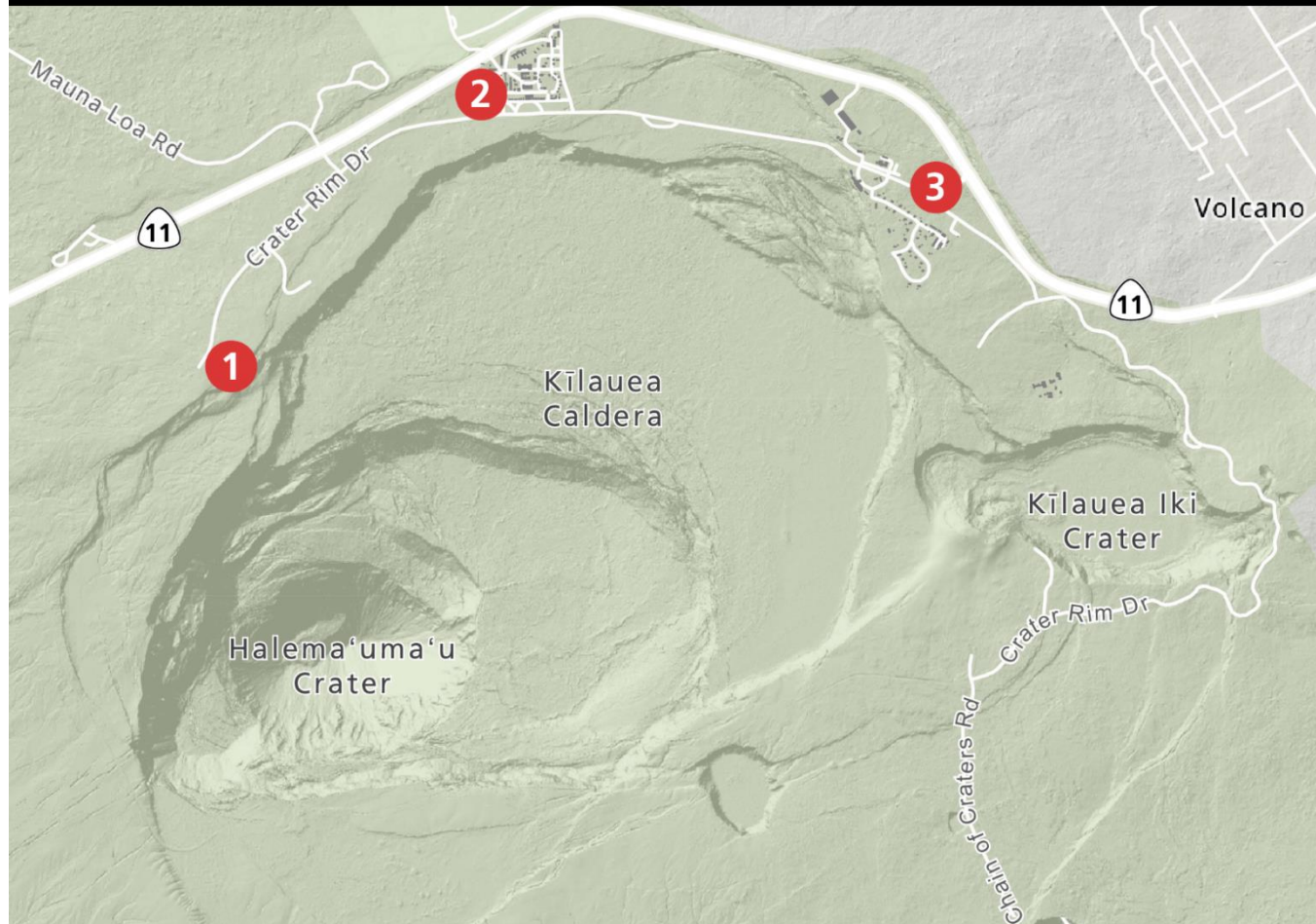
The selected alternative meets the need to restore and enhance park visitor use and enjoyment by removing the damaged buildings on Uēkahuna bluff and completing the following actions to improve and restore visitor access on the bluff:

- Berm regrading. The existing earth berm north of the buildings was constructed at the time of the construction of the Okamura building from the material excavated for the project. A portion of this berm will be used to fill the basement of the Okamura building. The east end of the berm will be regraded to continue to provide screening for the replacement water tank.
- Majority of building footprints restored to natural conditions. Vegetation will reestablish naturally with some limited planting of native species.

- Relocation of the utility connections to the existing comfort station.
- Development of a natural surface trail to connect to the Crater Rim Trail.
- Replacement of the deteriorated water tank.
- Installation of new post and cable barrier around visitor use areas.
- Repair and improvements to the overlook and stone perimeter wall.
- Expanding the overlook area into the Jaggar Museum footprint and including a reference to the museum by delineating the original building footprint on the ground with salvaged stone from the building.
- Installation of large benches to serve as both seating and the opportunity for elevated viewing, incorporating salvaged stone from the Jaggar Museum.

The selected alternative will also address compliance with the Architectural Barriers Act and Americans with Disabilities Act, and improve safety while protecting natural and cultural resources.

Project Location



- 1 Uēkahuna bluff
- 2 USGS field station
- 3 Crater Rim Drive realignment



Figure 1. Location of Disaster Recovery Projects in Hawai'i Volcanoes National Park

Mitigation Measures

To avoid, minimize or mitigate impacts, the following strategies will be used during or following deconstruction and construction. The authority for this project's mitigations comes from the following laws, policies, and consultations:

- National Park Service Organic Act (16 United States Code [U.S.C.] 1)
- National Park Service Management Policies (NPS 2006)
- Preservation of Natural, Cultural, and Archeological Resources (36 CFR 2.1)
- Hawai'i Volcanoes National Park General Management Plan (NPS 2016)
- Through consultations with US Fish and Wildlife Service under Section 7 of the Endangered Species Act and Hawai'i State Historic Preservation Division under Section 106 of the National Historic Preservation Act

Wildlife and Species of Concern

- Nighttime construction will be prohibited to prevent impacts to the Hawaiian petrel, Newell's shearwater, and band-rumped storm-petrel.
- Disturbance, removal, or trimming woody plants greater than 15 feet tall during the 'ōpe'ape'a (Hawaiian hoary bat) birthing and pup rearing season (June 1 through September 15) will be avoided.
- Bird nest surveys will be completed prior to tree cutting. No trees will be cut if there are active nests found in them.
- Barbed wire will not be used for fencing to remove the potential impalement of Hawaiian hoary bats.
- Construction staff will be educated to not approach, feed, or disturb nēnē.
- National Park Service biologists will monitor the project component areas for any nēnē activity prior to work starting and regularly during the project.
- Project specifications will include specific measures to ensure project work does not impact nēnē, such as requiring all food-related waste to be in fully sealed refuse containers and removed from the site daily to ensure birds and predators do not have access to the food waste.
- All construction vehicles, materials, and equipment will be inspected for nonnative species, including little fire ants, prior to entering the park. Preventing the introduction of harmful species will protect nēnē nesting habitat.
- All work will cease immediately if a nēnē nest is discovered within a radius of 150 feet of project work, or a previously undiscovered nest is found within said radius after work begins. Work will not start in that area until the nest is no longer active and the birds have left the area.

- If nēnē are observed loafing or foraging in the project area during the breeding season (September through April), work will halt and a biologist familiar with the nesting behavior of nēnē will survey for nests in and around the project area prior to the resumption of work. Surveys will continue for 3 or more days following the observation of nēnē presence (during which the birds may attempt to nest).
- No blasting will occur.
- In areas where nēnē are known to be present, the National Park Service will post and implement reduced speed limits, and inform project personnel and contractors about the presence of threatened species on-site.
- Project component areas will be fenced at the limits of the construction zone. Fencing will be chain link with skirting at the base that can be removed if a bird is inside the fenced area. In addition, at Uēkahuna bluff, an additional fence will be installed approximately 150 feet from the edge of the construction zone. The distance to the second outer fence may be adjusted based on the practicalities of the landscape and locations of known nesting sites. Fencing will be installed in advance of breeding season to allow time for the birds to become aware of it.
- Post construction revegetation will not include species known to be nēnē food plants to minimize the attractiveness of the landscaped areas. In addition, signs will continue to be posted to inform visitors that feeding nēnē is prohibited. At Uēkahuna bluff, the lawn around the existing bathroom will be removed in summer 2022, well in advance of construction, to minimize the attractiveness of the area. No new lawn will be established post construction to reduce human-bird conflicts.
- Rock and soil material stockpiled from past summit area projects will be transported from the Mauna Loa Quarry to Uēkahuna bluff to fill the building basement. This area will be frequently monitored by a biologist during nēnē breeding season. If a nest is discovered within 150 feet of the quarry piles, contractors will cease all work immediately at this site. Work will not begin again until the family leaves the area (at least 150 feet between family and project area). The contractor will not have access to the quarry area during the duration of the pause.
- Lighting needed for traffic control signs or barriers will be dark sky compliant. Any temporary lighting for safety requirements will meet or exceed the park's dark sky policies (minimum necessary, full cut-off, downward directed, amber [560-nm or greater] lamping).
- Any new permanent lighting will meet or exceed the park's dark sky policies (minimum necessary, full cut-off, downward directed, amber [560-nm or greater] lamping).

Vegetation

- Native plants will be salvaged as much as possible prior to ground disturbance. 'Ōhi'a trees will be propagated and replanted using local sources of materials (e.g., air layering, seeds and salvaged seedlings).

- Equipment used for clearing vegetation (including vehicles) will be cleaned prior to entering the park to decrease the likelihood of transporting nonnative species and the pathogens that cause Rapid 'Ōhi'a Death (ROD). Crews will follow the latest protocols on nonnative species prevention: Hawai'i Volcanoes National Park Invasive Pest Protocols (2022) and Hawai'i Volcanoes National Park Green Waste Standard Operating Procedures (2022).
- Tree removal will be minimized as much as possible.
- Surveys for the Hawaiian catchfly will be completed prior to any ground disturbance and individual plants will be fenced and avoided. Surveys will be completed during the peak time for flowering when identifiable features of the plants are more likely to be visible. If avoidance is not possible, the National Park Service will work with the U.S. Fish and Wildlife Service to transplant the plants to suitable undisturbed habitat.
- The National Park Service will monitor plants periodically during construction to monitor health and any impacts. If dust buildup on Hawaiian catchfly plants is evident, dust will be gently removed with compressed air or water by the National Park Service botanist.
- Invasive plants colonizing the area post construction will be removed and the area revegetated with native species.

Soils

- Any topsoil removed from construction sites will be salvaged and used for revegetation in the project component areas.
- Soils used in revegetation projects will only be sourced from within the park. If not enough soil from within the park is available, any imported soils will be steam sterilized and inspected prior to entry into the park to prevent introduction of invasive species
- To prevent erosion and protect both soil and vegetation, including the threatened Hawaiian catchfly, erosion-control measures that provide for soil stability and prevent movement of soils, such as silt fence structures made of burlap or biodegradable mesh, will be implemented in areas where there is high potential for runoff.

Cultural Resources

- All ground-disturbing activities will be monitored by a qualified archeologist meeting the Secretary of the Interior's Professional Qualification Standards.
- If previously unknown archeological resources are discovered during construction, all work in the immediate vicinity of the discovery will be halted until the resources are identified and documented and an appropriate mitigation strategy developed, if necessary, in accordance with pertinent laws and regulations, including the stipulations of the 2022 Programmatic Agreement Among the National Park Service Hawai'i Volcanoes National Park, U.S. Geological Survey, Hawai'i State Historic Preservation Officer, and the Advisory Council On Historic Preservation (Appendix D).

- In the event that human remains are discovered during construction activities, all work on the project in that area will stop and as required by law, and the Cultural Resources Program Manager notified immediately. All provisions outlined in the Native American Graves Protection and Repatriation Act (1990) will be followed.
- Known historic and prehistoric sites and isolated occurrences will be fenced or flagged and avoided during project activities.
- The National Park Service will prepare a revised and updated Crater Rim Historic District NRHP nomination, incorporating the historic resources identified in the 2006 Crater Rim Historic District Cultural Landscape Inventory (CLI) report and the 2009 Hawai'i Register of Historic Places Crater Rim Drive Historic District nomination form. Changes resulting from the 2018 eruption and from the current project will be included.
- The National Park Service will conduct a Traditional Cultural Property study of Hawai'i Volcanoes National Park and, based on the results of the report findings, prepare an NRHP nomination form for the Traditional Cultural Propert(ies) identified.
- The National Park Service will prepare a Historic American Landscape Survey (HALS) of the Uēkahuna bluff area that will meet the National Park Service HALS documentation requirements. The details of the history of the landscape change, including building changes and the viewing platform at the summit, will be covered in the HALS documentation. Demolition shall not proceed until the HALS documentation package is accepted by the National Park Service Heritage Documentation Program.
- Stone from the deconstructed buildings at Uēkahuna bluff will be salvaged for reuse in the replacement visitor center and at the bluff.
- The roundabout has been designed to maximize the amount of forest being retained, and to reduce the amount of visible pavement. Low-growing vegetation will be planted in the islands around and within the roundabout.
- The National Park Service will ensure that some of the existing berm material at Uēkahuna bluff will be used for the fill material that will be needed for the basement of the Okamura Building. The remaining fill will come from sources within the park that are left over from previous projects.
- The National Park Service will ensure that the expanded viewing platform at the summit will include the former Jaggar Museum footprint.
- All new National Park Service buildings will use the park's standard park brown and tan paint colors for the exterior paint and trim.

Visitor Use and Experience

- During construction, the park anticipates roadway and parking lot congestion and associated safety hazards; reduced visitor access to some popular destinations; and overcrowding at some parking lots and overlooks that diminishes visitor experience. To improve the visitor experience during construction, the park may implement strategies

such as parking restrictions, reservations, or other measures to better distribute vehicles and visitors throughout the day in the summit areas. In addition, signs, news releases, social media, and other communication methods will be used to inform visitors about facility and access restorations or closures during construction.

Visual Resources

- The height of structures will be reduced to the extent possible to decrease their visibility (and level of visual dominance) from viewpoints and to blend them with the existing setting.
- Building materials, paint, stain, and other color treatments will be selected to match existing park structures and the natural, existing setting to minimize their visual intrusion and adverse effects on natural and cultural resources; this will include selecting the replacement visitor center roof color to match adjacent structures.
- Improved site interpretation opportunities (e.g., signs or additions to National Park Service app) will be introduced 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 deconstruction of most of these structures to return the area to a more natural condition after the 2018 volcanic activity.
- Landscape plantings adjacent to the replacement visitor center and USGS field station will be maintained or expanded, including selective retention of mature ‘ōhi‘a and koa during construction to maintain existing vegetative screening.
- Landscape plantings along Crater Rim Drive will be maintained or expanded as needed. Additional plantings within the traffic circle, in medians, and along the roadside will 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. Plantings within the traffic circle will be low-growing species to ensure they do not hinder traffic safety.
- Enough of the redesigned berm will be retained to reduce the visibility of the replacement water tank on Uēkahuna bluff as viewed from the Crater Rim Trail.
- Landscape plantings will be expanded on and adjacent to the redesigned berm to further screen views of the replacement water tank.
- A paint color for the replacement water tank on Uēkahuna bluff will be chosen to blend in with the natural setting.
- All of the park’s Dark Sky/Night Lighting Avoidance and Minimization Policies (National Park Service 2018) will be followed.

Air Quality and Soundscapes

- All construction motor vehicles and equipment will have mufflers conforming to original manufacturer specifications that are in good working order to prevent excessive or unusual noise, fumes, or smoke.
- To reduce noise and air pollutant emissions, construction equipment will not be permitted to idle for longer than 3 minutes when not in use.
- Dust generated by construction will be controlled as necessary by spraying water on the construction site, or other best management practices for dust control.
- Outdoor work activities shall be restricted to one hour after sunrise until one hour prior to sunset.

Public Health, Safety, and Park Operations

- To reduce potential impacts on public health and safety, appropriate signage, barriers, and barricades will be used to clearly delineate work areas and prevent visitor travel near construction areas. Visitors will not be allowed into construction zones.
- To reduce potential safety hazards, construction crews will employ a hierarchy of hazard controls to protect themselves and visitors from hazards. The construction contractor will be required to develop a safety plan that will include (but is not limited to) securing areas of work, a traffic control plan, and fire protections.
- To reduce potential impacts on public health and safety, trucks hauling debris and other loose materials will be covered to prevent spillage.
- Emergency response protocols will be developed for implementation during construction. Construction activities will be conducted in accordance with established safety protocols to reduce potential safety hazards for visitors, employees, and construction crews.
- To reduce potential impacts on normal park operations during construction, employees and construction crews will be required to park their vehicles in designated locations.
- Existing water, gas, sewer, fire, fiber optic, and electric utility lines will be protected during construction activities.

3. Other Alternatives Considered

Alternative A: No Action Alternative

Under the no-action alternative, the buildings would have continued to be unusable at Uēkahuna bluff and would have continued to be unsafe as the area continues to subside on the crater side due to the caldera collapse, undermining slope stability and the building foundations; HVO would have continued to house personnel and equipment in Hilo and other locations; the entrance station would have continued to have traffic congestion problems that pose collision hazards for motorists and

pedestrians; and the traffic congestion would have continued to impact the visitor experience through increased waiting times to enter the park.

Alternatives Dismissed

The National Park Service initially evaluated four site concepts with additional elements that all concepts had in common. These site concepts were narrowed down to the proposed action that was presented in the EA. In addition, as the proposed action was developed, different design elements were further refined to reduce impacts on cultural and natural resources. These alternatives and design elements are discussed in detail in the EA in Section 2.3 (beginning on page 18).

Mitigation Measures and Design Features Dismissed

The following measures are not carried forward under the modified selected alternative because they are specific to the replacement visitor center that is not part of the selected alternative.

- The National Park Service would have completed the Kīlauea Administration and Employee Housing District NRHP nomination form.
- The design of the replacement visitor center would have respected many of the materials and forms of the existing KVC/HQ building.
- The roof of the replacement visitor center would have had a similar roof slope and massing similar to the existing KVC/HQ.
- The windows of the replacement visitor center would have been the same form and size as those of the existing KVC/HQ.
- The siding of the replacement visitor center would have been horizontal siding with the same exposure pattern as that of the existing KVC/HQ and other park buildings.
- The eave soffits of the replacement visitor center would have matched those of the existing KVC/HQ.

4. Public Involvement/Agency Consultation

The NPS conducted several public involvement efforts for this project. Civic engagement was conducted May 15, 2020, through June 15, 2020. Public scoping was held February 9, 2022, through March 11, 2022, and a formal comment period on the EA was held from July 1, 2022, through July 31, 2022.

In accordance with the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation regulations, the National Park Service initiated Section 106 consultation [36 CFR Part 800.3(c) (3)] with the Hawai‘i State Historic Preservation Division (SHPD) on May 12, 2020. As described in Section 3.5.3 of the EA, adverse effects on historic properties were identified. An assessment of effects for the overall undertaking was prepared for the project and was submitted to the Hawai‘i State Historic Preservation Office for review and concurrence. Concurrence was received on November 15, 2022. In addition, due to the adverse

effects on historic properties, a Programmatic Agreement between the National Park Service, U.S. Geological Survey; Hawai‘i State Historic Preservation Officer; and the Advisory Council on Historic Preservation was developed. The Programmatic Agreement was finalized and signed by all parties on November 15, 2022.

The park initiated informal Section 7 consultation with the USFWS on May 13, 2022, for the Hawaiian hoary bat (*Lasiurus cinereus semotus*), Hawaiian goose (*Branta sandvicensis*), Hawaiian petrel (*Pterodroma sandwichensis*), Newell’s Townsend’s shearwater (*Puffinus auricularis newelli*), the band-rumped storm-petrel (*Oceanodroma castro*), and Hawaiian catchfly (*Silene hawaiiensis*). In a letter dated June 1, 2022, the U.S. Fish and Wildlife Service concurred with the park’s recommendations to avoid/minimize impacts to the above species and the park’s determination that the selected alternative is not likely to adversely affect these species.

The park completed an application for a consistency review from the Hawai‘i Coastal Zone Management Program (CZM) in July 2022. The Hawai‘i CZM Program published a public notice in the State Environmental Review Branch publication, “The Environmental Notice,” on July 23, 2022, with the public review and comment period concluding on August 8, 2022. During the public notice period no public or agency comments or inquiries were received. On August 25, 2022, the CZM completed the federal consistency review and conditionally concurred with the park’s determination that the project is consistent to the maximum extent practicable with the enforceable policies of the Hawai‘i CZM Program. The conditions from the CZM are incorporated by reference into this FONSI and will be complied with.

5. Finding of No Significant Impact

Several issues were dismissed from detailed analysis in the EA (pgs. 4-5) for the following reasons:

- the environmental impacts associated with the issue were not central to the proposal or of critical importance;
- a detailed analysis of environmental impacts related to the issue was not necessary to make a reasoned choice between alternatives;
- the environmental impacts associated with the issue were not a big point of contention among the public or other agencies; or
- there were no potentially significant impacts to resources associated with the issue

As such, these impact topics do not have significant adverse effects on the human environment.

As previously disclosed above, the park initiated informal Section 7 consultation with the USFWS on May 13, 2022. The U.S. Fish and Wildlife Service concurred with the park’s recommendations to avoid/minimize impacts to the above species and the park’s determination that the selected alternative is not likely to adversely affect these species. The avoidance and minimization measure are listed in Section 2 of this FONSI.

As described in the EA, the selected alternative has the potential for adverse impacts on federally listed species (the nēnē), native forests, viewsheds, cultural landscapes, ethnographic resources, historic districts, human health and safety, visitor use and experience, and Park and USGS operations; however, no potential for significant adverse impacts was identified.

Nēnē

The environmental assessment found no significant adverse impacts to the nēnē (*Hawaiian goose; Branta sandvicensis*), a federally listed species that occurs within Hawai'i Volcanoes National Park. There is known nēnē nesting habitat at Uēkahuna bluff. Nēnē that could potentially use this habitat will be subject to noise and visual disturbance during deconstruction of existing buildings and construction of new buildings as these activities will occur during the breeding season. However, the measures listed on page 14 (Section 2.2.9.1) of the EA will restrict activity within 150 feet of breeding or nesting nēnē, ensuring that they are not disturbed. The project could also indirectly disturb or displace nēnē individuals foraging or flying to or from nests due to localized noise, lights, and human or vehicle activity associated with deconstruction and construction activities at Uēkahuna bluff, the historic ball field, Mauna Loa horse corral, and Mauna Loa quarry. The NPS will have dedicated staff to ensure adherence to the avoidance and minimization measures listed in the USFWS concurrence letter. This activity will be intermittent but result in short-term adverse impacts by increasing the existing baseline levels of human activity and traffic in the analysis area.

Native Forest Removal

The site where USGS facility will be located is seasonally dry forest that has been highly altered and is fragmented. Koa (*Acacia koa*) was planted in 1949 and it has been heavily invaded by nonnative invasive grasses which inhibits forest regeneration. The wet montane forest by the KVC/HQ area is secondary forest that is a diverse native dominated forest. 'Ōhi'a (*Metrosideros polymorpha*) and koa are the dominant canopy species in both seasonally dry and wet forests.

Decommissioning and construction of the selected alternative will directly remove approximately 0.8 acres of seasonally dry forest and approximately 1.0 acre of wet montane forest. This is a reduction of 1.8 acres of wet montane forest that would have been removed as a result of the proposed action presented in the EA. 'Ōhi'a is a keystone species in Hawaiian forests. Construction equipment could act as vectors for transmission of the pathogens that cause ROD. Rapid 'Ōhi'a Death occurs in the areas of project ground disturbance. Shoes of construction workers, tools, gear, vehicles, and construction equipment will be cleaned following the latest protocols from the National Park Service, which include but are more restrictive than the DLNR and U.S. Department of Agriculture protocols to reduce the likelihood of ROD spread.

Though second growth 'ōhi'a forests can reestablish in less than 30 years in areas where nonnative species have not already colonized (Hughes et al. 2022), it will take substantially longer for mature old growth 'ōhi'a forests to develop (such as some of the areas that will be affected in the park).

The environmental assessment found no significant adverse impacts to native forests. The modified selected alternative reduces impacts to native forests by 1.8 acres.

Viewsheds

The environmental assessment found no significant impacts to viewsheds. Impacts will be both beneficial through the deconstruction of structures on Uēkahuna bluff as well as adverse through the construction of the USGS field station, and road improvements along Crater Rim Drive. Many of these views are important in furthering park interpretive themes and stories in addition to their importance as sacred sites for many Native Hawaiians. The project will increase visitor interpretive opportunities on Uēkahuna bluff as well as provide an experience more in tune with the area's natural, cultural, and traditional character. The USGS field station will be partially compatible with the existing landscape character, as there are existing structures from different eras and the field station will be screened by the vegetation that will be retained as a buffer. The USGS field station will not be readily visible from many locations in KMC. The building will not be viewable from Crater Rim Drive.

Vegetation clearing to accommodate the traffic circle and new entrance to the existing KVC/HQ will 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 existing KVC/HQ, compared to the existing setting, will be modified as the densely vegetated road corridor will be more open from the removal of approximately 1.0 acres of wet montane forest. The additional signage will improve wayfinding upon entering the park, construction of the traffic circle will facilitate safer traffic flow, and the additional entrance lane will reduce wait times to enter the park during times of high visitation. Wayfinding signage will be improved. The project includes mitigation measures to preserve vegetation to the extent possible, as well as plant low-growing native vegetation in the center of the traffic circle which will reduce impacts to the viewshed. Overall, the project results in some long-term adverse impacts when considering overall effects on landscape character and viewsheds. However, to further reduce these impacts, the planting of low-growing native vegetation within medians and along the roadside will visually break up expanses of pavement to blend with the natural setting and minimize the visual width of entry into the park.

The deconstruction of the three temporary buildings located within the National Park Service Resources Management Complex will decrease the extent of human made modifications in that area, trending toward a more natural landscape character. The complex is not open to the public and is surrounded by dense forest therefore changes to the area will not be seen by visitors.

Cultural Landscapes and Historic Structures

While deconstruction of the buildings at Uēkahuna bluff is considered beneficial to the ethnographic landscape, the removal of historic Jaggar Museum is an adverse effect to the Crater Rim Historic District. The Crater Rim Historic District includes contributing viewsheds and vistas across the caldera. The deconstruction of the buildings will restore the viewshed to its natural state thus enhancing the spectacular views that characterize the contributing resources.

Based on the current definition and boundary established for the Kīlauea Crater, most actions associated with the proposed action will occur outside the crater and will have no effect on the

NRHP-listed property. Proposed deconstruction of buildings at Uēkahuna bluff will occur directly adjacent to the property. However, as noted below in Ethnographic Resources, Uēkahuna bluff and the caldera are considered sacred by many Native Hawaiians and others, and deconstruction of structures and the restoration of a more natural environment will be considered beneficial to the sanctity of the property. Therefore, there will be no adverse effect.

With the siting of the new USGS building within existing vegetation, the colors chosen to purposefully help the building blend in with the natural surroundings, the visual barrier of the natural forest, and the location set 282 feet from the Crater Rim Historic District the new building will have no adverse effect on the Crater Rim Historic District.

Construction of the new USGS field station and associated parking lot immediately west of KMC will be sited adjacent the historic ball field on the western side of the camp, precluding any direct adverse effects. The National Park Service will maintain vegetation to the maximum extent possible between the new facility and historic ball field to minimize changes to the historic district's natural setting. The new facility will be located on the very perimeter of the camp, directly adjacent to the non-contributing motor pool service area that contains modern buildings. From many places of the camp the proposed building will not be visible. In addition, the building will have its own unique characteristics, delineating it from the historic buildings that make up the historic district. While the building will be clearly a modern addition to the landscape, it references the materials and stylistic language of the park, which further reduces impacts. It will be painted to blend in with the natural forest surroundings it will be constructed within. In addition, this road serves primarily as a service road and is not within the primary path of visitors to the site. The new field station would require aboveground power lines along KMC Road R-9 to provide electricity to the facility. Introduction of these powerlines will not alter views from KMC because the entire district has above ground power lines. Based on the siting of the building being tucked away within the existing vegetation, the colors chosen to purposefully blend it in with the natural surroundings, and its proposed location on the very perimeter of the camp, not visible from many locations throughout the camp, it is assessed to have no adverse effects to the historic district and cultural landscape.

The installation of the roundabout will have an adverse effect on the integrity of the Crater Rim Historic District because it introduces a road intersection configuration and width of road that is not compatible with the intersection configuration and entrance road width used during the historic district's period of significance.

To address the adverse effects on historic properties, a Programmatic Agreement between the National Park Service, U.S. Geological Survey; Hawai'i State Historic Preservation Officer; and the Advisory Council On Historic Preservation was developed. Mitigation measures developed for the Programmatic Agreement include updating the Crater Rim Historic District nomination, preparation of a Historic American Landscape Survey (HALS) of the Uēkahuna bluff area, and conducting a Traditional Cultural Property (TCP) study and subsequent National Register nomination to document the ethnographic significance of HAVO, including the Kīlauea Summit and Caldera.

Ethnographic Resources

Uēkahuna bluff is an important area to many Native Hawaiians, as it is considered a sacred area and it is utilized for cultural practices. The bluff will be available for cultural practices such as ho‘okupu (giving offerings) during the 2-year deconstruction and construction period. However, noise and visual effects to the area from the deconstruction of the existing buildings and repair and construction of the overlook may have impacts to the integrity of the setting as natural scenery and quiet solitude are sought after and valued during the cultural practices. The National Park Service will implement a project requirement that outdoor work activities shall be restricted to one hour after sunrise until one hour prior to sunset. These are common times, but not the only times that cultural practices occur in this area, therefore actions will minimize, but not avoid, adverse impacts to traditional practices in the area. However, effects will cease when the construction period ends. Long term, deconstruction of Uēkahuna bluff buildings will be beneficial since structures are considered inappropriate to Uēkahuna bluff as an ethnographic resource and detract from the sacred landscape.

Decommissioning and construction of the selected alternative will directly remove approximately 1.0 acres of wet montane forest. This is a reduction of 1.8 acres of wet montane forest that would have been removed as a result of the proposed action presented in the EA. Vegetation clearing will remove ethnographic resources as it will remove a section of a forested area and some individuals’ sense of spiritual or heritage connection could be adversely affected by clearing and grading activities. The National Park Service will minimize tree removal and replant ‘ōhi‘a trees from locally sourced genetic materials, e.g. plant propagation through air layering and seed collection. These actions will minimize, but not avoid, adverse ethnographic impacts; impacts will persist long term (beyond completion of the project) until revegetation efforts are successful.

The environmental assessment found no significant adverse impacts to ethnographic resources. The modification of the selected alternative reduces impacts to ethnographic resources by reducing the amount of wet montane forest directly removed by 1.8 acres.

Visitor Use and Experience

Construction will result in short-term adverse impacts to visitor use during the 2-year deconstruction and construction period. Visitors will not be allowed in construction areas and construction will cause additional noise, impacting visitor experience. However, the park will inform visitors in advance of construction activities via multiple methods, including the park’s website, social media, signage, and at the existing KVC/HQ. Due to limited parking at key visitor parking lots, parking reservations, restrictions or other methods could be employed to reduce congestion and enhance visitor experience. Park staff will be available to address visitor questions during construction and provide regular updates to the public about project progress and associated restrictions or closures.

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 and the fact that it is a focal point for views throughout this portion of the park. There will be an increase in visitor interpretive opportunities, and

additional trail and expanded vistas for viewing, resulting in a long-term beneficial impact at Uēkahuna Bluff.

The addition of a new entrance lane and the conversion of the Crater Rim Drive intersection to a roundabout are intended to address the visitor use and experience issues that are currently occurring. The new entrance lane will allow administrative traffic to bypass the visitor traffic more quickly and will allow for two full lanes for visitor queuing capacity during peak visiting times, reducing wait time and resulting in less frequent backups onto Highway 11. The roundabout would create more free-flowing activity and would allow for a safer option for visitors to access Crater Rim Drive East and Crater Rim Drive West, or the exit lane, all improving the visitor experience when entering and exiting the park.

With these measures in place to address adverse impacts during the deconstruction and construction period and the long-term beneficial impacts from the project, the EA found no significant adverse impacts to visitor use and experience.

Park and U.S. Geological Survey Operations

During deconstruction and construction activities, there could be additional issues with staffing due to having to direct visitors and traffic around active project areas.

The improved roundabout and traffic signs will reduce the amount of time park staff currently have to spend directing traffic in the parking lot. There could be short-term adverse impacts from construction vehicles potentially conflicting with USGS access if there is an eruption or other emergency. Having a facility within the park with the ability to have a separate emergency entrance will ensure that HVO staff can continue to maintain necessary monitoring equipment and respond rapidly to volcanic and earthquake events, and this will be a long-term beneficial impact.

Health and Human Safety, and Environmental Protection Laws

There will be an increase in traffic and equipment movement during deconstruction and construction. A fence will be installed to keep visitors away from the construction limits and traffic controls will be implemented to manage traffic in and out of the new roundabout during construction. The roundabout will improve traffic control and address the existing safety issue at the intersection. The deconstruction of buildings at the Uēkahuna bluff will improve safety for visitors and staff resulting in long-term beneficial impacts.

By creating a more natural, intact setting on the Uēkahuna bluff, park interpretive themes will be more clearly communicated to reflect the sacredness of the area and the fact that it is a focal point for views throughout this portion of the park. There will be an increase in visitor interpretive opportunities, and additional trail and expanded vistas for viewing, resulting in a long-term beneficial impact.

There will be no significant impacts on public health, public safety, or unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant

cumulative effects, or elements of precedence were identified. Implementation of the NPS selected alternative will not violate any federal, state, or local environmental protection law.

6. Conclusion

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA.

Based on the foregoing, it has been determined that an EIS is not required for this project and, thus, will not be prepared.

Appendix A: Errata Indicating Text Changes to EA

ERRATA

Hawaii Volcanoes National Park (Hawaii Volcanoes) and the U.S. Geological Survey (USGS) led a public comment process on the Environmental Assessment (EA) from July 1 to July 31, 2022 to seek community input to on the proposed Hawaii Volcanoes Disaster Recovery Project and the impacts as disclosed in the EA. A total of 31 pieces of correspondence from 3 states were received during the public comment period.

This errata records changes to the text of the EA as a result of public comments and consultations that occurred during the public comment period. These edits correct, clarify, or modify original text based on public comments and consultations. These corrections do not increase the degree of impact described in the EA. Text that has been removed from the EA are in strikeout, text that has been added is in red.

PROPOSED ACTION DESCRIPTION

Page 8: The description of the proposed action has been changed as follows:

The proposed action would consist of several improvements within the summit area of Hawaii Volcanoes National Park. The proposed elements include the following:

- Deconstructing the damaged facilities and repairing visitor use amenities in the Uēkahuna bluff area
- Replacing the HVO research facilities with a new field station adjacent to the historic ball field within the Kilauea Military Camp
- ~~Construction of a replacement visitor center next to the existing KVC/HQ and repurpose KVC/HQ for special programs and environmental education~~
- Enhancing the park entrance and realigning Crater Rim Drive to improve visitor safety
- Deconstruction of three temporary National Park Service buildings in the park resources management complex and relocation of National Park Service offices to former USGS Pacific Island Ecosystems Research Center-Kilauea Field Station (PIERC-KFS) buildings

DESCRIPTION OF THE VISITOR CENTER

Page 10: The description of the visitor center has been removed.

~~A 6,870-square foot replacement visitor center building would be constructed next to the existing KVC/HQ building and near other visitor destinations, to replace the loss of the Jaggar Museum. This replacement visitor center follows the 2016 General Management Plan that recommended an integrated campus, or kauhale. Improvements related to the replacement visitor center are further described below.~~

- ~~Upon construction of the replacement visitor center, the visitor use portion of the existing KVC/HQ would be adaptively reused to provide a space for indoor park programs, special events, and K-12 educational programming. The existing KVC/HQ would continue to serve as the park headquarters and retain office~~

~~spaces in the back of the building, but the existing bookstore and visitor center would be moved to the replacement facility.~~

- ~~• The replacement visitor center would be built on a portion of existing visitor parking and a forested area to the east of the existing KVC/HQ. The building would include a sales area, orientation space, exhibit space, administrative area, public restrooms, and storage. Multiple entrances to the replacement building would accommodate access from the bus drop off and the expanded parking area.~~
- ~~• Expanded visitor parking would be built around the east and south sides of the replacement building to accommodate just over 200 vehicles, an increase of approximately 60 spaces compared to current parking. A new access point from Crater Rim Drive (discussed further in Section 2.2.6, Park Entrance) would serve the expanded parking lot and replacement visitor center.~~
- ~~• A new bus drop off point would be located directly in front of the replacement visitor center building.~~
- ~~• The replacement visitor center building would be compatible with the surrounding historic landscape and aesthetic design of the existing buildings at and near the existing KVC/HQ.~~
- ~~• The replacement visitor center and parking would align with existing development in this visitor use area. The main entry of the building would front Crater Rim Drive, similar to the existing KVC/HQ and Volcano House.~~
- ~~• A covered outdoor area for orientation, exhibits, and gathering space, identified as an interpretive lānai, would be built adjacent to the replacement visitor center. The interpretive lānai would be an outdoor extension of the visitor center where visitors can get information for planning their visit and learn about the park resources without having to enter the building. This allows for a smaller indoor space, as well as orientation and interpretation that is available 24/7. This outdoor area would also serve as covered programmatic space for ranger programs and cultural demonstrations.~~
- ~~• The existing trails around the existing KVC/HQ would be connected to form a loop trail connecting KVC/HQ to other amenities and nearby overlooks (as funding allows).~~
- ~~• The existing restrooms next to the existing KVC/HQ would be renovated (as funding allows).~~

PROPOSED ACTION ACTIVITIES

Page 12: The Proposed Action Activities have been changed and are as follows:

Clearing and Grading

- Clearing and grading would occur for new parking areas, field station building, replacement visitor center building and interpretive lānai, utilities for the new structures, new road alignment, and the Uēkahuna bluff berm.
- Clearing for the new parking area and new road alignment would include tree removal.
- Prior to clearing, tree seedlings and cuttings, and hāpu'u ferns (*Cibotium glaucum*) would be salvaged for park staff to use in revegetation efforts.

Utilities and Stormwater Facilities

- Existing electric and water lines that are currently fed through the buildings to be deconstructed at the Uēkahuna bluff would be replaced on-site to continue servicing the comfort station. The two existing water tanks would be removed **and replaced by one tank within the same footprint**. Because deconstructing the buildings would decrease the water demand, only one new water tank would be required to serve the existing comfort station, Nāmakanipaio Campground, and fire suppression needs. The new tank to be installed would be similar in size to the existing large tank.
- A portion of the site lighting along the path to the overlook at Uēkahuna bluff would be removed. New site lighting would be installed along the path to the overlook, along the north side of the overlook extension, and on the ends of each proposed bench to improve safety for visitation at night. All site lighting would be compliant with the park's dark sky requirements.
- Electric, water, communication, and septic services would be installed at the ~~replacement visitor center and~~ **USGS** field station to serve the new building and site facilities.
- Electric and communication lines would be installed at the park entrance to serve the new traffic loop counters, parking area light, and security cameras.

Traffic Control

- Temporary traffic control measures (e.g., signs, temporary closures, potential parking reservations) would be implemented for both vehicles and pedestrian foot traffic in the following areas:
 - Crater Rim Drive at entrance station, ~~replacement visitor center parking area,~~ Uēkahuna bluff parking area, Uēkahuna bluff overlook and comfort station, Crater Rim Drive at KMC, and KMC Road R-9.

MITIGATION MEASURES AND DESIGN FEATURES OF THE PROPOSED ACTION

Page 14: Mitigation measures and design features specific to the replacement visitor center have been removed.

Cultural Resources

- All ground-disturbing activities would be monitored by a qualified archeologist meeting the Secretary of the Interior's Professional Qualification Standards.
- If previously unknown archeological resources are discovered during construction, all work in the immediate vicinity of the discovery would be halted until the resources are identified and documented and an appropriate mitigation strategy developed, if necessary, in accordance with pertinent laws and regulations, including the stipulations of the 2022 Programmatic Agreement among the National Park Service Hawai'i Volcanoes National Park, U.S. Geological Survey, Hawai'i State Historic Preservation Officer, and the Advisory Council On Historic Preservation (Appendix E).
- In the event that human remains are discovered during construction activities, all work on the project in that area would stop and as required by law, and the Cultural Resources Program Manager notified immediately. All provisions outlined

in the Native American Graves Protection and Repatriation Act (1990) would be followed.

- Known historic and prehistoric sites and isolated occurrences would be fenced or flagged and avoided during project activities.
- The National Park Service would prepare a revised and updated Crater Rim Historic District NRHP nomination, incorporating the historic resources identified in the 2006 Crater Rim Historic District Cultural Landscape Inventory (CLI) report and the 201509-Hawai'i Register of Historic Places Crater Rim Drive Historic District nomination form. Changes resulting from the 2018 eruption and from the current project will be included.
- The National Park Service would conduct a Traditional Cultural Property study of Hawai'i Volcanoes National Park and, based on the results of the report findings, prepare an NRHP nomination form for the Traditional Cultural Property(ies) identified.
- The National Park Service would prepare a Historic American Landscape Survey (HALS) of the Uēkahuna bluff area that will meet the National Park Service HALS documentation requirements. The details of the history of the landscape change, including building changes and the viewing platform at the summit, will be covered in the HALS documentation. **The NPS shall not initiate demolition of infrastructure at the Uēkahuna Bluff until the NPS Regional Heritage Documentation Program concurs that the draft HALS documentation package is sufficient for demolition activities.** ~~Demolition shall not proceed until the HALS documentation package is accepted by the National Park Service Heritage Documentation Program.~~
- Stone from the deconstructed buildings at Uēkahuna bluff would be salvaged for reuse in the **USGS field station** ~~replacement visitor center~~ and at the **Uēkahuna** bluff.
- The roundabout has been designed to maximize the amount of forest being retained, and to reduce the amount of visible pavement. Low-growing **native** vegetation would be planted in the islands around and within the roundabout.
- The National Park Service will ensure that some of the existing berm material at Uēkahuna bluff would be used for the fill material that would be needed for the basement of the Okamura Building. The remaining fill would come from sources within the park that are left over from previous projects.
- The National Park Service would ensure that the expanded viewing platform at the summit will include the former Jaggar Museum footprint **and incorporate the history of the historic building into interpretive material.**
- The National Park Service would **update and** complete the Kīlauea Administration and Employee Housing District NRHP nomination form.
- ~~• The design of the replacement visitor center would respect many of the materials and forms of the existing KVC/HQ building.~~
- ~~• All new National Park Service buildings would use the park's standard park brown and tan paint colors for the exterior paint and trim.~~
- ~~• The roof of the replacement visitor center would have a similar roof slope and massing similar to the existing KVC/HQ.~~

- ~~• The windows of the replacement visitor center would be the same form and size as those of the existing KVC/HQ.~~
- ~~• The siding of the replacement visitor center would be horizontal siding with the same exposure pattern as that of the existing KVC/HQ and other park buildings.~~
- ~~• The eave soffits of the replacement visitor center would match those of the existing KVC/HQ.~~

Visual Resources

- Building materials, paint, stain, and other color treatments would be selected to match existing park structures and **to blend in with** the surrounding natural, ~~existing~~ setting to minimize their visual intrusion ~~and adverse effects on the~~ **landscape.** ~~natural and cultural resources; this would include selecting the replacement visitor center roof color to match adjacent structures.~~
- ~~Landscape plantings adjacent to the replacement visitor center and USGS field station would be maintained or expanded~~ **Vegetative buffers will be retained around the new USGS facility and the surrounding historic district.** There will be selective clearing of mature 'ōhi'a and koa during construction to maintain existing vegetative screening. **In the event that vegetation in the buffer dies, the NPS will replace them with native species that are the same or of similar type.**

ALTERNATIVES CONSIDERED BUT DISMISSED AND DESIGN ELEMENTS REFINED

Page 19: The following language is added to this section:

Construction of a 6,870-square-foot replacement visitor center building was proposed next to the existing KVC/HQ building and near other visitor destinations, to replace the loss of the Jaggar Museum. This replacement visitor center was dismissed following comments received during the public comment period on the draft EA in July 2022.

NĒNĒ

Page 25: The red text was added to the nēnē analysis:

Nēnē that could potentially use the habitats described above could be subject to noise and visual disturbance during deconstruction and construction, as these activities would occur during the breeding season. However, the measures listed in Section 2.2.9.1, Wildlife and Species of Concern, would restrict activity within 150 feet of breeding or nesting nēnē, ensuring that they are not disturbed. The project could also indirectly disturb or displace nēnē individuals foraging or flying to or from nests due to localized noise, lights, and human or vehicle activity associated with deconstruction and construction activities **at Uēkahuna bluff, the historic ball field, Mauna Loa horse corral, and Mauna Loa quarry. The NPS will have dedicated staff to ensure adherence to the avoidance and minimization measures listed in the USFWS concurrence letter.** This activity would be intermittent but result in short-term adverse impacts by increasing the existing baseline levels of human activity and traffic in the analysis area.

NATIVE FOREST REMOVAL

Page 26: The following text was added to the affected environment for native forest removal:

The site where USGS facility will be located is seasonally dry forest that has been highly altered and is fragmented. Koa (*Acacia koa*) was planted in 1949 and it has been heavily invaded by nonnative invasive grasses which inhibits forest regeneration. The wet montane forest by the KVC/HQ area is secondary forest that is a diverse native dominated forest. 'Ōhi'a (*Metrosideros polymorpha*) and koa are the dominant canopy species in both seasonally dry and wet forests.

Page 26: The following changes were made to the proposed action analysis for native forest removal:

Deconstruction and construction would result in the direct removal of **approximately 0.8 acres of seasonally dry forest and approximately 1.0 acres of wet montane forest.** ~~108 trees greater than 6 inch in diameter at breast height, with 75 of these trees being 'ōhi'a trees.~~ Most of these trees are native and their removal would result in the loss of forest habitat. Smaller trees would also be removed but were not included in the survey. In addition, trees that occur on the edge of the proposed disturbance could be indirectly damaged due to construction equipment and compaction. Appropriate buffers would be placed around the construction limits and monitoring would occur to ensure there is no indirect damage to the trees outside of the direct footprint.

VIEWSHEDS

Page 32: The analysis of impacts to viewsheds from the proposed replacement visitor center has been removed.

Replacement Visitor Center

~~Two KOPs would have views of the replacement visitor center with KOP 2 located at the current entrance to the existing KVC/HQ parking lot and KOP 5 located where motorists and hikers would have their first view of the existing KVC/HQ as they return from the Steam Vents area (see visual simulations in Appendix D).~~

~~As viewed from KOP 2, the replacement visitor center would result in long-term adverse impacts as the project would be co-dominant with the existing KVC/HQ 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/HQ. Through maintaining vegetation along Crater Rim Drive and behind the new building, as well as the planting of 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/HQ 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 not result in long-term adverse impacts when considering its overall effects on landscape character, viewer experience, and National Park Service management.~~

Since the replacement visitor center would be partially screened from view and the design would mimic the existing KVC/HQ, the project would attract attention but would not be prominent in the setting as viewed from KOP 5. 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 'ōhi'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. 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 long term beneficial impacts when considering its overall effects on landscape character, viewer experience, and National Park Service management.

In summary, 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).

CULTURAL LANDSCAPES AND HISTORIC STRUCTURES

Page 38: The affected environment for the Kilauea Administration and Employee Housing Historic District has been removed.

The Kilauea Administration and Employee Housing Historic District covers 43 acres along Crater Rim Drive. The housing and administrative district was determined eligible for the NRHP under Criterion A for its association with early park planning at Hawai'i Volcanoes National Park and with the CCC program. It is also significant at the state level under Criterion C, distinctive architectural design, because its contributing features exemplify the "Park Service Rustic" style. The period of significance spans 1927 to 1942, covering the years of initial master planning efforts, development, and CCC involvement.

Today, the historic district contains the main administrative and residential area for Hawai'i Volcanoes National Park, and existing landscape characteristics continue to contribute to the historic district's integrity. Despite alterations to individual contributing buildings, such as small additions, new roofs, and the replacement of a small number of windows, the district's overall design, materials, and workmanship have not been compromised (National Park Service 2006b). The district is divided by zones: the Administrative Zone, Housing Zone, and Maintenance Zone. The project is within the Administrative Zone of the historic district.

~~1.1.1.1.1 Historic Structures~~

~~No historic structures were identified that are directly located within the APE, however, the proposed replacement visitor center is adjacent to the existing KVC/HQ, which is a historic building and a contributing structure to the Kilauea Administration and Employee Housing Historic District.~~

Page 40: The analysis for the Kilauea Military Camp Historic District has been revised accordingly:

Kilauea Military Camp Historic District

Construction of the new USGS field station and associated parking lot immediately west of KMC would be sited adjacent the historic ball field on the western side of the camp, precluding any direct adverse effects. The National Park Service would maintain vegetation to the maximum extent possible between the new facility and historic ball field to minimize changes to the historic district's natural setting. The new facility would be located on the very perimeter of the camp, directly adjacent to the non-contributing motor pool service area that contains modern buildings. From many places of the camp the proposed building will not be visible. In addition, the building will have its own unique characteristics, delineating it from the historic buildings that make up the historic district. While the building will be clearly a modern addition to the landscape, it references the materials and stylistic language of the park, which further reduces impacts. It will be painted to blend in with the natural forest surroundings it will be constructed within. In addition, this road serves primarily as a service road and is not within the primary path of visitors to the site. The new field station would require aboveground power lines along KMC Road R-9 to provide electricity to the facility. Introduction of these powerlines would not alter views from KMC because the entire district has above ground power lines. Based on the siting of the building being tucked away within the existing vegetation, the colors chosen to purposefully blend it in with the natural surroundings, and its proposed location on the very perimeter of the camp, not visible from many locations throughout the camp, it is assessed to have no adverse effects to the historic district and cultural landscape.

Page 41: The proposed action analysis of impacts to the Kilauea Administration and Employee Housing Historic District has been removed:

~~Construction of the replacement visitor center would introduce a new 13,000 square-foot structure that would be built on a portion of the existing visitor parking and forested area. The existing KVC/HQ, visitor parking lot, and surrounding forested setting all currently contribute to the character of the historic district (National Park Service 2006b). Therefore, although the replacement visitor center would be designed to comply with Secretary of the Interior's Standards for Rehabilitation, in particular Standard 9 (36 CFR 67.7) as it would be consistent with existing architecture and compatible with the massing, size, scale of the existing KVC/HQ, the proposed action would represent a direct adverse effect on the historic district by introducing a new building and parking lot into the Administrative Zone. The National Park Service would leave a strip of natural landscape between the existing KVC/HQ and the replacement visitor center to minimize adverse effects to the historic district.~~

ETHNOGRAPHIC RESOURCES

Page 43: The proposed action analysis for ethnographic resources has been revised as shown in red text.

Decommissioning and construction will directly remove **approximately 0.8 acres of seasonally dry forest and approximately 1.0 acres of wet montane forest** ~~would also remove up to 75 'ōhi'a trees (that range from 6 to 20 inches in diameter at breast height)~~ during construction of the park entrance, replacement visitor center, and USGS field station. Vegetation clearing would ~~eliminate~~ **have adverse effects on** ethnographic resources (e.g., 'ōhi'a trees) as it would remove a section of a forested area and some individuals' sense of spiritual or heritage connection could be adversely affected by clearing and grading activities. As described in Section 2.2.9.2, Vegetation, the National Park Service would minimize tree removal and replant 'ōhi'a trees from locally sourced genetic materials. These actions would minimize, but not avoid, adverse ethnographic impacts; impacts would persist long term until revegetation efforts are successful.

HEALTH AND HUMAN SAFETY

The proposed action analysis has been modified:

~~The replacement visitor center is designed to address the overcrowding of the space and therefore would have a long-term beneficial effect on health and human safety.~~

VISITOR USE AND EXPERIENCE

Page 45: The impacts analysis for visitor use and experience has been changed as follows:

No-Action Alternative

~~Under the no-action alternative, visitor use and experience would continue to be degraded due to the inadequate space available at the existing KVC/HQ and loss of operations at Uēkahuna bluff that is resulting in overcrowding. The entrance station would continue to function in its current capacity and visitors to the park during peak times would continue to experience long waits. Visitor counts are expected to continue to increase, which would further degrade the visitor experience.~~

Proposed Action

Under the proposed action, construction would result in short-term adverse impacts to visitor use during the 2-year deconstruction and construction period. Visitors would not be allowed in construction areas and construction would cause additional noise, impacting visitor experience. However, the park would inform visitors in advance of construction activities via multiple methods, including the park's website, social media, signage, and at the existing KVC/HQ. Due to limited parking at key visitor parking lots in this area, parking reservations, restrictions or other methods could be employed to reduce congestion and enhance visitor experience. Park staff would be available to address visitor questions during construction and provide regular updates to the public about project progress and associated restrictions or closures. ~~Long-term impacts are beneficial due to increased ability to serve visitors, including sufficient parking for the facility.~~ **Visitor use and experience would continue to be degraded due to the inadequate space available at the existing KVC/HQ and loss of operations at Uēkahuna bluff that is resulting in overcrowding. This issue will be addressed with future planning and compliance.**

Replacement Visitor Center

The replacement visitor center would further the purpose of the Visitor Services Zone to support a high level of visitor use, access, and interpretation. The existing KVC/HQ and its auditorium would still be used for administrative offices, public presentations, and K-12 educational programs in the future. The replacement visitor center would solve the issue of overcrowding with additional park operational services (restrooms, parking) and allow for greater interpretive opportunities indoors and outdoors with increased exhibit space and lānai areas, increasing the importance of this location to further park interpretive themes and the stories communicated to visitors. The proposed action would result in a long-term beneficial impact for visitor use and experience.

PARK AND U.S. GEOLOGICAL SURVEY OPERATIONS

Page 50: The analysis for National Park Service operations has been changed as follows:

During deconstruction and construction activities, there could be additional issues with staffing due to having to direct visitors and traffic around active project areas. Under the proposed action, there would be long-term beneficial impacts to park operations through the addition of a replacement visitor center that is large enough to accommodate visitors. With only one visitor center, instead of the existing KVC/HQ and Jaggar Museum, it could be better staffed and still allow flexibility for park staff to provide interpretive programs, guided hikes, and educational opportunities throughout the park again. It would also provide park staff with the ability to maintain facilities in an efficient manner without having to travel to other parts of the park. The improved parking lot, roundabout, and traffic signs would reduce the amount of time park staff currently have to spend directing traffic in the parking lot.

The existing overcrowding of the existing KVC/HQ facility and adverse impacts to National Park Service operations would continue to exist, as described in the affected environment. This issue will be addressed with future planning and compliance.

Appendix B:
Response to Substantive Public Comments

Concern Statement	Representative Comment	Response
<p>Site the replacement visitor center in the ballfield adjacent to the Kīlauea Military Camp.</p>	<p>I suggest siting the New Visitor Center at the ballfield adjacent to Kīlauea Military Camp. The area is disturbed and is open. Construction access can be made through the Crater Rim Drive and Maunaloa Road connector, mitigating construction traffic nightmares at the site of the current visitor center. The 75+ ‘ōhi‘a trees at the Preferred Alternative site will not be sacrificed.</p>	<p>This location was analyzed early in the process, as described in the EA. To use the ball field area, it would require also removing forest to provide the space required and the separation needed between the USGS and the NPS facilities. This location would result in impacts to ethnographic resources, historic properties, native forest, nēnē, visitor experience, and park operations with the visitor facility placed adjacent to the proposed location for the USGS facility, therefore it was dismissed.</p>
<p>Use existing buildings for the new facilities and work within the footprint of existing buildings.</p>	<p>I suggest remodeling the present visitor center. Remove and rebuild the lānai roof with a shape that emulates a traditional hale, similar to the roofline of the Entrance Station. The lānai may have some exhibits as it does now. We must remember that the park is The Exhibit. • The interior of the current visitor center can accommodate an expanded Hawai‘i Pacific Parks Association store, as well as cultural demonstrators. • Change traffic in the parking lot to one-way, making the roadway narrower, and allowing expansion of the lānai into the lot. • Leave the Education Center for students where it is, with lawn and forest as activity spaces, and from there a convenient safe walk to Kūpina‘i Pali for learning about plants, geology, place names, etc.</p> <p>I would rather see the park incorporate what we have already then create another footprint.</p>	<p>The NPS will examine alternative ways to replace the lost function of Jaggar Museum interior space while protecting historic structures and enhancing visitor experience. The suggested elements may be considered during a future planning effort.</p>

Concern Statement	Representative Comment	Response
Include information in the plan to address accessibility for disabled persons.	I was wondering why there is no information about accessibility for disabled persons. It would mean a great deal to have some additional accessible areas for viewing and walker or wheelchair mobility. Please include this information in the plan.	The project is designed to comply with the Architectural Barriers Act and Americans with Disabilities Act. Specifically on page 1 of the EA, it states "Additionally, the proposal is intended to address compliance with the Architectural Barriers Act and Americans with Disabilities Act"
Include covered areas at Uēkahuna bluff and identify areas for covered picnic areas.	<p>The park sorely needs better picnic facilities for those visitors who pack a lunch due to the limited food services within the park.</p> <p>Are/is there going to be some covered area(s) so that people may get out of the rain or sunshine?</p>	<p>Picnic facilities are outside the scope of this project but may be considered in future park planning efforts.</p> <p>New structures at Uēkahuna bluff were dismissed from consideration early in the planning process to reduce impacts of the built environment on ethnographic resources at the bluff.</p>
Keep the annex and continue to use it.	For the volcano sciences, the annex has been the scene of scientific discovery and history-making that has not only hugely enlarged our understanding of how Hawaiian volcanism, but of similar shield-volcano volcanism around the world. The building has, in other words, its own deep history and importance. It was much more than an “annex”. As such, at a time where working space and exhibition space are desperately needed in the Park, why tear down a building that suffered little damage and is not on unstable ground? There are so many uses it could be put to, while honoring the work done within it over the last several decades.	As disclosed on page 19 of the EA, the repair and reuse of the Annex building was considered to maintain administrative office space at Uēkahuna bluff. This was dismissed due to safety and operations and maintenance concerns related to maintaining buildings so close to the crater. Another factor was the cost to relocate/reroute utilities from the Okamura building into the Annex building. This was also dismissed due to the desire to decrease the amount of infrastructure on the sacred site.
Allow annual passholders to use the new entrance lane.	Would passholders be able to use the extra lane, perhaps with a scan machine?	The additional lane for administrative vehicle use allows the park to have flexibility in the future to consider additional ways to streamline access through the entrance area.

Concern Statement	Representative Comment	Response
The project should include improving bicyclist access and providing infrastructure to support bicycle use.	The latest Recovery Project does not mention any attention given to improving bicyclist access and safety within the park. Any improvements made to the park for any reason should always have an eye towards improving the situation for cyclists, as the HVNP has the most wonderful cycling on the island! Within the scope of this project, care should be taken to create a safe bicycling and pedestrian space within the roundabout, parking area intersections, and bicycle secure parking facilities at all administrative and visitor buildings, and popular visitor attractions.	The transportation corridors will be examined in more detail in a future planning effort, including bicycle use.
A traditional cultural property study should be completed before implementing the project.	NPS should conduct a traditional cultural property (TCP) study BEFORE implementation of this project. Native Hawaiian kūpuna, and others, already intimately understand that the lands of the park are a TCP.	Development of the TCP is part of mitigation measures for the project, therefore it cannot be completed prior to implementation.
‘Ōhi‘a trees should not be removed to build new buildings.	Cutting down at least 75 ‘ōhi‘a and more in diameter is the opposite of protecting them. ‘Ōhi‘a are besieged by dieback and by Rapid ‘Ōhi‘a Death. Why purposefully kill them to erect a building? And I note that it definitely takes more than 30 years to establish a second growth ‘ōhi‘a forest as is stated in the EA. And, I don’t understand why it seems necessary to airlayer trees from the site before destroying them. Rather, to encourage genetic diversity of ‘ōhi‘a, grow and plant seedlings.	<p>The selected alternative has removed the visitor center from the proposed activities. The NPS will examine alternative ways to replace the lost function of Jaggar Museum interior space while protecting historic structures and enhancing visitor experience thru future planning and compliance.</p> <p>The approach is multi-pronged and air layering is just one component. The park will also grow plants from seed and outplant to the areas needing restored after the project is complete.</p>

Concern Statement	Representative Comment	Response
Ensure there is funding to maintain new infrastructure.	With acquiring new assets will we have enough money to maintain them from year to year? Do we have enough money currently to maintain our existing buildings now?	Operations and maintenance were factors considered during the development of the alternatives.
Provide off hours access to restrooms and include water bottle filling stations and drinking fountains.	Will there be out of hours access to the restrooms, and also will there be water bottle fill and drinking fountains with the new restrooms?	The park intends to operate the restrooms 24/7 as we currently do. There will be a water bottle filling station.
The proposed location of the replacement visitor center will increase congestion.	The congestion at the present Visitor Center will be further compounded by another 8 bus parking spaces and 118 passenger spaces. A visitor center further away than close proximity to the entrance station will allow a natural dissemination of traffic into the further reaches of the park. A slow drive to the KMC site will allow visitors to decompress and take in the natural ambience of the steam vents viewscape as their first impression rather than corralling them into a saturated metropolis of: proposed new visitor center, Educational Center, Ohia Wing, Volcano House, Volcano Art Center, and Natural History Book Shop.	The selected alternative has removed the visitor center from the proposed activities. The NPS will examine alternative ways to replace the lost function of Jaggar Museum interior space while protecting historic structures and enhancing visitor experience thru future planning and compliance.
Ensure that the landscaping in the roundabout does not cause visibility issues for traffic entering the roundabout.	My comment is regarding to the roundabout. Instead of a garden landscape in the middle, I would prefer a lava circular wall with a unique low lava bolder in the center (no maintenance required). I feel that it would be safer if drivers could see all the cars entering the circle and be prepared to drive defensively/carefully upon entering.	Low-stature native vegetation will be planted in the center of the roundabout. In the Programmatic Agreement, it is a mitigation measure to have vegetation in the roundabout to soften the developed feeling.

Appendix C: A Non-Impairment Determination

Non-Impairment Determination

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of the Interior and the National Park Service (NPS) to manage units "to conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 U.S.C. 100101). NPS *Management Policies 2006*, Section 1.4.4, explains the prohibition on impairment of park resources and values:

"While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them."

An action constitutes impairment when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values" (NPS 2006, Section 1.4.5). To determine impairment, the NPS must evaluate the "particular resources and values that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may constitute impairment, but an impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance (NPS 2006, Section 1.4.5).

Fundamental resources and values for Hawai'i Volcanoes National Park are identified in the enabling legislation for the park and the Foundation Document. Based on a review of these documents, the fundamental resources and values for Hawai'i Volcanoes National Park are:

Volcanoes and Associated Volcanic Features and Processes. Two active hot-spot shield volcanoes, dynamic geologic processes, and volcanic features demonstrate the effects of the forces of nature and record the geologic history.

Body of Scientific Knowledge and Investigations. Documents, collections, and observations contribute to scientific discovery and range from early first-hand accounts of eruptive events to current scientific research and museum collections.

Opportunities for Scientific Research and Monitoring. The park serves as a world-class living laboratory for geologic research, conservation biology, ecosystem development, island

biogeography, and evolution that continues to build on the existing body of scientific knowledge for resource protection, public safety, and environmental understanding.

Biological Diversity. The park contains an extraordinary assemblage of native plants and animals—more than 90% of which are endemic to the Hawaiian Islands and many of which are rare, endangered, and threatened with extinction.

Ecological Integrity. The park perpetuates native ecosystems and communities, many of which are unique to the park, and provides a refuge for endemic plants and animals that span seven ecological zones ranging from seacoast to alpine. The park also supports the continuation of natural processes and interactions among species and between the biotic and abiotic environments.

Natural Sounds. Park soundscapes are protected from many human-caused sounds and are dominated by the sounds of wind, ocean, volcanic activity, and native species.

Night Sky and Scenic Vistas. The unobscured night sky is characterized by an absence of artificial light and scenic vistas are unobstructed by development and human-caused air pollution. •

Remote and Challenging Experiences. The park promotes opportunities for visitors to experience solitude, primitive conditions, and challenge. •

Natural Landscape Character. From mauka (toward the mountain) to makai (toward the ocean), vast expanses of the park's wilderness have been affected primarily by the forces of nature—retaining their primeval character. •

First-hand Volcanic Experiences. The park provides opportunities for visitors to approach and experience active volcanic eruptions including fountains, fissures, and flows. •

Pelehonuamea. Volcanic landscapes and all active flows and products of eruptive events are the representation of Pelehonuamea, deity of Hawaiian volcanoes. •

Wahi Kapu (Sacred Places) and Wahi Pana (Celebrated Places). The entire park landscape and all of its inhabitants and features, including the sky as a layered extension of the landscape, are sacred to Native Hawaiians, particularly Halema'uma'u Crater (home of Pelehonuamea), Mauna Loa's Moku'āweoweo caldera (a focal point for the greater Hawaiian relationship to the universe-stars, sun, moon), and mauka forested areas. •

Opportunity for Traditional Cultural Use. Native Hawaiian traditional uses in the park perpetuate traditional practices, knowledge, and the cultural importance of this area. These practices, including chants and dances, depend upon natural sounds, unobstructed views of mountain summits, and an environment that has not been greatly altered by human-caused changes. •

Cultural Resources. The park's rich and varied cultural resources, including objects, archeological sites, cultural landscapes, historic structures, and ethnographic resources are preserved and contribute to interpreting and understanding the greater Hawaiian culture and the more recent human history within the park.

Resources that were carried forward for detailed analysis in the EA and are considered necessary to fulfill specific purposes identified in the establishing legislation or proclamation of

the park; are key to the natural or cultural integrity of the park; and/or are identified as a goal in relevant NPS planning documents include: Nēnē, Native Forest Removal, Viewsheds, Ethnographic Resources, and Cultural Landscapes and Historic Structures. Accordingly, a non-impairment determination is made for each of these resources. Non-impairment determinations are not necessary for human health and safety, visitor use and experience, or Park and USGS Operations because impairment findings relate back to park resources and values, and these impact topics are not generally considered park resources or values according to the Organic Act.

This non-impairment determination has been prepared for the selected alternative, as described in the Finding of No Significant Impact for the Hawai'i Volcanoes Disaster Recovery Project.

Nēnē

The nēnē (Hawaiian goose; *Branta sandvicensis*) is a federally listed species that occurs within Hawai'i Volcanoes National Park. There is known nēnē nesting habitat at Uēkahuna bluff. Nēnē that could potentially use this habitat will be subject to noise and visual disturbance during deconstruction of existing buildings and construction of new buildings as these activities will occur during the breeding season. However, the measures listed on page 14 (Section 2.2.9.1) of the EA will restrict activity within 150 feet of breeding or nesting nēnē, ensuring that they are not disturbed. The project could also indirectly disturb or displace nēnē individuals foraging or flying to or from nests due to localized noise, lights, and human or vehicle activity associated with deconstruction and construction activities at Uēkahuna bluff, the historic ball field, Mauna Loa horse corral, and Mauna Loa quarry. The NPS will have dedicated staff to ensure adherence to the avoidance and minimization measures listed in the USFWS concurrence letter. This activity will be intermittent but result in short-term adverse impacts by increasing the existing baseline levels of human activity and traffic in the analysis area. Given the above impacts, the NPS has determined that the selected alternative will not result in an impairment to the nēnē or its habitat.

Native Forests

The site where USGS facility will be located is seasonally dry forest that has been highly altered and is fragmented. Koa (*Acacia koa*) was planted in 1949 and it has been heavily invaded by nonnative invasive grasses which inhibits forest regeneration. The wet montane forest by the KVC/HQ area is secondary forest that is a diverse native dominated forest. 'Ōhi'a (*Metrosideros polymorpha*) and koa are the dominant canopy species in both seasonally dry and wet forests.

Decommissioning and construction of the selected alternative will directly remove approximately 0.8 acres of seasonally dry forest and approximately 1.0 acre of wet montane forest. This is a reduction of 1.8 acres of wet montane forest that would have been removed as a result of the proposed action presented in the EA

'Ōhi'a is a keystone species in Hawaiian forests. Construction equipment could act as vectors for transmission of the pathogens that cause ROD. Rapid 'Ōhi'a Death occurs in the areas of project ground disturbance. Shoes of construction workers, tools, gear, vehicles, and construction equipment will be cleaned following the latest protocols from the National Park Service, which include but are more restrictive than the DLNR and U.S. Department of Agriculture protocols to reduce the likelihood of ROD spread.

Though second growth 'ōhi'a forests can reestablish in less than 30 years in areas where nonnative species have not already colonized (Hughes et al. 2022), it will take substantially

longer for mature old growth 'ōhi'a forests to develop (such as some of the areas that will be affected in the park).

Given the above impacts, the NPS has determined that the selected alternative will not result in an impairment to native forests.

Viewsheds

Impacts to viewsheds will be both beneficial through the deconstruction of structures on Uēkahuna bluff as well as adverse through the construction of the USGS field station, and road improvements along Crater Rim Drive. Many of these views are important in furthering park interpretive themes and stories in addition to their importance as sacred sites for many Native Hawaiians. The project will increase visitor interpretive opportunities on Uēkahuna bluff as well as provide an experience more in tune with the area's natural, cultural, and traditional character. The USGS field station will be partially compatible with the existing landscape character, as there are existing structures from different eras and the field station will be screened by the vegetation that will be retained as a buffer. The USGS field station will not be readily visible from many locations in KMC. The building will not be viewable from Crater Rim Drive.

Vegetation clearing to accommodate the traffic circle and new entrance to the existing KVC/HQ will 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 existing KVC/HQ, compared to the existing setting, will be modified as the densely vegetated road corridor will be more open. The additional signage will improve wayfinding upon entering the park, construction of the traffic circle will facilitate safer traffic flow, and the additional entrance lane will reduce wait times to enter the park during times of high visitation. Wayfinding signage will be improved. The project includes mitigation measures to preserve vegetation to the extent possible, as well as plant low-growing native vegetation in the center of the traffic circle which will reduce impacts to the viewshed. Overall, the project result in some long-term adverse impacts when considering overall effects on landscape character and viewsheds. However, to further reduce these impacts, the planting of low-growing native vegetation within medians and along the roadside will visually break up expanses of pavement to blend with the natural setting and minimize the visual width of entry into the park.

The deconstruction of the three temporary buildings located within the National Park Service Resources Management Complex will decrease the extent of human made modifications in that area, trending toward a more natural landscape character. The complex is not open to the public and is surrounded by dense forest therefore changes to the area will not be seen by visitors. Based on the analysis above, the selected alternative will not result in impairment to viewsheds.

Cultural Landscapes and Historic Structures

Crater Rim Historic District is eligible for the National Register of Historic Places (NRHP) under Criterion A. The Kilauea Military Camp (KMC) historic district is eligible under Criteria A and C. The Kilauea crater was nominated for the NRHP in 1974.

While deconstruction of the buildings at Uēkahuna bluff is considered beneficial to the ethnographic landscape, the removal of historic Jaggar Museum is an adverse effect to the Crater Rim Historic District. The Crater Rim Historic District includes contributing viewsheds and vistas across the caldera. The deconstruction of the buildings will restore the viewshed to its

natural state thus enhancing the spectacular views that characterize the contributing resources.

Based on the current definition and boundary established for the Kīlauea Crater, most actions associated with the proposed action will occur outside the crater and will have no effect on the NRHP-listed property. Proposed deconstruction of buildings at Uēkahuna bluff will occur directly adjacent to the property. However, as noted below in Ethnographic Resources, Uēkahuna Bluff, the caldera is considered sacred by many Native Hawaiians and others, and deconstruction of structures and the restoration of a more natural environment will be considered beneficial to the sanctity of the property. Therefore, there will be no adverse effect.

With the siting of the new USGS building within existing vegetation, the colors chosen to purposefully help the building blend in with the natural surroundings, the visual barrier of the natural forest, and the location set 282 feet from the Crater Rim Historic District the new building will have no adverse effect on the Crater Rim Historic District.

Construction of the new USGS field station and associated parking lot immediately west of KMC will be sited adjacent the historic ball field on the western side of the camp, precluding any direct adverse effects. The National Park Service will maintain vegetation to the maximum extent possible between the new facility and historic ball field to minimize changes to the historic district's natural setting. The new facility will be located on the very perimeter of the camp, directly adjacent to the non-contributing motor pool service area that contains modern buildings. From many places of the camp the proposed building will not be visible. In addition, the building will have its own unique characteristics, delineating it from the historic buildings that make up the historic district. While the building will be clearly a modern addition to the landscape, it references the materials and stylistic language of the park, which further reduces impacts. It will be painted to blend in with the natural forest surroundings it will be constructed within. In addition, this road serves primarily as a service road and is not within the primary path of visitors to the site. The new field station would require aboveground power lines along KMC Road R-9 to provide electricity to the facility. Introduction of these powerlines will not alter views from KMC because the entire district has above ground power lines. Based on the siting of the building being tucked away within the existing vegetation, the colors chosen to purposefully blend it in with the natural surroundings, and its proposed location on the very perimeter of the camp, not visible from many locations throughout the camp, it is assessed to have no adverse effects to the historic district and cultural landscape.

The installation of the roundabout will have an adverse effect on the integrity of the Crater Rim Historic District because it introduces a road intersection configuration and width of road that is not compatible with the intersection configuration and entrance road width used during the historic district's period of significance.

To address the adverse effects on historic properties, a Programmatic Agreement between the National Park Service, U.S. Geological Survey; Hawai'i State Historic Preservation Officer; and the Advisory Council On Historic Preservation was developed. Mitigation measures developed for the Programmatic Agreement include updating the Crater Rim Historic District nomination, preparation of a Historic American Landscape Survey (HALS) of the Uēkahuna bluff area and conducting a Traditional Cultural Property (TCP) study and subsequent National Register nomination to document the ethnographic significance of HAVO, including the Kīlauea Summit and Caldera.

Ethnographic Resources

Uēkahuna bluff is an important area to many Native Hawaiians, as it is considered a sacred area and it is utilized for cultural practices. The bluff will be available for cultural practices such as ho'okupu (giving offerings) during the 2-year deconstruction and construction period. However, noise and visual effects to the area from the deconstruction of the existing buildings and repair and construction of the overlook may have impacts to the integrity of the setting as natural scenery and quiet solitude are sought after and valued during the cultural practices. The National Park Service will implement a project requirement that outdoor work activities shall be restricted to one hour after sunrise until one hour prior to sunset. These are common times, but not the only times that cultural practices occur in this area, therefore actions will minimize, but not avoid, adverse impacts to traditional practices in the area. However, effects will cease when the construction period ends. Long term, deconstruction of Uēkahuna bluff buildings will be beneficial since structures are considered inappropriate to Uēkahuna bluff as an ethnographic resource and detract from the sacred landscape.

Decommissioning and construction of the selected alternative will directly remove approximately 1.0 acres of wet montane forest. This is a reduction of 1.8 acres of wet montane forest that would have been removed as a result of the proposed action presented in the EA. Vegetation clearing will remove ethnographic resources as it will remove a section of a forested area and some individuals' sense of spiritual or heritage connection could be adversely affected by clearing and grading activities. The National Park Service will minimize tree removal and replant 'ōhi'a trees from locally sourced genetic materials, e.g. plant propagation through air layering and seed collection. These actions will minimize, but not avoid, adverse ethnographic impacts; impacts will persist long term (beyond completion of the project) until revegetation efforts are successful.

The environmental assessment found no significant adverse impacts to ethnographic resources. The modification of the selected alternative reduces impacts to ethnographic resources by reducing the amount of wet montane forest disturbed. The selected alternative will not impair ethnographic resources with implementation of the mitigation measures discussed above.

Conclusion

In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementation of the selected alternative. The NPS has determined that implementation of the selected alternative will not constitute an impairment of the resources or values of Hawai'i Volcanoes National Park. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the EA, comments provided by the public and others, and the professional judgment of the decision maker guided by the direction of NPS *Management Policies 2006*.

Appendix D:
2022 Programmatic Agreement Among the National Park
Service Hawai'i Volcanoes National Park, U.S. Geological
Survey, Hawai'i State Historic Preservation Officer, and the
Advisory Council On Historic Preservation.

PROGRAMMATIC AGREEMENT
AMONG THE
NATIONAL PARK SERVICE HAWAI'I VOLCANOES NATIONAL PARK; U.S.
GEOLOGICAL SURVEY; HAWAI'I STATE HISTORIC PRESERVATION OFFICER;
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION;
REGARDING
Disaster Recovery at Hawai'i Volcanoes National Park Post-2018

WHEREAS, in May 2018, the Hawai'i Volcanoes National Park (HAVO), administered by the National Park Service (NPS), and Kīlauea summit underwent a major change as magma drained from the chamber beneath Halema'uma'u crater, and the caldera began to collapse, triggering 60,000 earthquakes and clouds of rock and ash that did not cease until early August. Strong seismic activity continued through the summer and was primarily centered on the crater and significantly damaged buildings in the immediate vicinity on Uēkahuna Bluff, including Jaggar Museum (an NPS visitor center) and the Reginald T. Okamura (Okamura) Building and the adjacent Geochemistry Annex (Annex) building (both operated by the U.S. Geological Survey [USGS] Hawaiian Volcano Observatory [HVO] as research facilities), resulting in the current closure of the area; and

WHEREAS, the NPS proposes to address the damaged scientific facilities through the relocation of services and the demolition of damaged structures, which constitutes an undertaking subject to the requirements of Section 106 of the National Historic Preservation Act (NHPA) (54 United States Code 306108); and

WHEREAS, the elements of the project, which will all occur within the summit area of Hawai'i Volcanoes National Park, include 1) demolishing the damaged facilities (the Jaggar Museum, the Okamura building and the Annex building), installing an unimproved trail section along the caldera edge from the viewing platform to the north to connect back to the paved Crater Rim Trail (a contributing feature to the Crater Rim Historic District) just before the triangulation marker which will require removing an eight foot section of the 1986 viewing platform wall addition and repairing the viewing platform at the Jaggar Museum; 2) replacing the HVO research facilities with a new field station adjacent to the historic ball field at the Kilauea Military Camp (KMC); 3) realigning Crater Rim Drive (CRD) at the park entrance to follow a previous (pre-1963) alignment to improve visitor safety, with the addition of a new access road to the existing visitor center and the introduction of a roundabout; and 4) deconstructing the following three temporary buildings in the Resources Management (RM) complex: building 217 - the Vegetation Management office (built post-1978), building 321 - the turtle office (built post-1988), and B322 Resource Management Administration office (built post-1988); and

WHEREAS, the NPS and the USGS are each responsible for actions as part of the disaster recovery effort, with the USGS responsible for funding and building the new HVO field station and the NPS responsible for funding and building/deconstructing the remainder of the project,

and the USGS and the NPS agree that the NPS will be the lead agency for purposes of Section 106; and

WHEREAS, the NPS has determined that the undertaking may have an adverse effect on historic properties, including the Jaggar Museum and the Crater Rim Drive, both of which are contributing resources to the Crater Rim Historic District, TMK: (3) 9-9-001:001 Kapāpala, Ka‘ū, Hawai‘i; and

WHEREAS, the NPS has consulted with the Hawai‘i State Historic Preservation Officer (SHPO) to identify the area of potential effects (APE) and historic properties within the APE (Appendix C); and

WHEREAS, the NPS has invited the Advisory Council on Historic Preservation (ACHP) to participate in the development of this Agreement, and the ACHP has agreed to participate; and

WHEREAS, the NPS has invited the Historic Hawai‘i Foundation (HHF) to participate in the development of this Programmatic Agreement (Agreement), and HHF has agreed to participate as a Concurring Party; and

WHEREAS, the NPS sent the Office of Hawaiian Affairs (OHA) information regarding the original concepts on the proposed project in May 2020, but no response was received. Additional correspondence with OHA confirmed that they do not wish to participate in the development of the Agreement. OHA reviewed the PA draft and stated support for the Traditional Cultural Property (TCP) mitigation. An OHA representative participates in the regularly occurring Kūpuna consultation group meetings (Appendix B, Number 7) and reports any Section 106 concerns to the OHA compliance lead when determined necessary (the HAVO Kūpuna consultation group consists of Native Hawaiian individuals and select individuals with institutional knowledge of Hawai‘i Volcanoes National Park); and

WHEREAS, the NPS sent letters to additional Native Hawaiian Organizations (NHOs) on the U.S. Department of the Interior (DOI) List of Native Hawaiian Organizations, Native Hawaiian individuals, and the HAVO Kūpuna consultation group, providing the actions and alternatives being considered for the proposed action in May 2020. No response on the proposed alternatives were received from NHOs however; numerous Hawaiian individuals and the HAVO Kūpuna consultation group responded with feedback on initial concept development. The HAVO Kūpuna consultation group declined invitations to be consulting parties and participate in the PA; the NPS has and continues to engage the HAVO Kūpuna consultation group, share information, and receive feedback regarding this undertaking and the proposed mitigations during regularly occurring consultation meetings described in Appendix B, Number 7; and

WHEREAS, the NPS informed the general public through a document distributed in May 2020 that presented the actions and alternatives to be considered. The public also had an opportunity to comment on this Agreement through a posting on the NPS’ Planning, Environment and Public Comment (PEPC) website during the period of July 1 through July 31, 2022; and

WHEREAS, maps of the APE are provided in Appendix C. The APE includes park entry points, where the road will be widened and a vehicle calming feature introduced on CRD between the current entrance off of Highway 11 and the Kīlauea Visitor Center parking area (map 1-17.78 acres); the KMC ball field (map 2-1.56 acres) and its access point; the summit area of Jaggar Museum with its associated buildings—the Annex building and the newer Okamura building adjacent to the existing comfort station (map 3-approximately 2.4 acres of disturbance with buffer); and, finally, the Resources Management complex (map 4- approximately 0.36 acres). The total area of the APE is ~ 22.1 acres; and

WHEREAS, the NPS has determined that it is appropriate to develop a Programmatic Agreement (Agreement) in accordance with 36 Code of Federal Regulations (CFR) § 800.14(b), including 800.14(b)(1)(ii), which recognizes that a Programmatic Agreement may be used when effects on historic properties cannot be fully determined prior to approval of an undertaking; and

NOW, THEREFORE, the NPS, USGS, SHPO, and ACHP mutually agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

The NPS and USGS shall ensure that the following measures are carried out:

CONSULTING PARTIES

- I. In accordance with 36 CFR § 800.3(c)(3), should the NPS receive written requests from individuals and organizations to participate as Consulting Parties during the term of this Agreement, the NPS shall consider each request and, in consultation with the SHPO, identify additional Consulting Parties.
- II. The NPS will provide the Consulting Parties with the address and contact information for the individual/office within the NPS that will receive comments under this Agreement.
- III. The NPS will maintain a list of Consulting Party contacts and will provide this list to the SHPO and other Consulting Parties upon request and in its annual reporting under this Agreement.

MEASURES TO AVOID, MINIMIZE, OR MITIGATE ADVERSE EFFECTS ON HISTORIC PROPERTIES

The NPS will perform the following measures to avoid, minimize, and mitigate adverse effects on historic properties.

- I. Research and Documentation
 - A. National Register of Historic Places

The NPS shall complete an update and submit the following National Register of Historic Places (National Register) nomination:

- i. An updated Crater Rim Historic District nomination for listing in the National Register, to incorporate historic resources identified in the 2006 Crater Rim Historic District Cultural Landscape Inventory (CLI) report, the 2009 Hawai‘i Register of Historic Places listed Crater Rim Drive Historic District, and the 2015 draft Crater Rim Drive Historic District National Register nomination, and to reflect changed conditions as a result of the 2018 eruption and the Disaster Recovery project, including an evaluation of the park’s RM complex, and any changes subsequent to the original drafting of the CLI and National Register Nomination;
 1. The preparation of the Nomination will begin upon execution of this Agreement and shall be conducted by or under the direct supervision of individuals who meet the Secretary of the Interior’s (SOI) Professional Qualifications Standards for History, Historic Architecture, Historic Landscape Architecture, or Architectural History as outlined in the 1997 proposed changes to the Federal Register, vol. 62, 234, no. 119, p. 33708-33723.
 2. Within 2 years of the execution of this Agreement, the NPS shall provide copies of the draft Nomination to the SHPO, ACHP, and the Consulting Parties for a 60-calendar day review and comment period, subject to restrictions on sensitive information in accordance with NHPA Section 304.3. NPS shall take all comments into consideration, and within six months finalize the revised Nomination. Within six months of receiving the final draft the NPS shall submit the nomination for listing in the National Register of Historic Places in accordance with 36 CFR § 60. Subsequent to listing in the National Register the NPS will submit the nomination to the Historic Hawai‘i Review Board for listing in the Hawai‘i Register of Historic Places to replace the current Hawai‘i State listed Crater Rim Drive National Register. See Appendix F-1 for a schematic timeline of deliverables.

B. Traditional Cultural Property

- i. The NPS shall conduct a TCP study to document the ethnographic significance of HAVO, including the Kīlauea Summit and Caldera. The documentation shall focus on Pelehonuamea and her physical representations within the park. The NPS shall ensure that the TCP study shall be completed by personnel with expertise in Hawaiian culture, cultural ethnography, and experience in developing TCP studies in Hawai‘i. The TCP study will be used to inform the development of the TCP National Register Nomination described in I.B.ii. The TCP study shall compile existing historic data on the sacredness and traditional historical use of the park lands as tied to the journey of Pelehonuamea. It will also discuss the continued traditional use of the area in the modern day, including oral histories with Native Hawaiians associated with the site. NPS will include OHA in all of the Consulting Party document reviews and consultation opportunities for the TCP study and the TCP National Register nomination.

1. The TCP study will employ best practices in ethnographic research guided by NPS Director's Order-28 and National Register Bulletin 38.
 2. The first stage of the study is underway and includes the compilation of the ethnographic historic data pertaining to the physical representations of Pelehonuamea within the park. A draft of the results as well as an overview of the study scope and methodology that was developed with the HAVO Kūpuna consultation group will be provided to the Consulting parties and the Kūpuna within 30 days of the execution of the Agreement for a 60-day calendar review period.
 3. The study methods and the scope for the second stage of the project includes conducting oral history interviews. The interviews will be incorporated into the TCP study. The methodology and scope for the oral history interviews will be distributed along with the draft described in I.B.i.2 to the Consulting Parties within 30-days of the execution of the Agreement for a 60-calendar day review and comment period.
 4. The NPS will hold a status update meeting with the Consulting Parties and the personnel completing the TCP study within the 60-day review period described in I.B.i.2 above to discuss progress on the first stage and plans for the second stage of the study.
 5. The NPS shall take into consideration all comments received from the Consulting Party review. If revisions are required, the NPS will distribute revised proposed methods for the second stage of the study and provide all above parties an additional 30-calendar day review and comment period. The final scope and methodology will be provided to the Consulting Parties.
 6. The NPS will provide copies of the draft TCP study (including data gathered during the second stage of the study described in I.B.i.3) to the SHPO, ACHP, and the Consulting Parties within one year and six months of the execution of the Agreement for a 90-calendar day review and comment period.
 7. The NPS shall take into consideration all comments received from the Consulting Parties review, with discussions as needed, and finalize the TCP study within 120-calendar days of the Consulting Parties review and comment period.
 8. The NPS shall notify Consulting Parties and provide copies of the final TCP study to all of the Consulting Parties, NHOs and the HAVO Kūpuna consultation group within 30 days of the completion of the report; see appendix F-2 for a schematic timeline of deliverables.
- ii. Following the finalization of the TCP study report, NPS will begin preparing a draft

National Register nomination for all TCPs identified within HAVO based on the TCP study report findings. The nomination will follow the guidelines (see Bi1) in the National Register Bulletin 38.

1. The NPS will ensure that the TCP nomination will be prepared by or under the direct supervision of personnel with experience completing National Register nominations for properties in Hawai‘i and with experience and knowledge regarding Native Hawaiian culture.
2. The NPS shall provide copies of the draft the TCP National Register nomination to the SHPO, ACHP, and all Consulting Parties within 2 years of the finalization of the TCP study report for a 120-calendar day review and comment period, subject to restrictions on sensitive information in accordance with NHPA Section 304.
3. NPS shall take all comments into consideration, and within six months finalize the revised nomination. Within six months of receiving the final draft the NPS shall submit the nomination for listing in the National Register of Historic Places Review Board in accordance with 36 CFR § 60. Subsequent to listing in the National Register, the NPS will submit the nomination to the Historic Hawai‘i Places Review Board for listing on the Hawai‘i Register of Historic Places. See Appendix F-3 for a schematic timeline of deliverables.

C. Historic American Landscape Survey

Upon execution of this agreement, the NPS will begin documenting the existing landscape at the Kīlauea summit at Uēkahuna Bluff, including buildings and structures that will be removed from the area. This documentation will be included in a Historic American Landscapes Survey (HALS) documentation package that will meet NPS HALS documentation requirements. The NPS shall ensure that the HALS documentation will be completed by or under the direct supervision of personnel who meets the Secretary of Interior Standards for Historic Preservation Professional Qualifications in History, Historic Architecture, Historic Landscape Architecture, or Architectural History as outlined in the 1997 proposed changes to the Federal Register, vol. 62, 234 no. 119, p 33708-33723. The details of the history of landscape change, including building changes and the viewing platform at the summit, will be covered in the HALS documentation.

1. The NPS will provide a copy of the completed HALS documentation package to the Consulting Parties within 15 months of the execution of this Agreement for a 30-calendar day review and comment period.
2. The NPS will take into account any comments provided by the Consulting Parties within the review and comment period. NPS shall finalize the HALS documentation package within 18 months of the execution of this Agreement and will submit it to the Regional NPS Heritage Documentation Programs (HDP). The NPS shall notify the Consulting Parties of the report’s completion and provide copies of the final HALS documentation package to the Consulting Parties upon request.

3. The NPS shall not initiate demolition of infrastructure at the Uēkahuna Bluff until the Regional HDP concurs that the draft HALS documentation package is sufficient for demolition activities. The NPS will provide copies of the concurrence letter to the Consulting Parties. The NPS will submit the final HALS documentation package to the Regional HDP program within 6 months of that concurrence. Additionally, the NPS will provide copies of the final acceptance letter and final HALS documentation to SHPD via HICRIS Project Number 2021PR00143. See Appendix F-4 for timeline.
- D. The NPS will include interpretive material about the Jaggar Museum and its history on the park website, on the park app, and/or on site at the Jaggar Museum footprint located at the viewing platform. The NPS will develop the on-site interpretive plan in consultation with the HAVO Kūpuna consultation group. NPS shall ensure that a status update regarding the development of the interpretive plan for the Uēkahuna Bluff will be included in the annual summary report, specifically pertaining to how the plan will incorporate the Jaggar Museum history.

II. Project Review and Design Standards

A. Design Standards for New Construction

In keeping with the intent of the SOI's Standards for Rehabilitation (36 CFR § 67.7), the NPS and USGS shall ensure that new construction in historic districts is differentiated from old construction and is compatible in massing, size, scale, and architectural features to protect the historic integrity of the district and its environment. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic district and its environment would be unimpaired.

The NPS and USGS shall ensure that new construction and building design elements will follow the draft design documents that have been created for this project (see Appendix E) subject but not limited to subsequent changes if approved in accordance with stipulation II.B.2. This may include but not be limited to the façade of mortared stone building elements, horizontal wooden siding, wood-framed windows, and double-hung casement windows. Appendix D includes the material sample boards that reflect the materials chosen for the design standards.

B. Project Design Review

1. For the new construction, the NPS and USGS provided 60% design plans to the Consulting Parties on January 28, 2022. The NPS and USGS provided 90% design plans to the Consulting Parties on June 10, 2022. Consulting Parties had a 14-calendar day review and comment period for both the 60% and the 90% design plans. The material sample boards were provided to the Consulting Parties for review on May 17th, 2022. The NPS will provide the Consulting Parties the final drawings for their information.

2. The new construction will follow the material boards in Appendix D and the design drawings in Appendices E-1 and E-2 subject to any subsequent changes as described below. The NPS and USGS shall take all comments from the 90% review and comment period into consideration when finalizing the designs. The NPS and/or USGS will notify the Consulting Parties if there are substantive changes during the design development or construction such as those that affect siting, footprint, massing, materials, reuse of salvaged building materials, site plan, building orientation, substantive architectural detailing, and/or substantive change(s), the reason for the change, and any changed or additional effects on historic properties that may occur as a result of the change. NPS shall provide the revised design plans to the Consulting Parties. If the changes are expected to have no additional adverse effects, the NPS shall provide the revised design plans to the Consulting Parties for a 14-day calendar review and comment period. If the changes are likely to have an additional adverse effects the NPS shall provide the revised design plan to the Consulting Parties for a 30-day calendar review and comment period. NPS shall take into account any comments prior to approving changes. If NPS, USGS, or a Consulting Party identifies additional or expanded adverse effects as a result of the changes, NPS and/or USGS shall consult to resolve the additional effects, including considering design changes to avoid or minimize the effect.

C. Salvage and Reuse of Historic Materials

1. The NPS and USGS shall ensure that, to the extent that it is feasible to do so, the stone removed from the summit buildings will be used in new construction of the overlook area and the new USGS facility. The reuse of materials shall be identified in the design documents provided to Consulting Parties.
2. The NPS shall ensure that 1,023 cubic yards of the existing 2,150 cubic yards of berm material at the summit area is used to fill the Okamura Building site for the top several feet of fill. The crater end of the berm is to be used for approximately 1,023 cubic yards up to the location of the existing Radio Building and tower where 1,127 cubic yards of berm will remain to minimize the visibility of the water tank, Radio Building, and tower from various locations. The remaining portion of needed fill will come from sources found within the park that were left over from previous projects. The reuse of material shall be identified in the design documents provided to the Consulting Parties.
3. The NPS shall ensure that the landscape design and site plan for the modified viewing platform at the summit area will include paving and pattern changes to delineate the footprint and location of the former Jaggar Museum, the viewing platform at the summit area will include the footprint of the former Jaggar Museum.

D. Preservation and Potential Future Adaptive Reuse of Kīlauea Visitor Center

The NPS shall continue to use the 1941 Kīlauea Visitor Center Building as an active facility throughout the duration of this Agreement. The NPS will be considering options to replace the visitor service functions from the Jaggar Museum in the future, which may include reconfigurations of portions of the Kīlauea Visitor Center interior. Any alternate use of, changes to, or rehabilitation of this building will be subject to a future separate NHPA Section 106 consultation under 36 CFR 800.3-800.6.

E. Deconstruction of Three Buildings in the Resource Management Complex

The NPS proposes to deconstruct the following three temporary buildings in the Resources Management complex: building 217 - the Vegetation Management office (built post-1978), building 321 - the Turtle Program office (built post-1988), and B322 Resources Management Administration office (built post-1988). The Resources Management complex will be assessed for National Register eligibility in the Crater Rim Historic District National Register update. If the nomination, after review by the Consulting Parties, shows buildings 217-the Vegetation Management Office, building 321- the Turtle Program office and/or B322 Resources Management Administration office in the Resources Management area to be ineligible on their own or as non-contributing features of the larger complex, the deconstruction of the ineligible buildings can continue without further Section 106 review. If the nomination shows that the any of buildings or the larger complex are eligible, NPS will consult with the Consulting Parties under “Unanticipated Discoveries”, V., below, to determine appropriate mitigation measures.

UNANTICIPATED DISCOVERIES OR OTHER ACTIONS THAT ARE RELATED TO NEW CONSTRUCTION ACTIVITIES

I. Monitoring of Ground Disturbing Activities

- A. The NPS and USGS shall include the following provisions in construction contract stipulations for this project for the treatment of unanticipated archeological discoveries, including human remains, during deconstruction, excavation, new construction, or other ground-disturbing activities within the APE.
 - 1. In the event that a previously unidentified archeological resource(s) is discovered during project activities, the Qualified Archeological Monitor is responsible for notifying construction personnel and shall immediately halt all ground-disturbing activities in the area of the resource(s) and in the surrounding area (within 50 meters) where further subsurface remains can reasonably be expected to occur, and they shall immediately notify the NPS.
 - 2. A qualified Archeological Monitor that meets or is directly supervised by an individual that is qualified under the SOI Standards for Archeology as outlined in the 1983 Federal Register, vol. 48, no. 190 and has a minimum of two years of Hawaiian

archeology experience will complete the work. The monitor(s) will be available for approved work at the various construction sites, including, but not limited to, the Uēkahuna Bluff area, the construction site adjacent to Kilauea Military Camp; and the construction site associated with the changes to the Crater Rim Drive entry, including the realignment, widening, creation of a spur road into the existing parking area and a roundabout as approved; and the building deconstruction in the Resources Management complex. NPS shall conduct archeological monitoring as needed for ground disturbing activities in these areas including, but not limited, to the following:

- Revegetation
- Soil preparation
- Utility installation
- Foundation excavation and filling (Okamura Building)
- Road/parking/site flatwork grading and subgrade preparation

It is not expected for any monitoring to be required for construction staging areas as they have been designated on previously disturbed lands or within existing parking areas (see Appendix C-APE maps for staging area locations).

II. Post Construction Reports

The NPS shall ensure that each of the projects will have an archaeological monitoring report that will be completed within 90 calendar days of the completion of all construction activity requiring archaeological monitoring. The NPS will submit a copy of each report to the SHPO for its library. Any findings of archeological resources/sites will be given a State Inventory of Historic Places (SIHP) number, the boundaries determined in consultation between NPS and SHPD. Sub-meter accuracy GPS equipment will be utilized during archeological monitoring for data collection.

III. Inadvertent Discoveries

In the event that human remains, funerary objects, sacred objects, and/or objects of cultural patrimony are encountered during the course of activities associated with the undertaking, the NPS shall ensure that they are treated with respect and in a manner consistent with the provisions of the Native American Graves Protection and Repatriation Act (25 USC 3001).

IV. Vegetation Managment

A. Uēkahuna Bluff

The HAVO Natural Resource Management (NRM) staff will follow the established HAVO Seed Collecting, Propagation and Outplanting Guidelines (HAVO, 2014) for the re-vegetation of the area at the Uēkahuna Bluff in the location where the buildings will be removed. These guidelines cover seed collection, propagation and

planting. Disturbed sites in the park require revegetation which include abandoned quarries and roads, as well as disturbed construction sites. Native shrubs that are found growing in the region will be propagated in park greenhouses and installed at the site to revegetate the area and blend in and restore the natural landscape. Naturally occurring native species recruitment from seed will also occur in the area. Invasive plant control will follow using the Standard Operating Procedure (SOP) and the established principles in the park's Categorical Exclusion for Maintaining Special Ecological Areas which has undergone Section 106 review. It is common for invasive plants to grow after there has been ground disturbance therefore initial measures will ensure that invasive plants do not become established until the native plants can grow successfully. The goal is to re-establish the sparse low growing native shrubs and trees that grow in the area to become a part of the natural landscape. NRM staff will take part in the re-vegetation and invasive plant removal until success is achieved and the natural ecosystem is restored. The vegetation SOP's and guideline documents referred to above can be provided upon request to the Consulting Parties.

- B. For the new USGS facility the NPS will maintain the vegetated buffer between the USGS area and the surrounding historic district, and, in the event that vegetation in the buffer dies, the NPS will replace them with native species that are the same or of similar type.

V. Future Adverse Effects

During the implementation of this project, the NPS shall make every reasonable effort to avoid any additional adverse effects on historic properties (i.e., effects not described at the time of the Agreement's execution). If the NPS determines that additional adverse effects will occur, the NPS shall consult with the consulting parties to develop a treatment plan to minimize and mitigate adverse effects on the historic property. The NPS shall implement the treatment plan upon written concurrence from SHPD on the sufficiency of the plan.

DURATION

This Agreement will expire when all stipulations under this agreement are fulfilled or ten (10) years from the date of its execution, whichever is sooner. Prior to such time, the NPS may consult with the other Signatories to reconsider the terms of the Agreement and amend it in accordance with Stipulation VII below.

MONITORING AND REPORTING

Each year following the execution of this Agreement until it expires or is terminated, the NPS shall provide all parties to this Agreement a summary report describing work undertaken pursuant to its terms. Such report shall be provided no later than the 30th of each June and shall include the status of NPS and USGS design and construction projects, maps of areas which have undergone the proposed changes under this Agreement, the status of implementation of stipulations, the status of interpretive measures developed, and any scheduling changes

proposed, any problems encountered, any disputes and objections received in the NPS's and/or USGS's efforts to carry out the terms of this Agreement, and any amendments proposed or executed. NPS will use electronic submission measures such as e-mail when possible and to SHPD via HICRIS, Project Number 2021PR00143 when possible.

DISPUTE RESOLUTION

Should any Signatory or Concurring Party to this Agreement object at any time to any actions proposed or the manner in which the terms of this Agreement are implemented, the NPS and USGS (as applicable) shall consult with such party to resolve the objection. Should any objections be raised about the new USGS building during its construction, the USGS will cooperate with the NPS to resolve the objection. The NPS will notify the other Consulting Parties of the objection and invite them to participate in consultation with the objecting party and the NPS and/or USGS to resolve the objection. If the NPS and/or USGS determines that such objection cannot be resolved, the NPS will:

1. Forward all documentation relevant to the dispute, including the NPS's and/or USGS's proposed resolution, to the ACHP. The ACHP shall provide the NPS with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the NPS and/or USGS shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, Signatories and Concurring Parties, and provide them with a copy of this written response. The NPS and/or USGS will then proceed according to its final decision.
2. If the ACHP does not provide its advice regarding the dispute within the thirty (30)-day time period, the NPS and/or USGS may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the NPS shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and Concurring Parties to the Agreement and provide them and the ACHP with a copy of such written response.
3. The NPS and USGS's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.

AMENDMENTS

This Agreement may be amended when such an amendment is agreed to in writing by all Signatories.

1. Any Signatory to this Agreement may request that it be amended by informing the NPS in writing of the reason for the request and the proposed amendment language, whereupon the NPS shall inform the other Signatories and Concurring Parties to the Agreement and request their views concerning the proposed amendment. The amendment will be effective on the date a copy signed by all Signatories to the Agreement is filed with the ACHP. The NPS will notify all Concurring Parties of the amendment execution.

2. If any Signatory to this Agreement determines that the terms will not or cannot be carried out, that party shall initiate consultation with the NPS and other Signatories to develop an amendment pursuant to previous paragraph. If within 30 calendar days (or another time period agreed upon by all Signatories to the Agreement) an amendment cannot be reached, any Signatory may terminate the Agreement upon written notification to the other Signatories. The NPS will notify all Concurring Parties of termination.
3. In the event this Agreement is terminated, and prior to work continuing on the Project, the NPS must either (a) execute a Programmatic Agreement or Memorandum of Agreement pursuant to 36 CFR § 800.6(c)(8) or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. NPS will notify all Signatories and Concurring Parties to this Agreement as to the course of action it will pursue.

TERMINATION

If any signatory to this Agreement determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation VIII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the Agreement upon written notification to the other signatories.

Once the Agreement is terminated, and prior to work continuing on the undertaking, the NPS must either (a) execute a Memorandum of Agreement pursuant to 36 CFR § 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 § CFR 800.7. The NPS shall notify the Signatories as to the course of action it will pursue.

ANTI-DEFICIENCY ACT

All actions taken by the NPS in accordance with this Agreement are subject to the availability of appropriated funds, and nothing in this Agreement shall be interpreted as constituting a violation of the Anti-Deficiency Act (31 USC 1341). The NPS will make reasonable and good faith efforts to secure the necessary funds to implement this Agreement in its entirety. If compliance with the Anti-Deficiency Act alters or impairs the NPS's ability to implement the stipulations of this Agreement, the NPS will consult in accordance with the amendment and termination procedures found in Stipulations VIII and IX of this agreement.

This Agreement shall become effective on the date the last signatory signs. Execution of this Agreement by the NPS, USGS, SHPO, and the ACHP and implementation of its terms evidence that the NPS has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

SIGNATORIES:

Hawai'i Volcanoes National Park

RHONDA LOH Digitally signed by RHONDA
LOH
Date: 2022.10.07 14:44:42
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Date

Rhonda Loh, Superintendent

Hawai'i State Deputy Historic Preservation Officer

Alan Downer

Date Oct 13, 2022

Alan S. Downer, PhD, SHPD Administrator

Advisory Council on Historic Preservation:

A handwritten signature in dark ink, appearing to read 'Reid Nelson', with a long horizontal flourish extending to the right.

Date: 11.15.2022

Reid Nelson, Executive Director

United States Geological Survey

MARTIN SMITH

Digitally signed by MARTIN
SMITH

Date: 2022.10.07 20:33:23 -05'00'

Date

Martin Smith, AIA, Chief, Facilities Project Management and Support Branch

CONCURRING PARTIES:

Historic Hawai'i Foundation



Date 11.3.2022

Kiersten Faulkner, Executive Director

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Appendix A

Consultation

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1. Civic Engagement – May 15 – June 15, 2020; Summary document completed July 2020, sent to OHA, Kūpuna consultation group, and general public, soliciting feedback on concept development
2. Hawai‘i Volcanoes NP (HAVO) to SHPD Hawai‘i – May 2020
3. HAVO second letter to SHPD Hawai‘i – September 15, 2020
4. HAVO and SHPD Hawai‘i (phone call) - October 15, 2020
5. SHPD Hawai‘i – October 14, 2020 (rec’d response written) NPS follow up on this letter December 2020)
6. HAVO and Kūpuna Consultation Group (NHO’s and interested parties) – letter sent October 30, 2020 soliciting feedback on mitigations (discussed the issue of the architectural elements at the summit buildings and received one suggestion from one Kūpuna to bury in place the lower floor of the Okamura Building).
7. HAVO and Kūpuna Consultation Group (includes OHA rep) meeting overview– 11/12/2020, the park provided an update to the park’s Kūpuna consultation group regarding Disaster Recovery planning, 12/20/2020 the park provided information regarding Disaster Recovery project and went over the preliminary mitigation list (no comments from consultation individuals), 2/12/21 the park discussed the Disaster Recovery project, new VC siting, and exhibit planning for the new Visitor Center, 4/9/21 Disaster Recovery project was discussed and mitigations for the project were discussed including the TCP, 8/13/21 new Visitor Center exhibit discussed, 9/30/21 new Visitor Center exhibit discussed and TCP, 11/19/21 TCP presentation, 1/14/22 TCP discussed, 2/25/2022 Disaster Recovery project discussed, story 5/7/21 TCP discussed, 5/13/22 discussed Disaster Recovery project, 6/23/22 discussed the new Visitor Center exhibit, 6/30/22 Disaster Recovery discussed, new VC siting and design, 7/15/22 discussed new VC siting
8. HAVO - consulting with NPS – (December 17, 2020) Pacific West Region staff on HABS/HALS documentation as mitigation.
9. HAVO – January consulting with SHPD, Historic Hawai‘i Foundation, ACHP and NTHP – re project, APE and proposed Mitigations.
10. HAVO – Teams call consultation on the following dates with individuals identified. All meetings were recorded. Recordings are on file with NPS. Participants varied but included the following: HI-SHPD, Historic Hawai‘i Foundation, Advisory Council for Historic Preservation, USGS -HVO, (Contractors: Architects Hawaii Ltd, Otak, Mason Architects), NPS-DSC, NPS-PWR, NPS-HAVO:
11. April 8, 2021 – topic(s) - Presentation by Brian Heitman (Denver Service Center Project Manager) and Rhonda Loh (Superintendent at Hawai‘i Volcanoes National Park) on the concepts as developed between May 2020 and April 2021.
 - a. Cultural resources within the APE
 - b. Mitigation Table of cultural resources and effects
 - c. Programmatic Agreement process
12. April 21, 2021 – USGS, Martin Smith and Architects Hawai‘i Ltd. presented draft building design for group.
 - a. NPS went through the Mitigation Table and presented each cultural resource identified on the table.
 - b. Programmatic Agreement process

13. May 12, 2021 – Continuation of Mitigation Table items.
 - a. June 02, 2021 – PWR presented information on HALS work in general and more specifically the discussion focused on the summit area HALS work to be carried out before buildings are removed.
 - b. HHF discussion to include design elements for all new construction within the specific documented historic districts within the summit area.
 - c. Contractor for NPS – Otak presented ideas on buildings at the summit and for KVC to the group.
14. June 23, 2021 – Discussion of Traditional Cultural Properties with NPS-PWR Jason Lyon (Cultural Anthropologist).
15. No meetings between July 6 and August 17.
16. August 18, 2021 – Continued discussion on the Traditional Cultural Properties focused on Pelehonuamea.
17. September 8, 2021 - Justin DeSantis NPS-DSC presented preliminary plans for the road realignment and roundabout near entrance station.
18. September 29, 2021, consultation meeting with HHF, SHPD, USGS, ACHP and park staff to discuss mitigations to be included in the PA.
19. November 4, 2021, letters sent to HHF, SHPD, USGS, and ACHP with the draft PA for review, comments due by December 3, 2021.
20. November 10, consultation meeting with HHF, SHPD, ACHP, Otak, Mason Architects, and NPS including Sarah Killinger, PWR Regional 106 Coordinator. Topics covered include status update on TCP discussion with Kūpuna and discussion of preliminary comments for the draft PA.
21. November 10, 2021, Laura Carter-Schuster retired. Summer Roper Todd will be acting CRM lead and Section 106 coordinator for the next four months (November, 2021-February 2022).
22. December 7, 2021, consultation meeting with HHF, SHPD, Otak. ACHP could not attend. The meeting included an update on the TCP presentation to the park's Kūpuna consultation Group, a discussion of the Draft PA comments, and Otak presented the latest Schematic Designs for the building deconstruction and changes at Uekahuna, the designs for the new Visitor Center, and the Crater Rim Drive realignment design.
23. January 12, 2022, consultation meeting with HHF, SHPD, Otak. ACHP could not attend. The meeting included a schematic design presentation from USGS of the new HVO facility that will be built near the KMC ball field. There was also a status check on the draft PA comments. SHPD has provided comments and NPS is waiting to hear from HHF and ACHP. The park agreed to send 60% Draft Design Documents out to the consulting parties of the road realignment, the USGS building, the new Visitor Center and the changes at the Bluff. This was determined to be the last meeting unless it was decided in the future that more would be needed.
24. February 26, 2022, 60% draft Design Documents sent out to HHF, SHPD, ACHP and USGS for review and comment.
25. March 31, 2022 the second draft of the PA was sent to SHPD, ACHP, USGS, and HHF for review and comment.
26. May 17, 2022, the material sample boards were sent SHPD, HHF, USGS and HHF for comment and review.
27. June 10, 2022, the 90% draft Design Documents sent out to HHF. SHPD, ACHP and

USGS for review and comment.

28. June 24, 2022, HAVO site visit with Kiersten Faulkner of HHF.
29. NHPA Evaluations of Effects sent to SHPD, June 27, 2022.
30. July 1, 2022 draft 3 of the Programmatic Agreement was sent to ACHP, HHF, USGS, and SHPD.
31. August 1 and August 10, 2022, follow up phone call and email with OHA re-confirmed that they decline an invitation to be a consulting party for the PA. They are in support of the TCP and will continue to send an OHA rep to the Kūpuna consultation meetings.
32. August 19, 2022 phone call with HHF with project updates
33. August 15, 2022, phone call with SHPD with project updates
34. August 16, phone call with ACHP with project updates
35. August 22, 2022, Fourth draft of Agreement sent to Consulting parties
36. September 2, 2022, updated Assessment of Effects sent to Consulting Parties
37. September 6, 2022, Microsoft Teams meeting with ACHP, HHF, SHPD and NPS
38. September 7, 2022 Final draft of the Agreement sent to Consulting Parties

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Appendix B

Background

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Beginning in May 2018, the park and Kīlauea summit underwent a major change as magma drained from the chamber beneath Halema‘uma‘u crater, and the caldera began to collapse, triggering 60,000 earthquakes and clouds of rock and ash that did not cease until early August. Strong seismic activity continued through the summer and was primarily centered near the crater, and significantly impacted buildings in the immediate vicinity on Uēkahuna Bluff, including Jaggar Museum (a visitor center) and Reginald T. Okamura (Okamura) building of the USGS Hawaiian Volcano Observatory (HVO) facility, resulting in the closure of the area.

An initial post-disaster assessment conducted in October 2018 found that significant investment would be necessary to make Jaggar Museum and Okamura building safe to occupy and operational and that such investments would be compromised by continued ground movement in the area. The Jaggar/HVO complex is surrounded by cracks and active faults, and the area continues to subside on the crater side due to the caldera collapse, undermining slope stability and the building foundations.

Even when the Jaggar Museum was operational, the existing Kīlauea Visitor Center (KVC) building was inadequate for current visitation due to its small size and configuration. The historic building contains both NPS administration offices and visitor use spaces. The visitor use spaces were not designed to accommodate the current level of visitation. The exhibits are in disrepair and detract from the visitor experience. The closing of Uēkahuna Bluff, including Jaggar Museum, has exacerbated the overcrowding of the facility by concentrating all visitor contact in one location instead of the previous two facilities. The overcrowding has impacted the visitor circulation space to the point where visitors cannot easily approach the reception desk, negotiate between exhibits, or navigate through the lanai and nonprofit partner’s park store. It has been identified that the current Visitor Center facility is inadequate for current levels of visitation and the park will look at options in the future of how to address this need.

The USGS damage to and loss of use of the HVO-occupied Okamura building and the Geochemical building (Annex) at Uēkahuna Bluff has forced HVO to relocate most of its personnel and equipment to Hilo and other locations. Critical radio and telemetry infrastructure remain intact and will continue to function near the site of the Okamura building at the summit. However, it has been determined that a field station to support operations within the park will be constructed in a more stable area. This facility will house HVO and by consolidating agency efforts to reduce their footprint in the park, staff from the Pacific Island Ecosystems Research Center - Kīlauea Field Station (PIERC-KFS) will work also out of the new facility. The shared facility will provide HVO staff on-site space when they are conducting fieldwork and or crisis response activities in the Kīlauea summit area.

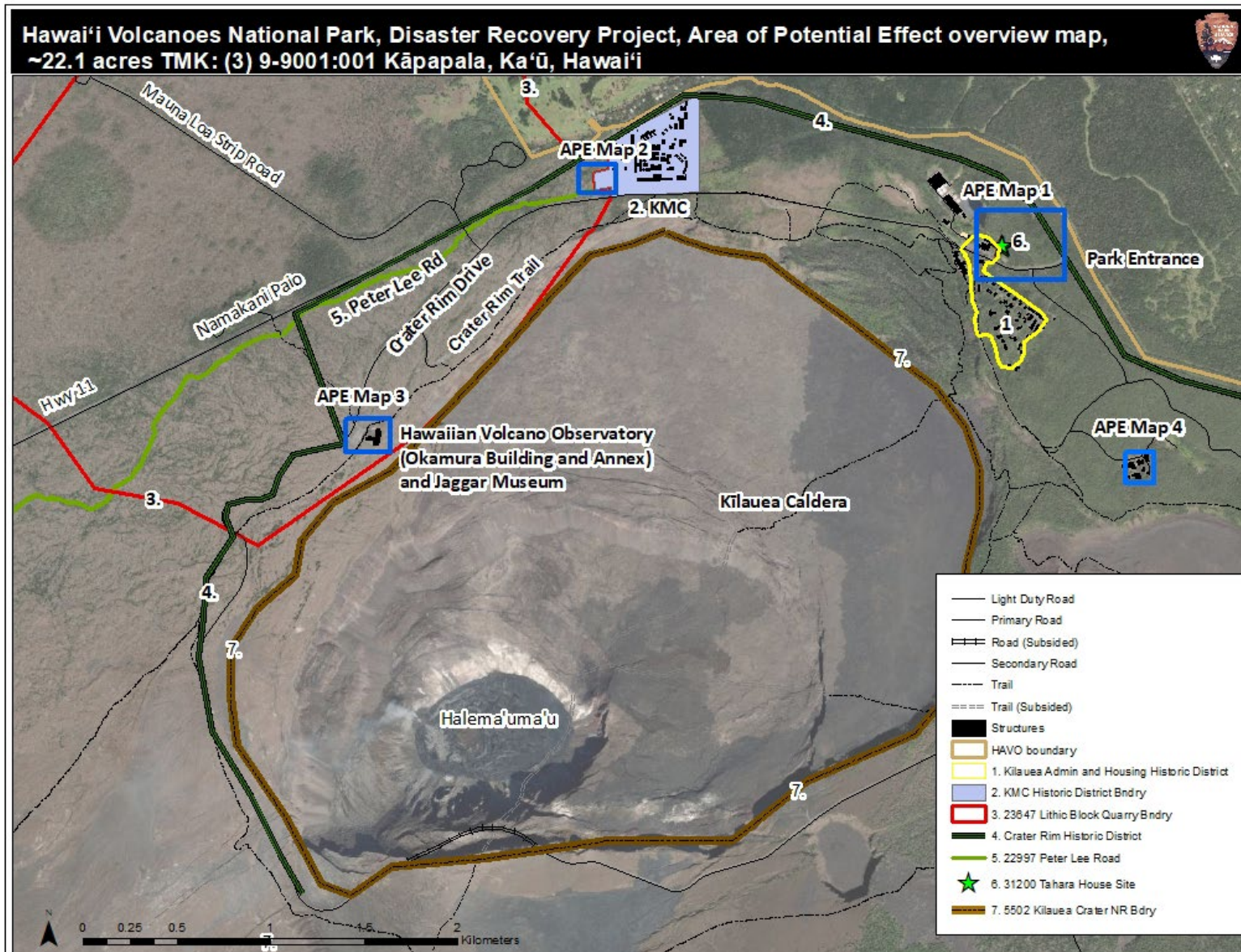
Due to the summit eruptions events, the existing access road and available parking creates congestion and parking issues. The mix of vehicles and pedestrian safety at the summit facilities needs to be addressed. Consequently, improvements to the park entrance have been identified and included in this project. The proposed changes to the entry, include an additional lane, a new access to the proposed new parking area in addition to a roundabout to be constructed tied to a new road through the forested areas. These changes are necessary and to provide safe access and exit within an often-congested section of the Crater Rim Drive entry road.

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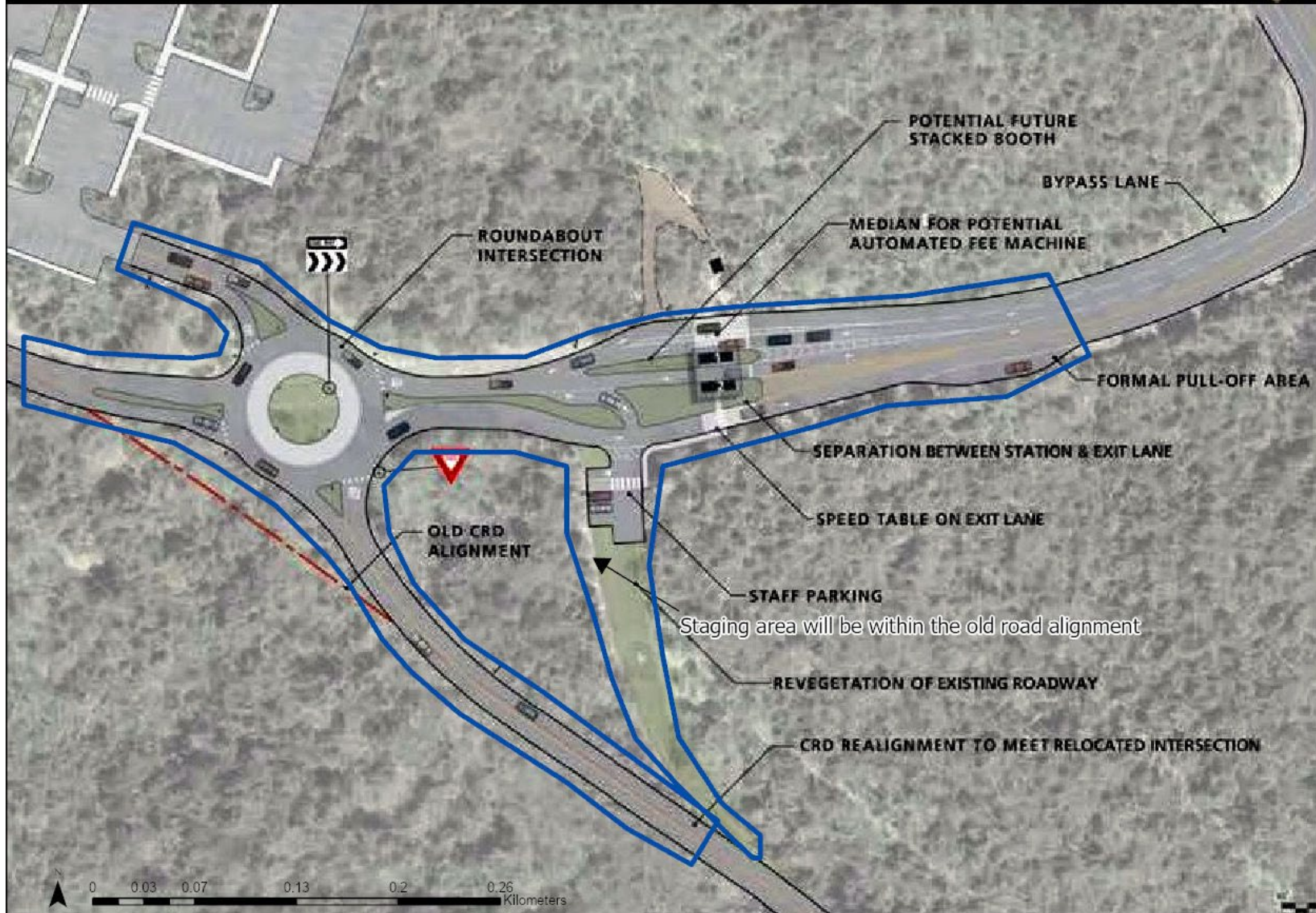
Appendix C

APE Maps

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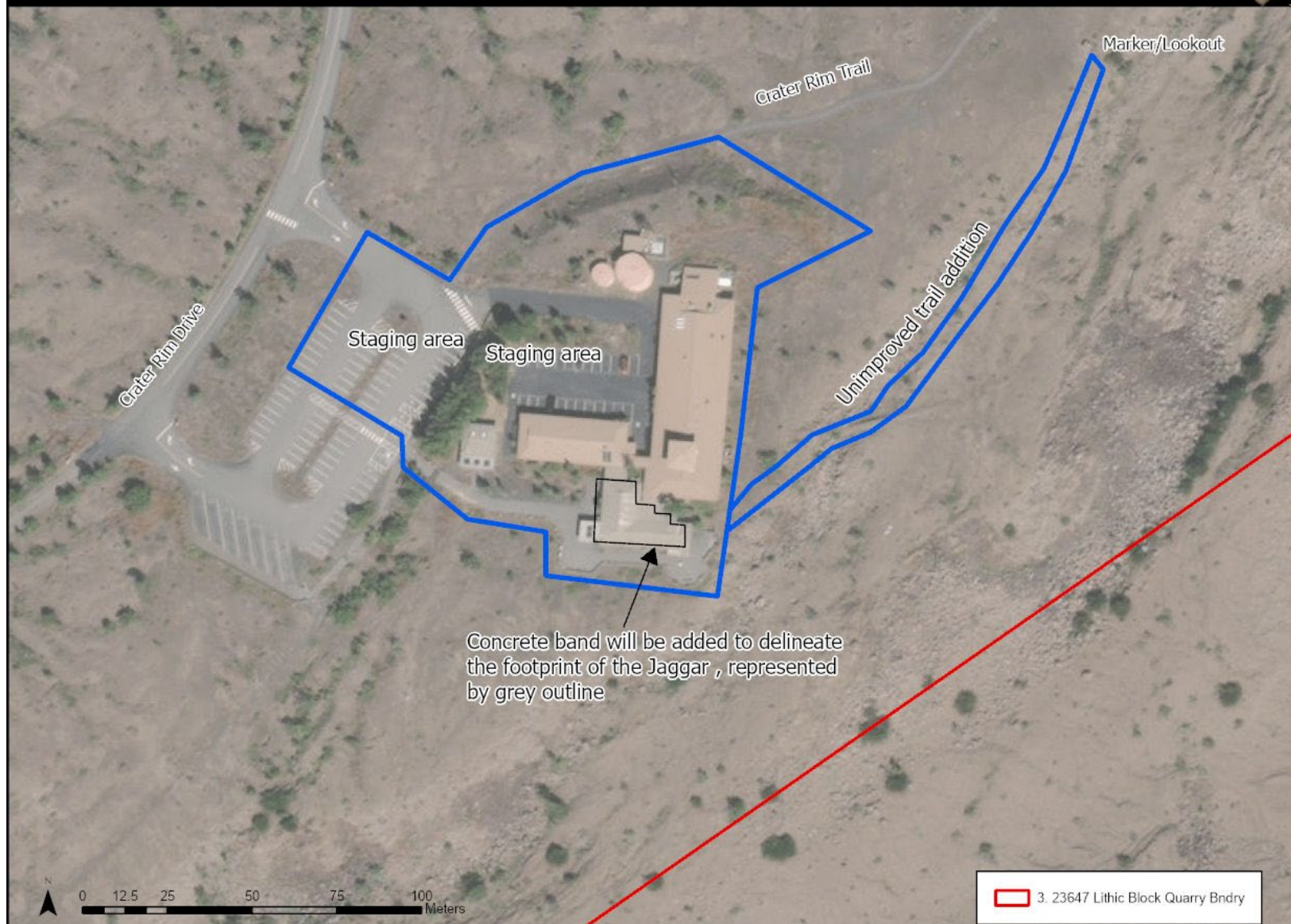
Hawai'i Volcanoes National Park, Disaster Recovery Project, Area of Potential Effect, Map 1, APE outlined in blue, 17.78 acres, Crater Rim Drive realignment. TMK: (3) 9-9001:001 Kapāpala, Ka'ū, Hawai'i



Hawai'i Volcanoes National Park, Disaster Recovery Project, Area of Potential Effect, Map 2, APE outlined in blue, 1.56 acres, new USGS facility near the Kilauea Military Camp ballfield. TMK: (3) 9-9001:001 Kapāpala, Ka'ū, Hawai'i.



Hawai'i Volcanoes National Park, Disaster Recovery Project, Area of Potential Effect, Map 3, APE outlined in blue, 3.41 acres, Uēkahuna Bluff, demolition of the Okamura Building, the Annex and the Jaggar Museum. TMK: (3) 9-9001:001 Kapāpala, Ka'ū, Hawai'i

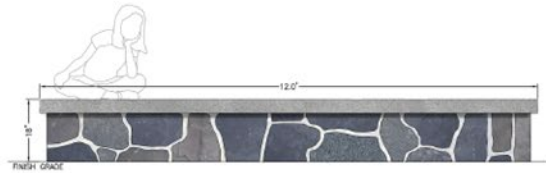




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Appendix D

Material Boards



BENCH BASE - STONE
USING STONE SALVAGED FROM THE JAGGAR MUSEUM



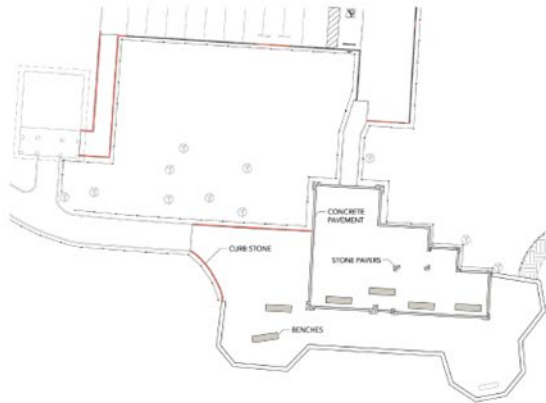
PAVERS - STONE
USING STONE SALVAGED FROM THE JAGGAR MUSEUM
SMOOTHER STONES WOULD BE USED FOR PAVERS TO PROVIDE AN ACCESSIBLE SURFACE WITH VERTICAL CHANGES IN SURFACE LEVEL NO GREATER AN 1/4"



STONE BENCHES AND PAVERS WILL MATCH PATTERN OF JAGGAR MUSEUM



BENCH CAP - CONCRETE
BENCHES WILL HAVE A CONCRETE CAP, WITH A LIGHT TO MEDIUM SANDBLASTED FINISH



CONCRETE PAVEMENT - EXPOSED AGGREGATE CONCRETE
FOOTPRINT OF JAGGAR MUSEUM WILL MATCH EXISTING PEDESTRIAN PAVEMENT ON SITE



CURB - STONE
CURB STONE WILL BE SALVAGED TO BE REUSED ON SITE

EXTERIOR MATERIALS - HARDSCAPE | UĒKAHUNA VISITOR USE FACILITIES

HAVO DISASTER RECOVERY
HAWAII VOLCANOES NATIONAL PARK

MAY 2022



TRUCK APRON - STAMPED CONCRETE



Tamarock Masonry - Hawai'i
Example of color only

STAMPED CONCRETE - COLOR
DARK GRAY INTEGRAL COLOR WITH BROWNS USED FOR
ACCENT AND SEALANT COLOR



Tamarock Masonry - Hawai'i
Example of texture only

STAMPED CONCRETE - TEXTURE
STAMPED TEXTURE USING A COMBINATION OF STAMPS TO
AVOID THE APPEARANCE OF A REPEATING PATTERN

EXTERIOR MATERIALS - HARDSCAPE | ENTRANCE

HAVO DISASTER RECOVERY
HAWAI'I VOLCANOES NATIONAL PARK



CURB - STONE
CURB STONE WILL BE SALVAGED TO BE REUSED ON SITE



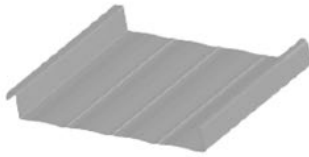
CURB - CONCRETE
MATCH EXISTING CONCRETE CURB ON SITE IN TEXTURE, COLOR, AND USE
OF SECTIONS WITH MORTAR JOINTS

MAY 2022



STANDING SEAM METAL ROOF

ROOF PROFILE
MBCI BATTENLOK HS WITH PENCIL RIBS



MBCI
TUNDRA FINISH



VERTICAL FINS

ARCADIA
ALUMINUM FINIS
DURANAR COCOA BEAN



BOARD AND BATTEN SIDING

WOOD GRAIN TEXTURE



FINISH PAINT
BENJAMIN MOORE
VAN BUREN BROWN HC-70



WOOD GRAIN SOFFIT

ARMSTRONG METALWORKS
LINEAR SYNCHRO
STANDARD CEILING PLANKS
SMOOTH TEXTURE



FINISH COLOR
GINGER



GLAZING & WINDOW MULLIONS

ARCADIA
ALUMINUM MULLIONS
ANODIZED BLACK AB-8

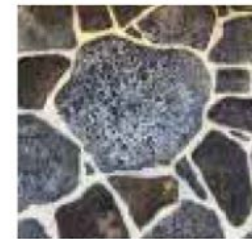


VITRO
SOLARSPAN 90 (2) ACUTY + ACUTY
52% VLT
.29 UV
.23 SHGC



LAVA ROCK WALL

STONE COLOR & TYPE: MOSTLY BLACK AND GRAY WITH SURFACE BLACK PAHOEHOE MIXED IN
STONE TEXTURE: VARIABLE FROM SMOOTH TO VARYING POROSITY
STONE SIZE: VARIOUS SIZES
MORTAR COLOR & TEXTURE: USE PARK MORTAR RECIPE
MORTAR JOINTS: RECESSED JOINTS (RAKED OR CONCAVE) APPROX. 1/4 INCH





OHIA ENTRY POSTS
SALVAGED FROM EXISTING
TREES ON PROJECT SITE









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Appendix E

Design Drawings

Due to file size, Appendix E-1 and E-2 design drawings attached separately

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Appendix F

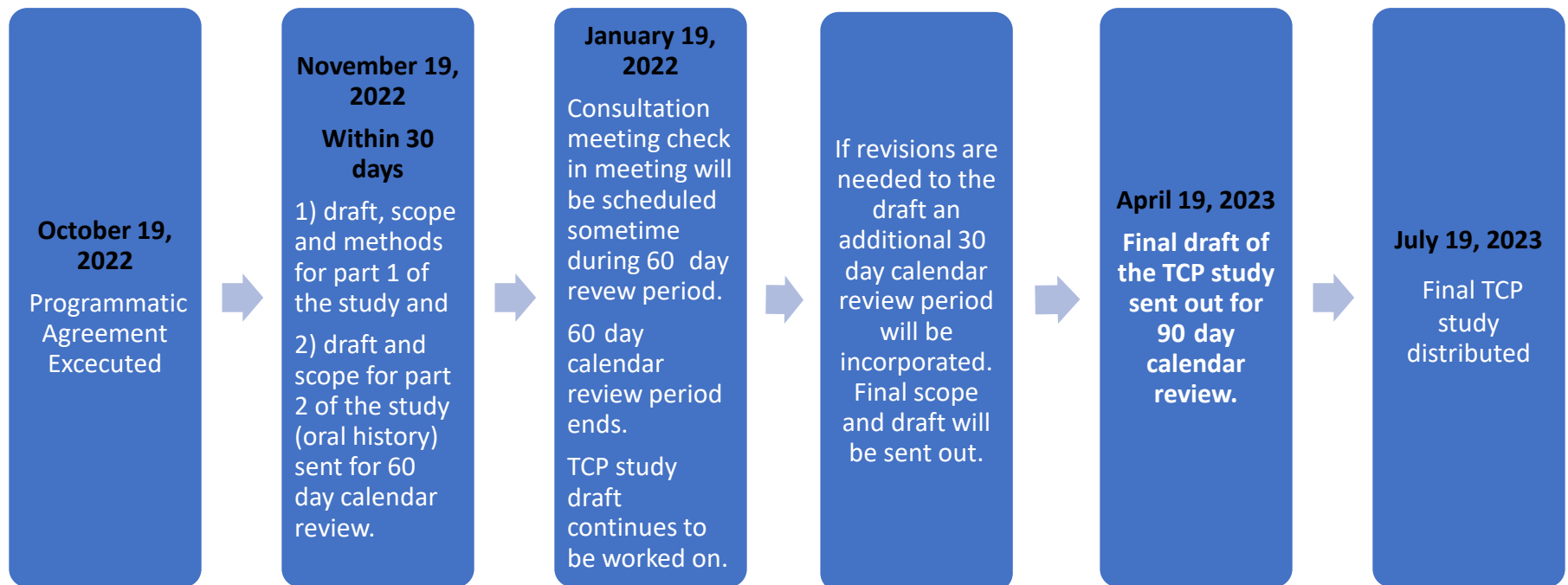
Mitigation Schematic Timelines

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F-1. Crater Rim Drive National Register Nomination schematic timeline



F-2. Traditional Cultural Property Study schematic timeline



F-3. Traditional Cultural Property National Register nomination schematic timeline.



F-4. Historic American Landscape Survey documentation schematic timeline.

