

Pu'uhonua o Honaunau National Historical Park Remove and Replace Park Maintenance Facilities



Environmental Assessment

May 2023

Contents

- 1.0 Purpose and Need 1-1
 - 1.1 Introduction 1-1
 - 1.2 Purpose and Need for the Project 1-1
 - 1.3 Project Objectives 1-4
- 2.0 Alternatives 2-1
 - 2.1 Introduction 2-1
 - 2.2 Alternative A: Makai Site (Proposed Action/Preferred Alternative) 2-2
 - 2.2.1 New Construction and Demolition 2-2
 - 2.2.2 Utility Improvements 2-5
 - 2.2.3 Access Roads 2-5
 - 2.2.4 Construction Methodology 2-6
 - 2.3 Alternative B: Mauka Site 2-6
 - 2.3.1 New Construction and Demolition 2-7
 - 2.3.2 Utility Improvements 2-9
 - 2.3.3 Construction Methodology 2-9
 - 2.4 Actions Common to Both Action Alternatives 2-10
 - 2.5 Alternative C: No Action 2-10
 - 2.6 Alternatives Considered But Dismissed 2-10
- 3.0 Affected Environment and Environmental Consequences 3-1
 - 3.1 Issues Carried Forward for Detailed Analysis 3-2
 - 3.2 Biological Species of Special Concern or Their Habitat 3-3
 - 3.2.1 Endangered Species Act 3-3
 - 3.2.2 Migratory Bird Treaty Act (MBTA) 3-3
 - 3.2.3 Existing Conditions 3-3
 - 3.2.4 Environmental Consequences 3-5
 - 3.3 Cultural Resources 3-7
 - 3.3.1 National Historic Preservation Act 3-7
 - 3.3.2 Archeological Resources 3-7
 - 3.3.3 Cultural Landscapes 3-10
 - 3.3.4 Native Hawaiian Concerns 3-12
 - 3.4 Transportation Facilities 3-14
 - 3.4.1 Existing Conditions 3-14
 - 3.4.2 Environmental Consequences 3-16

- 3.5 Comparison of Alternatives 3-18
- 4.0 Public Involvement 4-1
 - 4.1 Pre-NEPA Civic Engagement 4-1
 - 4.2 NEPA Scoping 4-1
 - 4.3 EA Public Review 4-1
- 5.0 References 5-1

Figures and Tables

- Figure 1-1 Pu'uhonua o Hōnaunau National Historical Park Location Map 1-2
- Figure 1-2 Existing Maintenance and Resource Management Facilities Location and Typical Building Construction 1-3
- Figure 2-1 Potential Facility Construction Sites Map 2-1
- Figure 2-2 Site 1 Existing Washrack and Wastewater Treatment Facilities 2-3
- Figure 2-3 Alternative A: Makai (Preferred Alternative) Preliminary Site Plan 2-4
- Figure 2-4 Site 2 Mauka Parcel 2-7
- Figure 2-5 Alternative B: Mauka Preliminary Site Plan 2-8
- Table 2-1Preliminary Building Program2-2
- Table 2-2 Alternatives Considered But Dismissed 2-11
- Table 3-1 Cumulative Impacts Project List 3-1
- Table 3-2Issues Carried Forward for Detailed Analysis3-2
- Table 3-3 Alternatives Comparison Matrix 3-18

Appendices

- Appendix A Mitigation Measures
- Appendix B Issues and Impact Topics Dismissed from Further Analysis
- Appendix C Visual Impact Assessment

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

Pu'uhonua o Hōnaunau National Historical Park ("Park") proposes to relocate existing maintenance and resource management functions from their current location in substandard facilities near the coastline to new facilities at a suitable location. The existing facilities are no longer physically adequate to meet current Park needs and their location in an area known to contain archeological resources does not support the Park's fundamental resources and values as expressed in its cultural landscape.

Authorized by the United States Congress in 1955, the Park (Figure 1-1) was formally established as part of the National Park System in 1961, and is managed by the National Park Service (NPS). The Park (then consisting of 182 acres) was listed on the National Register of Historic Places (NRHP) in 1966 as the "City of Refuge National Historic Park" and re-listed on the NRHP in 1974 as a historic district in recognition as one of the most important archeological and historical complexes in the Hawaiian Islands. It was redesignated in 1978 as Pu'uhonua o Hōnaunau National Historical Park in recognition of its original Hawaiian name, and in 2004 increased in size to 420 acres with the acquisition of portion of Ki'ilae ahupua'a.

The existing maintenance and resource management facilities that would be replaced comprise a grouping of seven buildings located about 400 to 500 feet inland of the shoreline. Their construction is generally a combination of plywood, metal screen, wood posts and beams, and corrugated metal roofs (see Figure 1-2 for location and typical building construction). They were originally constructed in the 1960s with the intent of serving as temporary structures and have been altered over time to meet evolving Park requirements. Their above ground foundations suggest that they were built to minimize their physical impact on underlying archeological resources with the intent of removing them after permanent replacement facilities were constructed.

This Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA), Department of the Interior requirements, and NPS NEPA Guidance in its 2015 NEPA Handbook to evaluate the impacts of two action alternatives and a no action alternative for the removal and replacement of Park maintenance facilities.

1.2 PURPOSE AND NEED FOR THE PROJECT

The purpose of the project is to: (1) provide safe, modern, functional facilities for Park maintenance and resource management operations in a suitable location that also minimizes impacts to the cultural landscape; (2) reduce impacts to resources and improve the Park experience by removing "temporary" buildings from the cultural landscape; and (3) reduce the risks of coastal hazards and sea level rise on Park operations and assets posed by their current proximity to the shoreline.



FIGURE 1-1 PU'UHONUA O HŌNAUNAU NATIONAL HISTORICAL PARK LOCATION MAP





EXISTING MAINTENANCE AND RESOURCE MANAGEMENT FACILITIES LOCATION AND TYPICAL BUILDING CONSTRUCTION

The project is needed to replace existing facilities that are insufficient and substandard for current park operations. The current facilities were constructed in the 1960s as temporary, minimal facilities. They are undersized, substandard facilities that are not energy efficient, are poorly configured for current Park maintenance and resource management staff operations, and are subject to damage by recurring coastal hazards. Without the project, the existing facilities would continue to adversely affect the cultural landscape and park administration. Their continued use would also prolong the risks of coastal hazards on facilities and personnel. High surf and storm events have caused coastal flooding at and near the existing maintenance facility compound. Predicted sea level rise is likely to increase and/or exacerbate these damaging events at this site in the future.

1.3 PROJECT OBJECTIVES

In addition to the project purpose, the project is intended to meet the following objectives:

- Align with previous Park planning efforts.
- Minimize the impact of Park operations on visitors and the surrounding community.
- Utilize existing infrastructure and utilities to the extent possible.
- Serve operational needs of the Park's maintenance and resource management operations.

2.0 ALTERNATIVES

2.1 INTRODUCTION

Two action alternatives (Alternative A – Makai¹ [Proposed Action/Preferred Alternative] and Alternative B – Mauka²) and the no action alternative (Alternative C) are carried forward for analysis in this Environmental Assessment (EA) and are described below. In addition, actions common to both Alternative A and Alternative B (e.g., removal of existing facilities is common to both Alternative A and Alternative B) are also presented (see Section 2.4). The locations of sites being considered for construction of the replacement facilities are shown in Figure 2-1 (i.e., Alternative A would be located at Site 1 and Alternative B at Site 2).



FIGURE 2-1 POTENTIAL FACILITY CONSTRUCTION SITES MAP

Note: During the NEPA scoping period, a third site was included in both action alternatives. "Site 3" is a previously disturbed road cut site approximately 1,000 feet southwest of Site 1, about midpoint between the existing maintenance compound and Site 1 (see Figure 2-1). It is currently occasionally used for temporary staging of materials or green waste composting. At the time of NEPA scoping, Site 3 was identified as a location for open materials storage (in Alternative A) and partial fleet parking and washrack area (in Alternative B). During the preparation of the EA, NPS determined that Site 3 was not needed to support either action

¹ "Makai" is a commonly used Hawaiian directional term meaning "towards the sea."

² "Mauka" is a Hawaiian directional term meaning "towards the mountain" or "upland."

alternative and the site was removed from both action alternatives. Site 3 will continue its current function as temporary materials and compost staging; it would experience no change in use or site conditions under either action alternative. Removing the use of Site 3 from both alternatives also avoids potential adverse effects to the existing cultural landscape from the introduction of structures and alternation of topography that were previously proposed.

2.2 ALTERNATIVE A: MAKAI SITE (PROPOSED ACTION/PREFERRED ALTERNATIVE)

Alternative A is the Proposed Action and the Preferred Alternative. The preliminary building program includes the following, which are common to both action alternatives:

Function	Approximate Area (gross sq ft)
Resource Management Building	5,500
Resource Management Employee Privately Owned Vehicle (POV) Parking	2,500
Maintenance Building	4,200
Maintenance – Covered Fleet Vehicle Parking	3,600
Maintenance – Storage, Employee POV Parking, Vehicle Wash	9,400
Maintenance – Covered Storage & Recycling	600
TOTAL	25,800

 TABLE 2-1
 PRELIMINARY BUILDING PROGRAM

(Note: All estimated areas are preliminary and subject to change.)

Under Alternative A, all replacement maintenance and resource management facilities would be constructed at a site approximately 2,000 feet northeast and inland of the existing maintenance facilities (Figures 2-1 and 2-2). The site is referred to in this EA as "Site 1" and is currently used for fleet vehicle maintenance (washdown), storage, and the Park's wastewater treatment facilities. Park visitors do not access this site.

Proposed development at Site 1 would include an area of about one acre, of which approximately 0.3 acres would comprise access and internal circulation, in addition to the estimated building program listed in Table 2-1. Figure 2-3 provides a preliminary site plan for this alternative.

2.2.1 NEW CONSTRUCTION AND DEMOLITION

Alternative A includes demolition of the existing facilities at Site 1 (excluding the existing wastewater treatment system components) and reconstruction/widening the access roads to accommodate emergency and Park fleet vehicles. The buildings at Site 1 would primarily be on previously graded and disturbed land. It is likely that some new disturbance would be required due to site topography, facility operational needs, and emergency access needs.



FIGURE 2-2 SITE 1 - EXISTING WASHRACK AND WASTEWATER TREATMENT FACILITIES

The Resource Management building would be approximately 18 feet tall and located at the entrance to Site 1. Its location immediately off the north-south access road (driveway) would reduce interference by this facility's administrative and visitor traffic on maintenance operations located at the south (interior) end of the site. This building would have a raised floor with pier foundations to minimize ground disturbance and accommodate the variations in the underlying topography.

The Maintenance, Resource Management Tool Storage, and Fleet Parking buildings would be approximately 17 to 20 feet tall (above finished grade) and located toward the south end of the site near the site of the existing wastewater facilities and Park maintenance buildings. The proposed Maintenance Building structure would likely have a gable roof with overhangs to reduce solar heat gain and glare due to its east-west exposure. To avoid or minimize impacts to known archaeological features and to the existing landscape, these new buildings would largely be located in an area that was previously graded and disturbed. The existing topography in this area is relatively level, with about a 5-foot variation in elevation from north to south. This allows for slab on grade foundations with perimeter footings to accommodate vehicular loads.

Exterior motion sensor lighting are proposed at all entry points and vulnerable perimeter points to deter vandalism and theft. The exterior lighting would allow high quality images to be acquired on a surveillance camera system. Exterior lighting would adhere to design requirements in Mitigation Measure Bio 8 (Appendix A).



FIGURE 2-3 ALTERNATIVE A: MAKAI (PREFERRED ALTERNATIVE) PRELIMINARY SITE PLAN

Alternative A includes removal of the existing maintenance and resource management facilities from their current location near the coastline (described in Section 2.4).

2.2.2 UTILITY IMPROVEMENTS

Under this alternative, the following utility improvements are anticipated (to be confirmed and refined during the detailed design process):

- Fire protection water system improvements (e.g., water main, fire hydrants) and connections and internal supply lines for domestic water service.
- Onsite wastewater collection and pumping for new facilities.
- Remove existing electrical supply, including existing underground feeder line.
- New electrical service/supply from the end of an existing overhead distribution line from Keala o Keawe Road through an existing easement to a new pad-mounted transformer near the new facilities. An underground line would extend electrical service to Site 1 (see Figure 2-3 for anticipated power line route).
- Utility company upgrades to existing non-standard overhead line on Keala o Keawe Road. Other potential upgrades include: addition of a fourth conductor, replacement of select poles, and addition of new hardware to poles.
- Electrical service/distribution system would include capability to connect photovoltaic power generation.
- Telecommunications infrastructure extended from existing underground infrastructure.

The existing wastewater management facilities at Site 1 are being upgraded within the existing footprint and would be constructed under a separate action. Future design and construction work at Site 1 would be coordinated with the ongoing wastewater treatment improvements project to avoid conflicts in facility siting and construction timing.

2.2.3 ACCESS ROADS

Access to Site 1 is via a paved road located just north of the Park's entrance, which is aligned east-west on privately owned land. Alternative A would require an easement (or other real estate instrument) from the access road owner, B.P. Bishop Estate. The alignment of the existing vehicular entry driveway within Site 1 would be generally maintained in this alternative. Both access roads would need to be rebuilt and widened to accommodate emergency vehicles and to provide other vehicular and equipment access. The following improvements to the access roads are anticipated:

- Reconstruct and widen to 20 feet wide of paved surface with up to an additional 6 inches of compacted gravel on either side (i.e., road shoulder), or as required by local fire marshal.
- Excavation and construction of underground utilities, including water, sewer, and electricity within the access road footprints.

2.2.4 CONSTRUCTION METHODOLOGY

Typical construction activities for Alternative A include mobilization; site preparation (e.g., demolition of existing buildings at Site 1); construction (e.g., excavation, grading, planting screening vegetation, installing underground utilities [including within the privately-owned access road], construction of new buildings; reconstructing and paving access roads); demobilization (e.g., remove construction materials, BMPs, trailers, restrooms, etc. from construction sites); and demolition of existing maintenance facilities (demolition and staging activities to be limited to previously disturbed areas).

Estimates of construction duration for Alternative A range from 20 months to 42 months, depending on many factors, including whether any of the activities are conducted concurrently. If concurrent construction occurs, there may be ± 40 crew members onsite at a given time (fewer if the work proceeds sequentially).

Alternative A would include mitigation measures (including design features) to avoid, minimize, and/or mitigate potentially adverse impacts. These measures are presented in Appendix A.

2.3 ALTERNATIVE B: MAUKA SITE

Alternative B involves construction of maintenance and resource management facilities at an NPS-owned parcel approximately three miles east of the main Park on Keala o Keawe Road (Highway 160) (see Figures 2-1 and 2-4). Referred to as "Site 2" or the "mauka" (i.e., upland) site in this EA, the approximately 3.6-acre parcel is currently occupied by three structures owned by the Park (resource management, dormitory, and storage buildings) and an asphalt driveway and parking area. Topography at the site is steeper than at Site 1 and consistently slopes up from west to east. This site also contains a regulatory floodway in the northeast corner of the site. Site 2 is surrounded by agricultural and residential uses on its north, east, west, and south, and is bordered by Keala o Keawe Road (Highway 160) on the west. Keala o Keawe Road provides direct access to Site 2 from the main Park, with a travel time of about 10 minutes.



FIGURE 2-4 SITE 2 - MAUKA PARCEL

A native plant garden and nursery for culturally important plants used in the Park's cultural programs and an interpretive garden are maintained within the parcel. The plantings in the native garden and interpretive garden (including protected species) are of modern installation (i.e., not naturally occurring at the site).

One building is used by Resources Management. The dormitory is used by NPS employees from other parks, visiting researchers and other Park/NPS-associated visitors and can accommodate up to about 25 overnight guests. The dormitory also provides limited meeting space at an easily accessed location for Park- or cultural resources-related meetings. The storage building provides secured storage space for the Park's various divisions.

2.3.1 NEW CONSTRUCTION AND DEMOLITION

Alternative B has the same construction program as Alternative A (see Table 2-1) and would construct the following components at Site 2 (see Figure 2-5 for preliminary site plan).

- Resource Management building
- Maintenance facility
- Storage
- Fleet parking
- POV parking



FIGURE 2-5 ALTERNATIVE B: MAUKA PRELIMINARY SITE PLAN

Alternative B includes widening and repaving of the existing driveway and construction of parking for the existing and proposed new functions at Site 2. There would be three groupings of new facilities at Site 2: Resource Management office building south of the existing facilities; Maintenance building (including storage and tools) southeast of the existing resource management building, and Fleet vehicle parking and wash east of the existing buildings. No alterations are proposed for the existing resource management, dormitory, and storage buildings at Site 2.

Site 2 would require substantial grading and construction of a retaining wall east of the new structures to provide a level area for driveways, parking, and the new buildings. The Maintenance and Fleet facilities would likely have foundations consisting of a concrete slab with perimeter footings. Due to the variations in the underlying topography, the Resource Management building would likely have a raised floor with pier foundation. The Resource Management building is proposed as a gable roof structure with overhangs. All other buildings are proposed as shed roof structures with overhangs (subject to changes in detailed design). All facilities would be sited outside the regulatory floodway in the northeast corner of the site (see Figure 2-5).

The site photographs in Figure 2-4 depict the existing conditions at the general locations of the proposed new Resource Management and Maintenance buildings at Site 2.

In Alternative B, heights of the new buildings at Site 2 would range from about 18 feet (Vehicle Wash) to about 24 feet (Maintenance building) above finished grade, depending on site topography.

As in Alternative A, Alternative B would include removal of the existing maintenance and resource management facilities from their current location near the coastline (described in Section 2.4).

2.3.2 UTILITY IMPROVEMENTS

Site 2 is served by existing electrical power, potable water, and sewer systems; all appear to be below grade. Alternative B would require the extension, and possible upgrading, of these utilities to serve the new buildings. This work would likely include trenching and reconstructing existing underground services to provide adequate service to the new facilities. Specific requirements and construction methodology would be identified during the detailed design phase.

2.3.3 CONSTRUCTION METHODOLOGY

Typical construction methodology for Alternative B would generally be the same as in Alternative A: mobilization (including cordoning off, clearly marking, and protecting vegetation to be preserved adjacent to construction sites at Site 2), site preparation, construction, demobilization, and demolition of existing maintenance facilities. Estimates of construction duration for Alternative B range from 22 months to 48 months (approximately 2 and 6 months longer than Alternative A, respectively), depending on many factors, including whether any of the activities are conducted concurrently. If concurrent construction occurs at Site 2, there may be ± 40 crew members onsite at a given time (i.e., same estimate as Alternative A); fewer if the work proceeds sequentially. As in Alternative A, Alternative B would implement mitigation measures (including design features) to avoid, minimize, and/or mitigate potentially adverse impacts. These measures are presented in Appendix A.

2.4 ACTIONS COMMON TO BOTH ACTION ALTERNATIVES

Under both Alternative A and Alternative B, the existing maintenance and resource management facilities near the picnic area along the coastline would be removed (Figure 1-2). Above ground structures (including utilities) would be demolished or deconstructed and relocated or disposed of offsite, with the possible exception of a concrete slab. Seven structures are slated for removal and one cesspool would be abandoned; all other support structures such as canopy tents and equipment/supplies would also be removed. Above ground utilities to be removed include electric, water, and telecommunications infrastructure. Existing portable toilets (i.e., porta-potties) serving the picnic area would remain in both action alternatives. These removal activities would be identical under both Alternative A (Preferred Alternative) and Alternative B. Specific future activities at the site would be identified in a future planning effort and are not addressed as part of the proposed action under this EA.

2.5 ALTERNATIVE C: NO ACTION

Under the No Action Alternative, the existing maintenance and resource management facilities that were constructed for temporary use would continue to be used indefinitely. Repairs and minor renovations would be made on an as-needed basis to allow operations to continue within the facilities. Over time, greater levels of investment would be needed to ensure that the facilities meet modern technological and operational requirements and comply with regulatory codes. The No Action Alternative would not meet the project's purpose and need or project objectives but is carried through the environmental analysis as required by NEPA, as the continued temporary use would serve as a benchmark for comparison for the action alternatives. This would also continue the current inappropriate siting of park facilities within a cultural landscape, and continued risk of storm surge and storm impacts because of the location near the coast as these facilities would continue to be used indefinitely.

2.6 ALTERNATIVES CONSIDERED BUT DISMISSED

During the development of the Proposed Action, alternatives were proposed that were dismissed for various reasons, described in Table 2-2.

Item	Alternative	Reason for Dismissal
1	Fit full or partial program at Site 3	Greater visual impacts from public areas; inadequate developable area; potential disturbances caused from maintenance functions performed close to Visitor Center; unavoidable adverse impacts to archeological resources and cultural landscape.
2	Move office functions to off-site leased commercial space	Technically infeasible; commercial space not available within reasonable travel distance to the Park; would require special funding unavailable for the project.
3	Move vehicle wash off-site (i.e., at a remote site not owned or controlled by NPS)	Technically infeasible; equipment would need to be trailered off-site; no commercial vehicle wash available locally for Park use.
4	Build resource management office adjacent to existing Park administration building	Greater environmental impact: Would extend over known cultural resources; impacts cultural landscape; prominent visibility to visitors.
5	Raise and harden existing maintenance buildings to avoid sea level rise and coastal hazard damage.	Greater environmental impacts to underlying cultural resources at the existing site and continues the ongoing adverse impacts to the Park's cultural landscape.

 TABLE 2-2
 ALTERNATIVES CONSIDERED BUT DISMISSED

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes existing conditions at the alternative project sites and the direct and indirect impacts that are likely to occur with implementation of Alternative A and Alternative B. Both short-term, temporary construction period and long-term operational period impacts are described. "Direct" impacts are impacts that are caused by the action and occur at the same time and place. "Indirect" impacts are those caused by the action later in time or farther removed in distance but are still reasonably foreseeable. "Beneficial" is a positive change in the condition of the resource or a change that moves the resource toward a desired condition. "Adverse" is a change that declines, degrades, and/or moves the resource away from a desired condition.

This EA also considers cumulative impacts, defined as "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, or reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.1(g)(3)). Cumulative impacts are addressed in this EA by resource topic and are considered for the action alternatives. The evaluation of the cumulative impact is based on a general description of the projects according to the level of detail available.

CUMULATIVE IMPACTS PROJECT LIST

Title	Description	Status (Past, current, or proposed)
Wastewater treatment facility improvements at Site 1	The existing wastewater treatment facilities would be improved to enhance nutrient removal. The upgrades would be located within the same footprint as the existing facility. Design of Alternative A would consider the wastewater facility upgrade in its final design.	Proposed; construction in Fiscal Year 2025
	Affected Resources: Biological Species of Special Concern or Their Habitat, Archeological Resources, Traffic	
Preservation treatment and future interpretation of existing maintenance facility site	Although considered a separate action, removal of the existing maintenance facilities by Alternative A or Alternative B would enable future preservation and interpretation actions at the site that would be guided by the site planning. Timing of this action is unknown, but site planning for the area is identified as a high priority in the Park's Foundation Document (NPS 2017). Affected Resources: Biological Species of Special Concern or Their Habitat, Archeological Resources, Cultural Landscapes, Native Hawaiian Concerns.	Future; timing unknown

3-1

Projects considered in the cumulative impact analysis include:

TABLE 3-1

Affected Environment and Environmental Consequences

Under the "Environmental Consequences" section of each resource, cumulative impacts of past, present, and reasonably foreseeable actions are discussed under their respective subsections (i.e., No Action Alternative, Alternative A [Makai], and Alternative B [Mauka]).

3.1 ISSUES CARRIED FORWARD FOR DETAILED ANALYSIS

Issues were retained for consideration and discussed in detail in this EA if:

- the environmental impacts associated with the issue are central to the proposal or of critical importance;
- a detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives;
- the environmental impacts associated with the issue are a significant point of contention among the public or other agencies; or
- there are potentially significant impacts to resources associated with the issue.

Item	Issue	Rationale
1	Biological Species of Special Concern or Their Habitat	Listed plant species occur at Site 2 and may be adversely impacted if Alternative B is implemented. There is also potential for the presence of subsurface lava tubes at Sites 1 and 2 that could contain unique biological resources that may be affected during ground disturbance.
2	*Archeological Resources	Site 1 is in the Hōnaunau Historic District and there are known archeological resources in the vicinity of the project areas within the Park. Subsurface lava tubes that may contain cultural resources may be present beneath Sites 1 and 2.
3	*Cultural Landscapes	Removing the maintenance facilities from their present location would have a beneficial impact to the cultural landscape. However, new construction at Site 1 is located within the Hōnaunau Historic District and is within the viewshed of a National Register-eligible Mission 66 cultural landscape, and, therefore, has the potential for adverse visual impacts.
4	*Native Hawaiian Concerns	The Park contains culturally important places where Native Hawaiians can be expected to seek access for either ceremonial or religious uses or to connect with and experience natural, cultural, biocultural resources. The potential for encumbered access during and post construction, visual impacts to sacred space, and physical disturbance of sites of religious and cultural significance should be analyzed.

 TABLE 3-2
 Issues Carried Forward for Detailed Analysis

5	Transportation Facilities Impacts	Tomporary construction period traffic
5	Transportation Facilities impacts	remporary construction period traffic
		impacts on the Park's entry road may
		adversely affect visitors, neighbors, and
		people who fish, swim, and snorkel in the
		bay. The movement of Park fleet vehicles and
		staff POVs may also affect queuing at the
		Park entrance in the operational period if
		increases in vehicle trips to and from the
		Park from Sites 1 and 2 overlap peak visitor
		trips.

* Note: In this EA, Archeological Resources, Cultural Landscapes, and Native Hawaiian Concerns are addressed in the overarching impact area of "Cultural Resources."

Issues and impact topics dismissed from further analysis are presented in Appendix B, along with the rationale for their dismissal.

3.2 BIOLOGICAL SPECIES OF SPECIAL CONCERN OR THEIR HABITAT

3.2.1 ENDANGERED SPECIES ACT

Section 7 of the Endangered Species Act of 1973 (ESA) (16 USC 1531 et seq.) requires federal agencies to conserve threatened and endangered species and ecosystems upon which species depend. Section 7 informal consultation is being conducted for the proposed action's anticipated impacts to listed species and critical habitat.

3.2.2 MIGRATORY BIRD TREATY ACT (MBTA)

Birds, both migratory and most native-resident bird species, are protected under the MBTA, and their conservation by federal agencies is mandated by Executive Order 13186 (Migratory Bird Conservation). Under the MBTA it is unlawful by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, [or] possess migratory birds or their nests or eggs at any time, unless permitted by regulation.

3.2.3 EXISTING CONDITIONS

Currently, 484 species in Hawai'i are federally and state listed as threatened or endangered (USFWS 2023). Many of these plant species persist at very low numbers and are in rapid decline (USFWS 2022). Existing threats to listed plant species across the Hawaiian Islands include habitat loss, degradation, and modification of habitat from nonnative invasive plants and animals, and disease (USFWS 2022).

Climate change is exacerbating and accelerating threats to listed species and plant species at risk across the Hawaiian Islands. Changes in environmental conditions, such as increasing storm intensities and temperatures and decreasing precipitation, can result in changes to the microclimate of a species habitat, and may lead to the loss of the species or loss of native species associated with that species habitat (USFWS 2022).

All migratory shorebird species that winter in the Hawaiian Islands do not nest in the Islands and many of the introduced naturalized passerines in Hawaii are no longer migratory.

Natural resources surveys of Sites 1 and 2 were conducted in 2022, which focused on plants and birds. The surveys also considered invertebrates and mammals, especially fauna of conservation concern. Site 1 is underlain by mostly pahoehoe lava with minimal soil development. Sparse vegetation at the site is heavily impacted by feral goats that are present throughout the Park. Of the 29 vegetation species recorded at Site 1, there were only three indigenous and two early Polynesia-introduced species, all of which are ubiquitous on undeveloped land in Hawai'i. No plants or animals of concern or listed in state or federal endangered species statutes were found on Site 1 (AECOS Inc. 2022).

Site 2 is located at a higher elevation than Site 1 (i.e., approximately >800 feet above sea level), and is referred to as a kihāpai mauka or kihāpai uka (an upland cultivated patch of land). Although Site 2 shares the same geology as Site 1, greater rainfall and the greater presence of organic material has produced pockets of soil that supports a mesic forest. The upper and lower sections of Site 2 were extensively planted in native trees and shrubs since the late 1970s through the 1990s, intended as a seed source for outplantings in the Park. A variety of weedy herbs and small shrubs cover the mixed rock and shallow soil around the trees (AECOS Inc. 2022). The 2022 surveys recorded 93 species at Site 2, of which 30 are native species and 10 are early Polynesian introductions. This high diversity is a result of the aforementioned intentional plantings to create a $k\bar{k}h\bar{a}pai \, uka$ on the upper part of the site and an interpretive garden on the lower section. Eighteen of the natives are endemics, with at least five listed species-two uhiuhi (Mezoneuron kavaiensis), two kauila (Colubrina oppositifolia) and some 17 individuals of Pritchardia or loulu palms representing 3 or 4 species (AECOS Inc. 2022). With the exception of one *kauila* tree in the upper section, all the listed species were found on the lower section of the property (i.e., west of the existing buildings). Several seedlings were observed as having been germinated downslope of an existing *loulu* palm.

No potential host plants (i.e., *Solanaceae* family) for the endangered Blackburn's Sphinx Moth (*Manduca blackburni*) and no native avian or mammalian species were observed during the surveys at the two sites. It is possible that listed seabirds may overfly the sites during breeding season. Indigenous migratory shorebird species may occasionally use loafing and foraging habitat at or close to Site 1. Although the State of Hawai'i endangered Hawaiian Hawk (*Bueo solitarius*) has been recorded within the general area of Site 2, there are no large trees suitable for nest sites within the parcel (i.e., trees over 15 feet tall, excluding coconut and palm trees and large bushes, in which hawks do not nest). It is probable that the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may use roost trees within Site 2 seasonally. Hawaiian hoary bats are also known to be present in the main Park area, including Site 1.

Site 1 lacks suitable habitat to support the Hawaiian Goose or *Nēnē*. Site 2, which is heavily vegetated, is in an area where Nēnē have not been recorded in modern times (David 2022 in AECOS Inc. 2022). Short-tailed Albatross is a pelagic Asian species that has nested on Midway Atoll in very small numbers but has never been recorded along the Kona Coast nor on any of the main Hawaiian Islands other than Kaua'i. No suitable nesting habitat for this species is present at any of the three areas surveyed (AECOS Inc. 2022). There is no federally-delineated Critical Habitat at Site 1 or 2.

3.2.4 ENVIRONMENTAL CONSEQUENCES

3.2.4.1 Alternative A – Makai (Preferred Alternative)

This alternative may have indirect adverse impacts on biological species of special concern or their habitat. It would not directly impact species of special concern or their habitat during project construction or operations, as none exist at Site 1. Impacts on protected avian species that may overfly the project areas are unlikely as the project areas do not represent unique habitat within the Park and there is no nesting habitat for any listed or protected seabird species on or close to the proposed action site. Construction would occur primarily on previously disturbed and cleared or developed areas and would not directly impact habitat use by any protected species. Indigenous migratory shorebird species that may occasionally use loafing and foraging habitat at or close to Site 1 may be adversely affected by construction and operational activities. However, increases in noise levels from construction activities to the ambient noise environment would be negligible and temporary. Construction activities would not further threaten the existence of any protected species or critical/sensitive habitats. Operational period noise and activity would increase at Site 1, but decrease at the existing maintenance facility site. Site 1 is not known to be more heavily used by protected species than the existing maintenance facility site and the relocation of activities there would not increase the overall potential for adverse impacts to biological resources within the Park. See Mitigation Measures Bio 1 through Bio 15 in Appendix A for measures that would avoid, minimize, and mitigate potential adverse effects to biological resources, including MBTAprotected species.

During installation of the foundation pilings for the new facilities at Site 1, there is potential for subsurface lava tubes to be discovered. If present, these tubes could contain unique biological resources; however, Mitigation Measure Bio 5 in Appendix A would address potential impacts.

NPS is in the process of conducting informal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act. NPS determined that the Proposed Action may affect but is not likely to adversely affect the Band-rumped Storm-Petrel, Hawaiian Petrel, and Newell's Shearwater and will result in no effect to the other listed species.

Cumulative Impacts. As described above, Alternative A may have adverse indirect impacts on species of special concern or their habitat from construction and operational period noise and activity. Potential impacts from construction noise and activities would be temporary and minimized by the implementation of mitigation measures (see Appendix A). Construction of Alternative A would not overlap in time with the foreseeable planned actions (construction of wastewater treatment facility and preservation treatment and interpretation at existing facility site) and their corresponding noise and activity levels would not be additive.

Increases in noise or activity levels at Site 1 during operations would be negligible when considered in the context of the entire Park and its ongoing activities. Site 1 does not support biological species of concern or their habitat, and the proposed action would transfer existing human activity away from a coastal area to an upland area within the Park where development and human activity already exist. During the operational period, activities at the wastewater treatment facilities would be largely passive (i.e., with negligible levels of human activity) and unlikely to result in impacts to protected biological resources as most of the functioning of the system would be subsurface in constructed facilities.

Because the likely impacts of the two identified reasonably foreseeable actions on biological resources are minimal (i.e., wastewater treatment facility improvements at Site 1 and preservation and interpretation actions at the current maintenance facility site), the incremental impacts of Alternative A on biological species of special concern or their habitat are unlikely to interact with those impacts in a way that would be cumulatively impactful.

3.2.4.2 Alternative B (Mauka)

Protected plant species present at Site 2 may be directly or indirectly adversely impacted by this alternative. Although most of the species of special concern could be avoided during construction and operations, some may have to be removed for construction or may be indirectly impacted by the additional shade created by the new structures. Due to the thin soils at Site 2 and resulting shallow root systems, the affected special status trees would be poor candidates for relocation. Although the species of special concern were intentionally planted, they are still considered protected under the ESA. Mitigation Measures Bio 1 through Bio 15 in Appendix A would be implemented to avoid, minimize, or offset potential adverse impacts. If this alternative is implemented, NPS would conduct informal ESA Section 7 consultation with USFWS to identify appropriate BMPs and minimization measures to avoid, minimize, or offset adverse impacts, including impacts to MBTA-protected species. With the implementation of these measures, Alternative B is expected to result in minimal adverse impacts to biological species of special concern or their habitat.

Cumulative Impacts. Alternative B does not include activities at Site 1 and would have no temporal or spatial overlap with the impacts of the wastewater treatment facility upgrades, including to biological resources. This alternative may have adverse effects on protected species at Site 2; however, if this alternative is implemented, its adverse effects on protected species would be mitigated through minimization measures that would be identified in an ESA Section 7 consultation with USFWS. The protected plant species found at Site 2 were intentionally introduced and unrelated to habitats found at or near the wastewater treatment project or exiting maintenance facility site. Mitigation measures would offset the loss of protected species and construction would avoid impacts to nesting birds and bats that are federally-protected. Alternative B is not likely to result in cumulative impacts on biological species of special concern or their habitat because it would have no temporal and spatial overlap with the expected biological impacts of those actions.

3.2.4.3 Alternative C: No Action Alternative

The No Action Alternative would have no additional impacts on species of special concern or their habitat. Species of special concern or their habitat would remain the same or similar to existing conditions, including with the implementation of the planned wastewater treatment facility improvements at Site 1 (a planned foreseeable action). It is assumed that the proposed preservation treatment and future interpretation of existing maintenance facility site would not be implemented, as those facilities would continue to be used in that coastal location. There would be no change to the biological resources at Site 2 under the No Action Alternative. Because there are no direct or indirect effects of the No Action Alternative, there would be no cumulative effects to biological species of special concern or their habitat associated with this alternative.

3.3 CULTURAL RESOURCES

As defined by NPS Director's Order No. 28 Appendix A, "cultural resources" are aspects of a cultural system that are valued by or significantly representative of a culture or that contain significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places, and as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources for NPS management purposes. This section analyzes archeological resources, cultural landscapes, and Native Hawaiian concerns as separate topics within the overarching issue of cultural resources.

3.3.1 NATIONAL HISTORIC PRESERVATION ACT

As required by Section 106 of the National Historic Preservation Act of 1966 (NHPA), the Park is consulting with the Hawai'i State Historic Preservation Officer (SHPO), Native Hawaiian Organizations, and other consulting parties to assess the effect of the project on historic properties. As part of the consultation process, the Park will consider and determine the direct and indirect effects of a proposed undertaking on historic properties (i.e., historic or ancient sites included in or eligible for inclusion in the National Register of Historic Places) and avoid, resolve, or mitigate adverse effects to historic properties. In conjunction with this EA, the project is concurrently undergoing a review of potential effects on historic properties in compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1996, as amended (36 CFR Part 800). The Section 106 consultation process is being conducted separately from, but concurrently with, the NEPA process.

3.3.2 ARCHEOLOGICAL RESOURCES

NPS Director's Order No. 28 Appendix A defines archeological resources as "any material remains or physical evidence of past human life or activities which are of archeological interest, including the record of the effects of human activities on the environment. They are capable of revealing scientific or humanistic information through archeological research."

3.3.2.1 Existing Conditions

Pu'uhonua o Hōnaunau National Historical Park was listed on the National Register of Historic Places in 1966. The National Register nomination for the Historic District includes over 320 sites, and since its original nomination many additional archeological resources have been identified. Based on oral traditions, ethnographic and historical accounts, and an extensive archeological record, the Park is understood to have been a place of significant social, political, and religious importance during the pre-Western contact and early post-contact periods. Excavations in the 1960s indicated residential settlement extending an unknown distance uphill from the bay (Barna et al. 2021).

The current maintenance facility occupies an area that contains a number of previously identified cultural resources including several contiguous $p\bar{a}$ hale (yard enclosures) each containing one or more associated house platforms, animal pens, and burial features. The stone walls that define these spaces are largely of historic origin, a result of the introduction of livestock, in addition to the Māhele and subsequent Kuleana Act of 1850. When the Park maintenance buildings were originally constructed in the 1960s, several gaps were created along the ocean-facing side of these stone walls to allow vehicle and personnel access to the area. The maintenance buildings themselves were constructed post-on-pier and were

minimally invasive to the underlying archeological site. All archeological features in and near the current maintenance facility fall within the NRHP-listed Hōnaunau Historic District and are considered contributing resources. In addition, these resources near the coast are subject to increasing storm surge and sea level rise events.

Archeological inventory surveys were conducted at Sites 1 and 2 in 2021 to assist in identifying suitable locations for new construction and to analyze potential impacts of the alternatives (Barna et al. 2021 and Barna, Kepa'a, and Dudoit 2022). The survey areas extended well beyond the potential construction footprints in order to understand the area's broader archeological context.

Site 1 comprises primarily previously disturbed land in the form of an access road, vehicle washrack, and above- and below-grade wastewater treatment infrastructure (see Figure 2-2). The current survey effort in the area in and around Site 1 did not include the existing disturbed area (wastewater facility, washrack, and access road) because that area had been previously inventoried and found to be devoid of archeological resources. In addition, the existing fenced area is characterized by nearly 100% previous surface disturbance. Within the area surveyed as part of the current effort, a total of 71 formal and informal archeological features were identified. The features included platforms, terrace, modified outcrops, filled crevices and depressions, possible pavings, petroglyphs, and *papamu* (playing surface for Hawaiian *konane* game), linear features, and historical road. All identified features fall within and are considered contributing to the NRHP-listed Hōnaunau Historic District.

Previous surface disturbance at Site 2 includes three existing buildings, driveway, and parking apron (see Figure 2-4). No archeological resources were identified at Site 2 during the fieldwork conducted in 2021. Constructed stone garden features and paths at Site 2 were concluded to have been constructed by the Park during the modern era. Subsurface shovel testing indicated an absence of traditional Hawaiian material culture associated with agriculture or other activities at the site (Barna, Kepa'a, and Dudoit 2022).

No lava tubes have been identified within either of the two sites; however, networks of lava tube caves underlie many areas of the Park. If present in areas of planned surface disturbance, these caves could contain cultural resources.

3.3.2.2 Environmental Consequences

3.3.2.2.1 Alternative A – Makai (Preferred Alternative)

Preliminary facility design plans at Site 1 make maximum use of previously disturbed and developed areas. Where the facility/associated development cannot be fully sited within previous disturbance, by project design, structures and all associated surface disturbance will avoid known archeological features by no less than 15 feet (see Mitigation Measure CR 2). This design feature requires that no development would occur in a location that would result in surface disturbance within 15 feet of any identified archeological resource. Final facility design would be based on this criterion. Implementation of this design requirement would effectively avoid adverse impacts to all known/identified archeological resources. However, construction activities at Site 1 could result in inadvertent discovery of archeological resources and treatment of such discoveries would be guided by an Archeological Monitoring Plan and a Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action. These two documents would collectively guide any necessary treatments, analysis, and disposition of resources discovered during construction, and would be

completed prior to any ground disturbing activities (see Mitigation Measures CR 3 and CR 5). In addition, an archeological monitor would be required to be on-site during any ground disturbing activities (see Mitigation Measure CR 4). These project requirements would effectively minimize any adverse impacts resulting from inadvertent resource discovery. Given the required design criteria outlined here, Alternative A would likely result in minor adverse impacts to archeological resources if any are inadvertently discovered during construction.

Cumulative Impacts. As described above, there is a potential for Alternative A to have minor adverse impacts to archeological resources at Site 1. However, the impacts would be avoided, minimized, or mitigated by measures identified in Appendix A. Cumulative impact analysis considered the impacts of Alternative A combined with the impacts of the wastewater treatment facility upgrades at Site 1 and the preservation and interpretation actions at the current maintenance facility site. The wastewater treatment facility improvements would occur within previously disturbed land and are not expected to affect additional archeological resources. The removal of the current maintenance facilities near the coast would have beneficial impacts to archeological resources underlying that site. When added to these expected impacts, the incremental effects of Alternative A could result in beneficial cumulative impacts on archeological resources when considered in combination with past, present, and reasonably foreseeable actions.

3.3.2.2.2 Alternative B (Mauka)

No archeological resources have been identified at Site 2; however, construction activities at Site 2 could result in inadvertent discovery of archeological resources. Response and treatment of such discoveries would be guided by an Archeological Monitoring Plan and a Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action. These two documents would collectively guide any necessary treatments, analysis, and disposition of resources discovered during construction, and would be completed prior to any ground disturbing activities (see Mitigation Measures CR 3 and CR 5). In addition, an archeological monitor would be required to be on-site during any ground disturbing activities (see Mitigation Measure CR 4). These project requirements would effectively minimize any adverse impacts resulting in an inadvertent resource discovery. Given the required design criteria outlined here, Alternative B is unlikely to result in adverse impacts to archeological resources.

Cumulative Impacts. As described above, Alternative B is not likely to have impacts to archeological resources at Site 2. Impacts would be avoided, minimized, or mitigated by measures identified in Appendix A. Cumulative impact analysis considered the impacts of Alternative B combined with the impacts of the wastewater treatment facility upgrades at Site 1 and the preservation and interpretation actions at the current maintenance facility site. The wastewater treatment facility improvements would occur within previously disturbed land and are not expected to affect additional archeological resources. The removal of the current maintenance facilities near the coast would have beneficial impacts to archeological resources underlying that site. When added to these expected impacts, the incremental effects of Alternative B could result in beneficial cumulative impacts on archeological resources when considered in combination with past, present, and reasonably foreseeable actions.

3.3.2.2.3 Alternative C: No Action

Under the No Action Alternative, no new construction would occur at Sites 1 or 2, and there would be no impact to existing archeological resources in the proximity of the proposed development sites. The seven existing maintenance facilities would not be removed under this alternative; as a result, the Park would forego the beneficial impacts to archeological resources underlying the facilities. Archeological resources would remain the same or similar to existing conditions, including with the implementation of the planned wastewater treatment facility improvements at Site 1, which would occur on previously disturbed land and not expected to affect additional archeological resources. It is assumed that the proposed preservation treatment and future interpretation of the existing maintenance facility site would not be implemented, as those facilities would continue to be used in that coastal location. There would be no change to any archeological resources at Site 2 under the No Action Alternative. Because there are no direct or indirect effects of the No Action Alternative.

3.3.3 CULTURAL LANDSCAPES

3.3.3.1 Existing Conditions

The alternative project sites are not within the defined boundaries of a designated cultural landscape. However, according to the Park's Foundation Document, "...the entire park may be viewed as an ethnographic landscape—a type of cultural landscape with a variety of natural and cultural resources that associated people define as heritage resources..., the park's cultural landscape also encompasses hundreds of other important archeological sites and features...The cultural landscape also includes native plants that remain meaningful to Native Hawaiians and support traditional cultural practices" (NPS 2017). Site 1 and the coastal area where the existing maintenance facilities are located are both situated in this ethnographic landscape within the Honaunau Historic District. As described in Section 3.3.2.1, the area immediately surrounding Site 1 contains a number of archeological features set in a landscape characterized by pahoehoe lava, complex topography, and interspersed with moderately dense brushy vegetation. These factors limit the viewshed among these resources. The cultural landscape at Site 1 is interrupted by existing facilities including the wastewater treatment facility, existing storage structures, and associated access road and utilities. A Visual Impact Assessment (VIA) was prepared to analyze potential visual impacts of the proposed action and is included as Appendix C. The VIA analyzed landscape character, visual context, and spatial composition of the existing conditions at Sites 1 and 2.

The park Visitor Center is a National Register eligible cultural landscape that lies within the Hōnaunau Historic District. Found eligible in 2002 for its association with the NPS Mission-66 program and its distinctive architectural characteristics of the period, its contributing elements include large scale features including the connected theater, comfort station and lanai, the parking lot, and lava rock retaining walls, and small-scale features including landscaping planters, built-in benches, and lava rock curbstones.

Site 1 and the coastal area where the existing maintenance facilities are located are situated within the ethnographic landscape of the Hōnaunau Historic District. Site 2 is outside of the historic district and not visible from a designated cultural landscape.

3.3.3.2 Environmental Consequences

3.3.3.2.1 Alternative A – Makai (Preferred Alternative)

Alternative A would likely result in minor adverse impacts to the cultural landscape at Site 1. Although the proposed new facilities would have a larger footprint than the existing buildings and infrastructure at the site, the existing facilities already interrupt the surrounding cultural landscape with modern visual elements. Presently these impacts are localized to the immediate area and not visible from the Visitor Center cultural landscape or other landscapes of critical importance within the Honaunau Historic District such as the Royal Grounds and pu'uhonua. Although views of the new facility at Site 1 would be largely screened by existing vegetation and topography, based on preliminary design plans it would likely have some limited visibility from locations within the Visitor Center cultural landscape. Visibility would be limited to partial rooftop views through moderately dense vegetation at a distance of around 800 feet. Similar views may also be possible from northern portions of the Royal Grounds, although these views would be at a distance of 1,500 feet and be additionally screened by the Park Visitor Center and amphitheater buildings in the foreground. The proposed access road improvements would have minimal impacts to the cultural landscape as there would be only surface and below grade changes (i.e., no vertical elements are currently planned, but could be incorporated if required). These minor changes to the viewscape would not substantially alter the existing landscape character or viewer experience

This alternative would result in direct beneficial impacts to the cultural landscape at the current maintenance facility site from the removal of the temporary structures (i.e., existing Park maintenance facilities). That site would more closely resemble the area's historic setting and appearance with implementation of Alternative A.

Cumulative Impacts. As described above, Alternative A may have minor adverse impacts to the cultural landscape at Site 1. Existing structures currently interrupt the surrounding landscape and the VIA showed that the overall effect of the proposed structures would be minor, including when viewed from the Visitor Center parking or from the Royal Grounds. When Alternative A is considered in combination with past, present, and reasonably foreseeable actions (i.e., wastewater treatment facility upgrades at Site 1 or preservation and interpretation actions at the current maintenance facility site), its incremental impacts would be largely below grade (not affecting the cultural landscape) and the preservation and interpretation actions at the current maintenance facility site would be beneficial to the cultural landscape.

3.3.3.2.2 Alternative B (Mauka)

Although one of the new buildings proposed at Site 2 under Alternative B would be visible from a public roadway (Keala o Keawe Road), this alternative would have no impacts on cultural landscapes because Site 2 contains no known archeological resources, is not in a historic district, and is not visible from a designated cultural landscape. As in Alternative A, this alternative would result in beneficial impacts to the cultural landscape from the removal of the current maintenance facilities.

Cumulative Impacts. Because Alternative B would have no impact on cultural landscapes, this alternative would not likely result in cumulative impacts when considered together with

the impacts of the wastewater treatment facility upgrades at Site 1 or preservation and interpretation actions at the current maintenance facility site.

3.3.3.2.3 Alternative C: No Action Alternative

The No Action Alternative would have no impacts on cultural landscapes at Sites 1 or 2. Beneficial impacts to the cultural landscape by removal of the existing maintenance facilities in the coastal area would not be realized. The cultural landscape would remain the same or similar to existing conditions, including with the implementation of the planned wastewater treatment facility improvements at Site 1. It is assumed that the proposed preservation treatment and future interpretation of existing maintenance facility site would not be implemented, as those facilities would continue to be used in that coastal location. There would be no change to any cultural landscape at Site 2 under the No Action Alternative. Because there are no direct or indirect effects of the No Action Alternative on the existing cultural landscape, there would be no cumulative effects associated with this alternative.

3.3.4 NATIVE HAWAIIAN CONCERNS

The lands of which the Park encompasses have deep cultural and spiritual significance to Native Hawaiians. The Park's Foundation Document describes the objects, landscapes and natural resources there as "touchstones that contribute to Native Hawaiian identity and heritage" and characterizes the Park as "integral in supporting the revitalization and continuation of cultural identity through a myriad of cultural practices." It is the Park's duty to protect land, water and biocultural relationships and to manage access to the landscape for cultural practices by groups of people with traditional associations to park lands or resources. Such practices range from personal, individual of kilo (ongoing observations) to more formal heiau ceremonies or broader regional rituals and celebrations, sometimes legally referred to as traditional religions.

The framework for analyzing these impacts is shaped by NPS management policies on use of park lands by groups of people with traditional associations to park lands or resources. While not operative within the federal management context, the Park is informed by State of Hawai'i law, which codifies that Native Hawaiians have unique rights to exercise traditional and customary practices for subsistence, cultural and religious purposes. Somewhat similar but distinct from parts of NPS management policy, the foundation of these rights is anchored in access to the land and the perpetual state of learning and affirmation of Native Hawaiian relationships with the land. Analyzing the impacts of the proposed undertaking on access is therefore a key component of this analysis, as well as how the construction and operation of the new facility may impact how Native Hawaiians experience the places they access.

3.3.4.1 Environmental Consequences

3.3.4.1.1 Alternative A – Makai (Preferred Alternative)

Alternative A would beneficially impact the cultural landscape through the removal of the existing maintenance facility. Elevated noise during construction of the new facility at Site 1 and demolition of the existing facility could adversely impact cultural and spiritual practices in the Park; however, construction activities would be temporary and short-term. Archeological features known to be culturally and spiritually important to Native Hawaiians with lineal and cultural ties to Hōnaunau identified near Site 1 would be protected from direct or indirect impacts during project construction and operations. These protections would be required by project design, see Mitigation Measure CR 2 (Appendix A). In case of

inadvertent discovery of cultural resources, response and treatment would be guided by an Archeological Monitoring Plan and a NAGPRA Plan of Action. These two documents would be developed in consultation with Native Hawaiian Organizations and individuals/'ohana, and would collectively guide any necessary treatments, analysis, and disposition of resources discovered during construction (see Mitigation Measures CR 3 and CR 5). Access to these sites and features would be maintained during the construction and operational periods; see Mitigation Measure CR 8 in Appendix A. During the operational period, the integrity of Native Hawaiian cultural and spiritual practices and experience would be retained, as existing practices would continue within the main Park unaffected by activities at Site 1, and such activities in the vicinity of the current maintenance facility would be enhanced by its removal. The visual impacts to sites important for traditional Hawaiian practices and cultural activities would be minimal. Under this alternative, Site 2 would remain available for current and future uses, and maintenance presence would remain in the main park area.

Consultation with the Native Hawaiian community on this project and the alternatives under consideration has been ongoing since 2021. Those consulted have been supportive of the project objectives and purpose and need. Several individuals raised concerns about Alternative A and the proximity of the proposed construction to archeological features nearby. Archeological studies undertaken in the vicinity of Site 1 confirm that features known to be of religious and cultural significance to Native Hawaiians are in close proximity to the Site. Protecting these features from harm through avoidance and buffers and ensuring continued access to these spaces were both important issues discussed during consultation.

Cumulative Impacts. As described above, Alternative A may have minor adverse impacts on Native Hawaiian concerns during the construction periods due to activity and noise. However, construction activities would be temporary and short-term, and identified mitigation measures would be employed to avoid or minimize adverse impacts (see Appendix A). The construction periods of the planned wastewater facility improvements and Alternative A are not expected to overlap; there would be multiple periods of construction noise and activity in and near Site 1 that may affect the ambient noise environment of Native Hawaiian cultural and spiritual practices in the Park. These cumulative adverse effects would be limited to the construction periods of both projects. Implementation of construction period mitigation measures would avoid or minimize these adverse effects and, together with the overall beneficial impact of removing the existing maintenance facilities from their current site is unlikely to result in adverse cumulative impacts on Native Hawaiian concerns.

3.3.4.1.2 Alternative B (Mauka)

Alternative B would have similar beneficial and adverse construction and operational period impacts to Native Hawaiian concerns as Alternative A. At Site 2, cultural practices in the native plant garden area may be adversely affected by the increase activity onsite. Under this alternative, Site 2 may not be available for potential future uses, and Park maintenance presence would not be stationed in the main Park area. Although no plantings at Site 2 have been identified or characterized as cultural resources, ongoing consultation with Native Hawaiian individuals and groups may result in future identification or characterization of extant plantings as important resources. Construction and operational activities at Site 2 would not be audible within the main Park and would not affect cultural ceremonies or activities that occur there. Site 2 contains no known archeological resources, is not in a historic district, and is not visible from a designated cultural landscape. Access to sites and features considered sacred to Native Hawaiians are expected to be maintained during the

construction and operational periods; see Mitigation Measure CR 8 in Appendix A. Implementation of Mitigation Measures CR 1 through CR 9 (Appendix A) would avoid or minimize potential adverse impacts on Native Hawaiian concerns associated with this alternative. Therefore, construction and operation of the proposed facilities would have negligible impacts on Native Hawaiian concerns.

As noted in Section 3.3.4.1.1, consultation with the Native Hawaiian community on this project and the alternatives under consideration has been ongoing since 2021. Several individuals raised concerns about Alternative B, specifically, how the distance between the Park and Site 2 could result in operational inefficiencies, an overall decrease of staff time in the Park, and that rather than developing the site, it should remain available for current and future uses. It was shared that the Park and its resources would be better served by maintaining maintenance presence at the makai, main Park area.

Cumulative Impacts. As described above, Alternative B would have beneficial and adverse impacts on Native Hawaiian concerns. Although construction at Site 2 would not overlap spatially or temporally with the planned wastewater treatment facility improvements at Site 1, there may be cumulative construction period impacts on Native Hawaiian concerns if the projects affect cultural or spiritual practices. However, construction activities would be temporary at both sites and impacts avoided or minimized through mitigation measures identified in Appendix A. Together with the overall beneficial impact of removing the existing maintenance facilities from their current site, Alternative B is unlikely to result in adverse cumulative impacts on Native Hawaiian concerns when considered in combination with past, present, and reasonably foreseeable actions.

3.3.4.1.3 Alternative C: No Action Alternative

The No Action Alternative would have no impacts on Native Hawaiian concerns as existing Native Hawaiian cultural and spiritual practices would continue within the main Park and at Site 2, including with the implementation of the planned wastewater treatment facility improvements at Site 1. However, the continued presence and use of the existing maintenance facilities over an archaeological site would continue to detract from the Park's significance, fundamental resources, and values as it is assumed that the proposed preservation treatment and future interpretation of existing maintenance facility site would not be implemented without the Proposed Action (which would demolish those facilities). Because there are no direct or indirect effects of the No Action Alternative on Native Hawaiian concerns, there would be no cumulative effects associated with this alternative.

3.4 TRANSPORTATION FACILITIES

3.4.1 EXISTING CONDITIONS

3.4.1.1 Main Park

Keala o Keawe Road (Highway 160), an approximately 3.8-mile State roadway, provides access to Pu'uhonua o Hōnaunau National Historical Park. A 0.1-mile access road links Keala o Keawe Road to the Park entrance (see Figure 2-1). In 2021, the segment of Keala o

Keawe Road passing north of the Park had annual average daily traffic³ (AADT) volume of 1,300 vehicles (State of Hawai'i 2021).

Visitor vehicle traffic to the Park is generally concentrated between 11:00 AM and 3:00 PM daily. The highest visitor volumes typically occur from Thursday through Sunday, particularly on holiday weekends. Between January and November 2022, the highest overall visitor arrivals occurred in March, with over 36,000 total visitors and almost 9,800 vehicle arrivals (NPS 2022). When the approximately 75-stall visitor's parking lot is full, queues of three to six vehicles form at the Park's entrance. Visitors also park along the access road from Keala o Keawe Road, which is also heavily used for parking by visitors to the adjacent Hōnaunau Bay snorkeling area and boat ramp (e.g., fishing boat and canoe trailers, canoe paddlers, recreational users). No queuing typically occurs with vehicles departing the Park.

Buses transporting cruise ship passengers and tour groups usually arrive between 11:00 AM and 3:00 PM, and offload passengers in the bus loading zone within the parking lot.

Very few Park visitors arrive on foot; however, there is a large amount of foot traffic that enters and exits the park on a daily basis as visitors walk between the Park and the Hōnaunau Bay access. Park visitors arriving by bicycle are low in number and are usually members of organized bicycle tours (about 12 bicyclists in a group).

Park employee POVs total about 20 to 25 vehicles; about 15 staff currently park their POVs in the picnic area parking lot near the existing maintenance compound and the balance park their POVs in the main Visitor Center parking lot. The majority of Park staff arrive just before 5:30 AM and depart after 4:00 PM and the others arrive about 7:00 AM and depart after 4:00 PM. Staff arrival and departure hours do not overlap with the hours of highest visitor arrivals and departures and typical hours of vehicle queuing.

The Park's vehicle fleet includes about 14 vehicles or mobile equipment. Most are staged at the existing maintenance facility compound and make 20+ trips to other areas within the main Park throughout the day. An average of about two vehicle trips per day are made by fleet vehicles to the washrack (Site 1); these vehicles must exit the Visitor Center parking lot to access the washrack.

3.4.1.2 Site 2 (Mauka)

Site 2 is located on Keala o Keawe Road about three miles east of the main Park. In 2021, the segment of Keala o Keawe Road fronting Site 2 had AADT volumes of 1,600 vehicles (State of Hawai'i 2021). There are few daily vehicle trips to Site 2, with Park staff accessing site storage facilities on an as-needed basis. Use of the dormitory and meeting facilities is occasional, occurring sporadically throughout the year (e.g., dormitory is used at least two weeks per year, and up to three to four weeks for larger projects). Park staff also accesses Site 2 to perform routine vegetation management two to three days per month.

³ The annual average daily traffic (AADT) number represents a typical traffic volume number (in both directions) for any day of the year on the segment of interest.

3.4.2 ENVIRONMENTAL CONSEQUENCES

3.4.2.1 Alternative A – Makai (Preferred Alternative)

Alternative A is expected to result in temporary, minor impacts on transportation facilities. This alternative is not intended or expected to increase the Park's visitor capacity or visitor trips (motor vehicle, bicycle, or pedestrian).

During the construction period, there could be an additional 40 or so construction crew POVs along with construction vehicles and equipment accessing Site 1. Construction activities are expected to begin by 8:00 AM, well before the heaviest volume of visitor arrivals (i.e., 11:00 AM to 3:00 PM); therefore, construction crew-related traffic impacts on queuing at the Park entrance on public roadways are expected to be minimal. Traffic may be periodically subjected to alternating, one-way flow. Large construction equipment and vehicles would be transported to Park, which may coincide with the hours of heavy visitor ingress, which may temporarily increase queuing. However, construction equipment transport would occur infrequently through the construction period and could be scheduled to arrive at off-peak times. Specific parking areas for construction contractor employee POVs would be identified in coordination with the Park to ensure adequate availability of Park staff and visitor parking. See Mitigation Measures TF 1 through TF 5 in Appendix A for mitigation measures to address adverse traffic and parking impacts.

During the operational period, the approximately 15 POVs and 14 fleet vehicles that now park and access the existing maintenance facility compound near the picnic area would be located and operate from Site 1 under the proposed action. There would be approximately 20 to 30 additional vehicle trips on a 100-foot segment of the Park access road between the Park exit and the access road to Site 1, and 5 to 10 round trips per day to the existing maintenance facilities site. Vehicles trips on Keala o Keawe Road would not change under the proposed action. Pedestrian and bicycle facilities and usage are not related to the location of the resource management and maintenance facilities and are not expected to change under this alternative.

Staff arrival and departure times would not change and would generally not overlap with the heaviest visitor arrival period of 11:00 AM to 3:00 PM. Because the fleet vehicles and equipment would now be staged outside the Park entrance, some trips by these vehicles may occasionally increase queuing at the entry booth. However, fleet vehicles would generally remain within the main Park areas during work hours and their ingress into the Park would be rapid because no payment transaction would be made at the booth.

Within the Park, there would be fewer vehicle trips by park staff made between the picnic area (i.e., current maintenance facility compound) and the Visitor Center parking lot on the coastal access road during the operational period.

Cumulative Impacts. The incremental impacts of Alternative A on transportation facilities would not overlap temporally or spatially with either reasonably foreseeable action in a way that would be cumulatively impactful. Construction of the wastewater improvements would precede construction of the Alternative A facilities and not overlap with its construction period traffic. During the operational period, additional staff and fleet trips to and from Site 1 and the Park entrance would be added to vehicle traffic related to the upgraded wastewater treatment facilities. However, the wastewater treatment facility-related traffic is not expected

to increase from its current nominal levels and the combined vehicle trips are not expected to adversely affect conditions on public roads or the Park entrance.

Preservation and interpretation actions at the existing maintenance site would be conducted after demolition activities included in Alternative A and, therefore, would not cause overlapping construction period-related traffic impacts in the area, at the Park entrance, or on public roadways. Future operational period traffic generation related to the preservation and interpretation actions at the existing maintenance facility site are unknown, but would likely be minimal and not interact with the operational period traffic patterns of Alternative A. Therefore, Alternative A is unlikely result in cumulative impacts to transportation facilities when combined with the impacts of the wastewater treatment facility upgrades at Site 1 or preservation and interpretation actions at the current maintenance facility site.

3.4.2.2 Alternative B (Mauka)

Alternative B is expected to result in temporary, minor impacts on transportation facilities. As in Alternative A, Alternative B is not intended or expected to increase in visitor capacity at the Park and no increases in visitor trips (motor vehicle, bicycle, or pedestrian).

During the construction period, there could be an additional 40 or so construction crew POVs along with construction vehicles and equipment accessing Site 2. Because parking at Site 2 is limited, the construction contractor would coordinate their employee POV parking with the Park to ensure adequate parking remains for staff requiring access to the existing resource management, storage, and dorm facilities at Site 2. The additional 80 vehicle trips (round trips) associated with construction at Site 2 represents 5 percent of the 2021 AADT on this segment of Keala o Keawe Road; a negligible temporary increase. This percentage would decrease if construction of the new facilities proceeds consecutively rather than concurrently. Therefore, construction crew-related traffic impacts on queuing at the Park entrance on public roadways are expected to be minimal. As in the Preferred Alternative, the contractor would implement applicable mitigation measures listed in Appendix A (see Mitigation Measures TF 1 through TF 5) to minimize offsite impacts on public roadways and neighboring residents and farms.

During the operational period, the approximately 20 POVs and 9 fleet vehicles would relocate to Site 2. A truck/trailer would also be used regularly to transport a backhoe, manlift, and UTVs between Site 2 and the main Park. There would be approximately 65 additional vehicle trips per weekday between Site 2 and the Park on Keala o Keawe Road. These additional trips represent 4 percent of the 2021 AADT on Keala o Keawe Road fronting Site 2. An estimated 20 to 25 vehicle trips from Site 2 into the Park would occur during the period of highest visitor vehicle traffic (i.e., 11:00 AM to 3:00 PM), potentially increasing queuing at the entry booth. However, Park-related vehicle volumes would represent a small percentage of the overall vehicles entering and exiting the Park and would move through the entry point quickly, minimizing any overall queuing delays.

As in Alternative A, pedestrian and bicycle facilities and usage are not related to the location of the resource management and maintenance facilities and are not expected to change under this alternative.

Cumulative Impacts. Because of their timing and location, the wastewater treatment project and preservation and interpretation actions at the existing maintenance site would not overlap with Alternative B's construction period impacts on queuing at the Park entrance or

potential impacts to public roadways. In the operational period, there would be low volumes of vehicle trips to the wastewater treatment facility similar to existing conditions. Future operational period traffic generation related to the preservation and interpretation actions at the existing maintenance facility site are unknown, but would likely be minimal and not interact with the operational period traffic patterns of Alternative B. Although in Alternative B, Park maintenance vehicles would continue to make trips to the current maintenance facility site, staff and their vehicles would primarily be located at Site 2 and their movements are unlikely to generate traffic volumes that cause adverse cumulative impacts to traffic circulation on public roads or within the Park.

Therefore, the incremental effects of Alternative B are unlikely to result in cumulative impacts on transportation facilities when considered in combination with past, present, and reasonably foreseeable actions.

3.4.2.3 Alternative C: No Action Alternative

Under this alternative, there would be no change to the existing types or volumes of vehicles entering, exiting, or operating within the Park or surrounding public roadways. No transportation facilities controlled or used by the Park would be impacted, including the privately-owned access road to Site 1. Therefore, the No Action Alternative would have no impact to transportation facilities. Under the No Action Alternative, transportation facilities would remain the same or similar to existing conditions, including impacts from foreseeable planned actions.

3.5 COMPARISON OF ALTERNATIVES

Table 3-3 provides a comparison of the environmental impacts of the three alternatives.

Issue Area	Alternative A: Makai (Proposed Action/ Preferred Alternative)	Alternative B: Mauka	Alternative C: No Action
Biological Species of Special Concern or Their Habitat	No direct impacts on species of special concern or their habitat. Potential, but unlikely indirect adverse impacts on protected or indigenous bird species due to construction noise and activity. Not likely to adversely affect protected species in the operational period. Informal ESA Section 7 consultation is being conducted.	May have unavoidable direct or indirect adverse impacts on protected plant species at the site. Mitigation measures would be identified in consultation with USFWS.	No impacts.

 TABLE 3-3
 ALTERNATIVES COMPARISON MATRIX
	Alternative A: Makai		Alternative C:
Issue Area	Preferred Alternative)	Alternative B: Mauka	No Action
Archeological	May result in minor	Similar potential for	No impact, but
Resources	adverse impacts to	adverse impacts as	continued use of
	archeological	Alternative A	existing facilities
	resources if there is	(potential inadvertent	would forego
	inadvertent discovery	discovery during	beneficial impact of
	during construction.	construction).	removing facilities
			from archeological
			site.
Cultural Landscapes	Beneficial impact	Same beneficial	No impact, but
	from removing	impact as in	continued use of
	existing maintenance	Alternative A. No	existing facilities
	facilities. Minor	impact to cultural	would forego
	adverse impacts at	landscape.	beneficial impact of
	Site 1 from		removing facilities
	introducing new		from the cultural
	structures into the		landscape.
	landscape.		
Native Hawaiian	Potential minor	Similar beneficial and	No impact, but
Concerns	adverse construction	adverse impacts as	continued use of
	period impacts due to	Alternative A during	existing facilities
	noise and activity.	the construction and	would forego
	Beneficial impacts	operational periods.	beneficial impact of
	during operational		from the cultural
	of ovicting facilities		londoono
	from the landscape		landscape.
Turnerstation	Tom the landscape.	T	NT. Successful
I ransportation	Temporary, minor	Temporary, minor	No impacts.
racinties	impacts during	impacts during	
	on public roadways	on public roadways	
	and Park entrance	(Keala o Keawe	
	Minimal increase in	Road) no impacts on	
	operational vehicle	Park entrance	
	trips on access road	Minimal operational	
	between Site 1 and	period impacts:	
	Park entrance. No	however, greater	
	impacts on Keala o	volume of vehicle	
	Keawe Road.	trips on public	
		roadways between	
		Site 2 and Park	
		entrance.	

4.0 PUBLIC INVOLVEMENT

NPS conducted civic engagement activities to ensure the public has opportunities to provide input on the project, the alternatives, scope of the EA, and findings. This chapter summarizes public involvement activities and major themes of the public comments received.

4.1 PRE-NEPA CIVIC ENGAGEMENT

During the pre-NEPA stage of the project, civic engagement took place in Spring and Summer 2021. Activities included virtual and in-person public meetings (July 14, 2021 and July 21, 2021, respectively), distribution of a project newsletter, discussions with the public, and invitations to comment on the Park's Planning, Environment and Public Comment (PEPC) website. Four to six people attended each public meeting. Major themes raised included: affirmation of the need for new facilities; concern and suggestions regarding the site selection process; and emphasis on the character of the park and importance of preserving archeological and spiritual features.

4.2 NEPA SCOPING

The NEPA public scoping period extended from October 28 through November 27, 2022. Virtual and in-person public scoping meetings were held on November 9 and 10, 2022, respectively. The project, EA scoping process, and public meetings were publicized on the Park's website, via a traditional press release, on a social media platform, and in-person at the Park by means of flyer distribution and display of posters at the Visitor Center. About five individuals attended the virtual meeting and about ten attended the in-person meeting. Six items of correspondence were received or postmarked within the scoping comment period: one federal agency, one state agency, one civic (Native Hawaiian) organization, and three unaffiliated individuals. The greatest percentage of comments concerned threatened and endangered species (28%), while project design was the focus of 17% of all comments. Other comments concerned invasive species, Native Hawaiian considerations, cultural resources, support of the overall project, and support of or opposition to specific alternatives (all less than 10% of the total comments). There was more opposition to Alternative B (six comments) than support (three comments). (Note: At the time of NEPA scoping, Alternative B included use of Site 3.)

Scoping comments included concerns that relocating the existing resource management and maintenance facilities from their current location near the coastline would result in the reduction of staff presence and visibility near archeological sites. Perceptions were also expressed that reduced staff presence could result in an increased risk of vandalism of cultural resources or less Park security in general. (Note: The Park will consider how to address these concerns through operational adjustments, as appropriate.)

4.3 EA PUBLIC REVIEW

This EA is undergoing formal public and agency review for 30 days and has been distributed to interested individuals, agencies, and organizations. The document was also made available online at https://parkplanning.nps.gov/puhorelocmaint. Before including personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time.

While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

5.0 REFERENCES

- AECOS Inc. 2022. Natural Resources and Special Status Species Report for Replacement of an Existing Maintenance Facility at Pu'uhonua o Hōnaunau, Island of Hawai'i. December 22, 2022.
- Barna, Benjamin, L. Kepa'a, and J. Dudoit. 2022. Addendum Cultural Resources Survey in Support of the PUHO Maintenance Buildings Project (PUHO 154441), National Park Service Contract No. P16PC00003.
- Barna, Benjamin, L. Kepa'a, J. Dudoit, and A. Ketner. 2021. Cultural Resources Survey in Support of the PUHO Maintenance Buildings Project (PUHO 154441), National Park Service Contract No. P16PC00003.
- Hennebery Eddy Architects. 2023. PUHO 154441 Pu'uhonua o Hōnaunau National Historical Park Maintenance Facility Replacement Visual Impact Assessment.
- MASON. 2021. Pu'uhonua o Hōnaunau National Historical Park: Reconnaissance Level Survey – Final Draft. September 3, 2021 letter report.
- NPS. 2001. Pu'uhonua o Hōnaunau Development Concept Plan/Environmental Assessment.
- NPS. 2009. Pu'uhonua o Hōnaunau National Historical Park Visitor Center Cultural Landscapes Inventory.
- NPS. 2017. Foundation Document: Pu'uhonua o Hōnaunau National Historical Park.
- NPS. 2019. Director's Order #28: Cultural Resource Management.
- NPS. 2022. NPS Stats YTD Report <u>https://irma.nps.gov/STATS/Reports/Park/PUHO</u> <u>https://irma.nps.gov/STATS/SSRSReports/Park%20Specific%20Reports/Park%20Y</u> <u>TD%20Version%201?Park=PUHO</u>. Accessed December 2022.
- State of Hawai'i. 2021.

https://histategis.maps.arcgis.com/apps/MapSeries/index.html?appid=39e4d8042427 40a89d3fd0bc76d8d7de. Accessed December 2022.

- USFWS (U.S. Fish and Wildlife Service). 2022. Recovery Plan for 50 Hawaiian Archipelago Species. U.S. Fish and Wildlife Service, Portland, OR.
- USFWS (U.S. Fish and Wildlife Service). 2023. ECOS Environmental Conservation Online System, Listed species believed to or known to occur in Hawai'i, https://ecos.fws.gov/ecp/report/species-listingsbystate?stateAbbrev=HI&stateName=Hawaii&statusCategory=Listed. Accessed April 18, 2023.

APPENDIX A

MITIGATION MEASURES

The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse impacts to affected resources, whether under the jurisdiction of the NPS or as a result of an NPS decision. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following mitigation measures will allow the NPS to meet its conservation mandates as required by the Organic Act (16 USC 1 et seq.) and as further detailed in NPS Management Policies, and the National Historical Preservation Act, the Endangered Species Act (16 USC 1531 et seq.), and Coastal Zone Management Act (16 USC 1451 et seq.). The NPS would also implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results.

Impact Area	Mitigation	Lead/
		Responsible Party
Biological Species of Special Concern or Their Habitat (Bio 1)	Protection of existing vegetation; diversion of surface water and control of dewatering discharge; sandbag barriers; and stabilized construction ingress and egress points.	Construction Contractor
Bio 2	No trees 15 feet or taller on the project site would be removed between June 1 and September 15 to avoid potential disturbance during pupping season to the endangered hoary bat.	NPS Construction Monitor
Bio 3	If large stature trees over 15 feet high are present in the project site, a pre-clearing nesting Hawaiian Hawk survey will be conducted by a qualified biologist to ensure that no active hawk nests will be disturbed.	NPS Construction Monitor
Bio 4	Construction mitigation measures would be put in place during construction to avoid impacts to special status species with the potential to occur in the project areas.	NPS Construction Monitor
Bio 5	In the unlikely event that a lava tube is encountered during installation of foundation footings, work would cease until the lava tube is assessed for biological resources and necessary mitigation measures are identified.	NPS Resource Staff
Bio 6	If removal of native or endangered plants is necessary at Site 2, minimization measures would include replanting new nursery-grown specimens (from seeds obtained from the trees onsite if possible).	NPS Resource Staff
Bio 7	Nighttime construction activities would be avoided to the extent practicable.	NPS Construction Monitor
Bio 8	Project-related outdoor lighting would be downward facing.	NPS Design Team
Bio 9	No barbed wire would be used on fencing or new structures.	NPS Design Team

Impact Area	Mitigation	Lead/
		Responsible Partv
Bio 10	Project materials, vehicles, machinery, and equipment must be pressure washed thoroughly (preferably with hot water) in a designated cleaning area. Project materials, vehicles, machinery, and equipment should be visibly free of mud/dirt (excluding aggregate), seeds, plant debris, insects, spiders, frogs (including frog eggs), other vertebrate species (e.g., rodents, mongoose, feral cats, reptiles, etc.), and rubbish. Areas of particular concern include bumpers, grills, hood compartments, wheel wells, undercarriage, cabs, and truck beds. Truck beds with accumulated material are prime sites for hitchhiking invasive species	Construction Contractor
Bio 11	The interior and exterior of vehicles, machinery, and equipment must be free of rubbish and food, which can attract pests (i.e., rodents and insects). The interiors of vehicles and the cabs of machinery should be vacuumed clean particularly for any plant material or seeds.	Construction Contractor
Bio 12	Following cleaning and/or treatment, project materials, vehicles, machinery, and equipment, must be visually inspected by its user, and be free of mud/dirt (excluding aggregate), debris, and invasive species prior to entry into a project site. For example, careful visual inspection of a vehicle's tires and undercarriage is recommended for any remaining mud that could contain invasive plant seeds.	Construction Contractor
Bio 13	Any project materials, vehicles, machinery, or equipment found to contain invasive species (e.g., plant seeds, invertebrates, rodents, mongoose, cats, reptiles, etc.) must not enter the project site until those invasive species are properly removed/treated.	Construction Contractor
Bio 14	Prior to entry into the project site, all project site personnel will visually inspect and clean clothes, boots or other footwear, backpack, radio harness, tools and other personal gear and equipment for insects, seeds, soil, plant parts, or other debris. Seeds found on clothing, footwear, backpacks, etc., should be placed in a secure bag or similar container and discarded in the trash rather than being dropped to ground at the project site or elsewhere.	Construction Contractor
Bio 15	Prior to the commencement of clearing and grubbing activities a survey for nesting passerines will be conducted by a qualified biologist and appropriate measures will be implemented to avoid impacts to the nest, eggs and young of any nesting bird species currently covered under the MBTA.	NPS Construction Monitor
Cultural Resources (CR 1)	During construction/demolition activities, archeological features will be protected by clearly establishing areas where surface disturbing activities are prohibited. This may include clearly marking or cordoning off specific areas of archeological concern.	NPS Resource Staff

Impact Area	Mitigation	Lead/
_		Responsible Party
CR 2	Final structure siting and design will incorporate a buffer of	NPS
	at least 15 feet from identified archeological features. No	Resource
	buffer.	Stall
CR 3	An Archeological Monitoring Plan would be prepared in	NPS
	consultation with Native Hawaiian Organizations and the	Resource
	surface disturbance.	Staff
CR 4	A qualified archeological monitor would be on site during	Construction
	all surface disturbing activities in case of inadvertent	Contractor
	Monitoring Plan are fully implemented.	
CR 5	A Native American Graves Protection and Repatriation Act	NPS
	(NAGPRA) Plan of Action [43 CFR 10.5(e)] would be	Resource
	prepared in consultation with Native Hawaiian	Staff
	(SHPO) prior to any ground disturbing activities. This plan	
	would guide NPS's response in the event that human	
	remains or other NAGPRA items are encountered during	
	construction.	
CR 6	All construction personnel working on site would be made	NPS
	aware of the relevant SOPs outlined in the Archeological	Resource
	activities are prohibited.	Stall
CR 7	If construction at Site 2 requires the removal of or	NPS
	irreversible damage to plants that are identified as	Resource
	site in suitable locations.	Stall
CR 8	Final facility design will consider and allow for continued	NPS
	access to culturally important areas. During construction,	Resource
	spiritually important to Native Hawaijans will be	Stall
	maintained to the maximum extent possible. In the event	
	that construction activities would temporarily impede	
	access, that information would be provided to and	
	coordinated with Hawaiians with lineal and cultural ties to Hōnaunau.	
CR 9	When construction activities would raise ambient noise	NPS
	levels to a point that would be potentially disruptive to	Resource
	cultural practices, that information would be provided to	Staff
	groups/individuals.	
Transportation	Flaggers could be used during work hours to control traffic	Construction
Facilities (TF1)	and visitors would be informed of construction activities	Contractor
	and associated delays.	

Impact Area	Mitigation	Lead/
		Responsible Party
TF 2	The contractor would prepare a Construction	Construction
	Management Plan to minimize offsite impacts on public	Contractor
	roadways and neighboring residents, which would address	
	public notification and timing of construction equipment	
	transport, among other specifications.	
TF 3	The contractor would obtain a Hawai'i Department of	Construction
	Transportation permit if transport of oversized and/or	Contractor
	overweight vehicles and loads on State highways is needed.	
TF 4	The contractor would be required to manage employee	Construction
	POV parking in a way to avoid or minimize impacts to	Contractor
	public roadway users.	
TF 5	The contractor would coordinate their employee POV	Construction
	parking with the Park to ensure adequate Park staff and	Contractor
	visitor parking capacity.	
Miscellaneous	All construction activities will comply with applicable	Construction
(Mis 1)	OSHA, state, and NPS project safety requirements,	Contractor
	including applicable seismic requirements.	
Mis 2	COVID-19 Awareness: Contractors shall provide safe on-	Construction
	site working conditions for their employees working on	Contractor
	and visiting NPS property. All work shall be performed in	
	accordance with all applicable local jurisdiction orders,	
	federal orders, and the CDC's guidance and	
	recommendations related to best safety practices during	
	the COVID-19 pandemic.	

APPENDIX B

Resource	Potential Issues, Impacts, and Rationale for Dismissal
Air Quality	Overall, there could be a local, short-term, negligible degradation of local air quality during construction activities; however, no measurable effects outside of the immediate construction site would be anticipated. Such impacts would end with the cessation of construction.
Biological - Nonnative or Exotic Species	With implementation of mitigation measures, impacts associated with nonnative or exotic species would be minimal and/or beneficial. Following construction, the park would follow existing invasive management practices.
Biological - Vegetation	Impacts to non-listed vegetation species vary between sites. At Site 1, there is expected to be negligible impacts to vegetation species as these species are not unique or abundant at these locations.
	At Site 2, known presence of listed plant species are discussed in the EA under "Biological Species of Special Concern or Their Habitat."
Biological - Wildlife and/or Wildlife Habitat including terrestrial and aquatic species	No anticipated impacts to wildlife or habitat beyond temporary noise and disturbance during construction. Mitigation measure will be implemented to minimize impacts to wildlife, especially listed species in the area in consultation with USFWS.
Cultural - Ethnographic Resources	Discussed in the EA under Native Hawaiian Concerns.
Cultural - Museum Collections	Site 2 directly surrounds a resource management facility, an open air and climate-controlled facility. Construction period contractor specifications will ensure continued protection of resources in the facility and minimal project impacts are anticipated.
Cultural - Prehistoric/historic structures	An analysis and determination of eligibility for the seven existing structures at the current maintenance facility was conducted. These structures would be demolished and removed under either action alternative. Based on the study, the structures were determined not eligible for listing on the National Register (Raftery 2021). In addition, a context study and determination of eligibility for old Hōnaunau Road was also conducted (Rumsey 2023). A portion of this road would be improved under Alternative A. Based on the results of this study the road has been determined not eligible for listing on the National Register. Consultation with SHPO for concurrence with these determinations is ongoing.

ISSUES AND IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

Resource	Potential Issues, Impacts, and Rationale for Dismissal
Environmental	Executive Order 12898. "General Actions to Address Environmental
Iustice	Justice in Minority Populations and Low-Income Populations" (1994)
Justice	requires all federal agencies to incorporate environmental justice into
	their missions by identifying and addressing the dispropertionately high
	then missions by identifying and addressing the disproportionately night
	and/or adverse numan nearth or environmental effects of their programs
	and policies on minorities and low-income populations and communities.
	According to the EPA, environmental justice is the fair treatment and
	meaningful involvement of all people, regardless of race, color, national
	origin, or income, with respect to the development, implementation, and
	enforcement of environmental laws, regulations and policies." The goal of
	"fair treatment" is not to shift risks among populations, but to identify
	potentially disproportionately high and adverse effects and identify
	alternatives that may mitigate these impacts. Environmental justice is
	dismissed as an impact topic for the following reasons:
	• The NPS solicited public participation as part of the planning process
	and gave equal consideration to all input from persons regardless of age,
	race, income status, or other socioeconomic or demographic factors.
	• Implementation of the proposed action would not result in any
	identifiable adverse human health effects. Therefore, there would be no
	direct or indirect adverse impacts on any minority or low income
	nonulation
	• The impacts associated with implementation of the proposed action
	would not disproportionately affect any minority or low-income
	population or community.
	• Implementation of the proposed action would not result in any
	identified effects that would be specific to any minority or low-income
	community.
Geological -	There are no unique or significant geological features within the proposed
Geologic Features	action project area. The proposed construction would include bored
8	foundation footings. Geotechnical investigations are planned and design
	efforts will be made to avoid and/or minimize impacts to geological
	features. Depending on the results of the survey and the ability for
	construction avoidance, minor impacts to geological features could result
Coological	The proposed actions are not anticipated to alter geological processes of
Coological -	the proposed actions are not anticipated to after geological processes of
Geologic Processes	ine area.

Resource	Potential Issues, Impacts, and Rationale for Dismissal
Greenhouse Gases/Climate Change	Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). Climate change describes a collection of phenomena, such as increasing temperatures and rising sea levels, occurring across the globe due to increasing anthropogenic emissions of GHGs (USEPA, 2022). NPS recognizes the need to address climate change as a fundamental human and environmental issue and has considered climate change resiliency in the design and planning of the proposed action. The proposed action would move existing resource management and maintenance facilities away from their current coastal location and improve the Park's climate change resiliency. The proposed action would not exacerbate environmental conditions already resulting from climate change (e.g., increased precipitation, flooding), and would instead alleviate the impacts of climate change by safeguarding against existing and anticipated climate change effects (e.g., coastal hazards and sea level rise).
	The project would result in a temporary increase in GHG emissions, lasting for the approximately two- to four-year construction period. These emissions would be short-term, remain localized, and would not be substantial enough to affect climate change trends at a regional, state, national, or global scale.
	Given the overall benefit that would result from this project, a quantitative emissions analysis was not conducted. This topic was, therefore, dismissed from additional analysis in this EA.
Lightscapes	The NPS would ensure that appropriate emission spectrum lighting is used and that the use of artificial outdoor lighting is limited to that which is necessary for basic safety requirements and to ensure that all outdoor lighting is shielded to the maximum extent possible, to keep light on the intended subject and out of the night sky.
Marine or Estuarine Resources	The project would remove maintenance facilities and a cesspool-served toilet from the projected inundation (and future sea level rise) zone along the coast, which would result in a beneficial impact to marine or estuarine resources. This would result in beneficial impacts to marine or estuarine resources.
Other Human Health and Safety	Both action alternatives will not impact human health or safety. Construction-related vehicle traffic risks to human safety would be minimized through the contractor's implementation of BMPs to be described in a Construction Management Plan. BMPs may include signage, reduced posted speed limits, alternate pedestrian routes, traffic flaggers, and lighting.
Recreation resources, including supply, demand, visitation, activities, etc.	Construction period impacts to the visitor experience due to construction-related noise, vehicle movements, and activity in areas visible to the public. The existing and proposed maintenance facilities are for staff functions and therefore their location will not affect visitor activities in the long-term; however, their removal from the sensitive archeological and coastal area could have beneficial impacts for the visitor interpretation of this area. Neither alternative is intended to change the Park's visitor capacity or demand.

Resource	Potential Issues, Impacts, and Rationale for Dismissal
Socioeconomic - Land Use	Implementation of the proposed action would neither change local and regional land use or zoning.
Socioeconomic - Minority and low- income populations, size, migration patterns, etc.	There would be no direct or indirect adverse effects on any minority or low-income population. Impacts associated with the proposed action would not disproportionately affect any minority or low-income population or community and would not result in any identified effects that would be specific to any minority or low-income community.
Socioeconomic - Socioeconomic	not alter the physical and social structure of the nearby communities. Implementation of the proposed action would neither change local and regional land use or zoning nor appreciably impact local businesses or
	other agencies. Construction activities could provide a negligible beneficial impact to the local economy, e.g., an increase in employment opportunities for the construction workforce and a modest increase in revenues for local businesses and government generated from construction activities and workers. Any increase, however, would be temporary, lasting only as long as construction activities. No change in park employment due to project.
Soundscapes	Any construction associated with implementation of the alternatives, e.g., the hauling of material or the operation of construction equipment, could result in dissonant sounds, but such sounds would be temporary. Noise associated with the driving of piles for the new buildings would take into consideration seasonal and hourly restrictions for noise sensitive uses (e.g., neighboring residences).
Viewsheds	Viewshed are discussed under Cultural Landscapes and Native Hawaiian Concerns.
Unique ecosystems, biosphere reserves, World Heritage Sites	Not applicable.
Unique or important wildlife or wildlife habitat	Not applicable.
Unique, essential or important fish or fish habitat	Not applicable.

Resource	Potential Issues, Impacts, and Rationale for Dismissal
Visitor Use and Experience	There may be temporary traffic impacts to visitors during construction for both alternatives due to potential increased vehicle queuing at the Park entrance. (Traffic impacts are addressed in the EA under Transportation Facilities.) However, it is anticipated that the heaviest contractor traffic volumes would occur earlier or later in the day than the highest volumes of visitor vehicle traffic. The construction contractor will coordinate their employee POV parking with the Park to ensure adequate Park staff and visitor parking capacity (Mitigation Measure TF 5).
	Construction-related noise at Site 1 and the picnic area near the existing maintenance facilities may also temporarily impact visitor use and experience within the Park. However, these impacts would be temporary and intermittent, depending on the activity type. Construction at Site 2 would have no impact to visitor use and experience.
	Traffic flow and vehicle access along roads and to sites in the vicinity of construction areas within the Park could be temporarily restricted during construction. Traffic may be periodically subjected to alternating, one-way flow. Flaggers could be used during work hours to control traffic and visitors would be informed of construction activities and associated delays. Construction contractor would be required to manage employee parking in a way to avoid or minimize impacts to public roadway users.
	Upon completion of demolition, impacts to the visitor experience would be beneficial at the picnic area due to the improved aesthetics and cultural resource interpretation with the removal of the maintenance buildings.
	All construction activities will comply with applicable OSHA, state, and NPS project safety requirements, including applicable seismic requirements.
	COVID-19 Awareness: Contractors shall provide safe on-site working conditions for their employees working on and visiting NPS property. All work shall be performed in accordance with all applicable local jurisdiction orders, federal orders, and the CDC's guidance and recommendations related to best safety practices during the COVID-19 pandemic.
	Long-term change to traffic patterns for both alternatives with increased park use through the entrance gate would involve increased Park fleet vehicle movements through the entry point, potentially affecting visitor vehicle queuing. At Site 1, staff traffic patterns would change from existing conditions and the park staff will have to drive through the entrance gate into the main part of the park, potentially adding to traffic at the queue. However, fleet vehicles would generally remain within the main Park areas during work hours and their ingress into the Park would be rapid because no payment transaction would be made at the booth.

Resource	Potential Issues, Impacts, and Rationale for Dismissal
Visitor Use and Experience (continued)	At Site 2, staff traffic patterns would change from existing conditions and vehicle trips by park staff and fleet vehicles will be made from Site 2 (3 miles away) through the entrance gate, potentially adding to traffic at the queue. However, Park-related vehicle volumes would represent a small percentage of the overall vehicles entering and exiting the Park and would move through the entry point quickly, minimizing any overall queuing delays. Neither alternative would provide visitor access to the new facility locations at Site 1 or 2
Wator	The underlying lave flows and limited soil development in the park are
Stream flow characteristics	very porous and consequently surface water features are absent. There are no perennial streams or wetlands within the project areas.
Water - Water Quality/Quantity	The project would remove maintenance facilities and a pit toilet from the projected inundation (and future sea level rise) zone along the coast, which would result in a beneficial impact to water quality. Minor effect. Is called a "projected inundation zone" for future sea level rise. Beneficial effect, dismiss
Water - Wetlands	The lava flows and scattered soils in the park are very porous and consequently surface water features are absent. There are no perennial streams or wetlands within the project areas.
Floodplains	Both alternatives would result in beneficial effects at the existing maintenance facility site by removing the buildings and uses from an area subjected to coastal flooding. According to Director's Order #77-2, maintenance facilities are considered a Class I action and since the Preferred Alternative location (Site 1) falls in Zone D, which is outside of the 100-year regulatory floodplain a floodplain statement of findings would not be required. Moving the facilities further inland away from the 100-year floodplain (Zone AE) would result in a beneficial impact to the structures and the safety of park staff.
	At Site 2, a regulatory floodway crosses through the northeast corner of the parcel. This area will be avoided for construction. In response to comments from the Hawai'i Department of Land and Natural Resources Engineering Division, any facilities constructed at Site 2 will avoid the designated regulatory floodway.
Other Operations	Both alternatives increase park use of public roads after construction is complete. Increased traffic volumes due to Park maintenance vehicles could contribute to entrance gate traffic and blocking of ingress/egress at adjacent private properties. Impacts are expected to be minimal due to the relatively low traffic volumes associated with the Park vehicle movements.

Resource	Potential Issues, Impacts, and Rationale for Dismissal
Other Coastal Zone	Hawaii's designated coastal zone includes all land areas of the state and extends seaward three miles to the limit of the state's jurisdiction. However, moving these facilities further inland and out of the projected inundation (and future sea level rise) zone along the coast could be considered a beneficial impact. Regardless, a CZMA consistency determination will be required and conducted prior to project implementation.
Wilderness	Not applicable.

APPENDIX C VISUAL IMPACT ASSESSMENT

VISUAL IMPACT ASSESSMENT

PUHO 154441



National Park Service (NPS) PU'UHONUA O HŌNAUNAU NATIONAL HISTORIC PARK (PUHO) Maintenance Facility Replacement 12 May 2023

Contents

Introduction	1
Scope of Work Summary	1.1
Purpose of the Visual Impact Assessment	1.2
Background	2
Project Description	2.1
Site Character Descriptions	2.2
Description of Alternatives	2.3
Visual Inventory	3
Methodology	3.1
Visual Analysis	3.2
KOP Descriptions	3.3
Viewer Groups and Sensitivity	3.4
National Park Service Interest	3.5
Viewer Groups	4
Viewer Groups and Sensitivity	4.1
National Park Service Interest	4.2
Impacts and Mitigation	5
Impacts to Viewers	5.1
Summary of Impact	5.2
Mitigation Strategies	5.3
Visualizations	6
References, Figures, & Tables	7
References	7.1
Figures	7.2
Tables	7.3
Images	7.4

Project Address: State Hwy 160 Hōnaunau, HI 96726

Hennebery Eddy Architects Contact: Will Ives 921 SW Washington St., Suite 250 Portland, OR 97205

HHF Planners Contact: Gail Renard 733 Bishop St., #2590 Honolulu, HI 96813

Introduction 1

1.1 SCOPE OF WORK SUMMARY

The National Park Service (NPS) proposes to construct a new Maintenance and Resource Management Facility at Pu'uhonua o Hōnaunau National Historic Park (PUHO). A Value Analysis Study (VA) completed on September 30th and October 1st, 2021 resulted in a recommendation that two design alternatives be considered. The alternatives will be referred to in this report as Alternative A (Site 1 or Makai) and Alternative B (Site 2 or Mauka). In Hawaiian, Makai means seaward or out to the ocean and Mauka means upland or toward the mountains.

1.2 PURPOSE OF THE VISUAL IMPACT ASSESSMENT

The purpose of this Visual Impact Assessment is to analyze potential impacts of the proposed work. Evaluation includes site character descriptions and a visual inventory that details landscape character, visual elements, and spatial composition. The report provides descriptions of design alternatives under consideration and visualizations from Key Observation Points (KOPs). The visibility analysis is a critical part of the VIA because it identifies areas subject to direct visual impacts from the project. The primary tool for determining potential visibility of the proposed project is the viewshed analysis, a GIS spatial analysis that uses elevation data (and sometimes landcover data) to determine which parts of the surrounding landscape are visible from a designated point or points. This analysis is based on an understanding of current conditions and thereby is theoretical as vegetation and other conditions change overtime.

A critical early step in the VIA process is to determine the geographic scope of the impact assessment to limit the area of detailed investigation. Visual impacts are assessed from lands with views of the project and the associated activities (e.g., project construction). VIA analysts use the term viewshed to describe areas visible from a given point or points, and determining the project's viewshed is a key step in the VIA, because it identifies areas from which there may be views of the project. Identifying the viewshed for the project and the associated activities is accomplished primarily through viewshed analysis, a spatial analysis that uses elevation and landcover data to determine which parts of the surrounding landscape are likely to be visible from a designated point or points. The analyst must also determine the distance away from the project that will be the outer limit or geographic extent of the analysis for visual impacts, sometimes referred to as the Study Area, the Zone of Visual Influence, or Area of Potential Effect. The appropriate area varies by project type and location.

The result of the viewshed analysis is the viewshed map, which generally uses color shading to show which areas have views of the project. Unshaded areas are screened by topography, vegetation, or structures, and therefore do not have views of the project. The viewshed map is used to identify sensitive visual resource areas (e.g., national, state, or local parks, historic sites, trails, and cultural landscapes) and other sensitive viewpoints (e.g., residential areas) that would have views of the project and thus may be subject to visual impacts from the project. From these areas, KOPs are selected. (Guide to Evaluating Visual Impact Assessments for Renewable Energy Projects, Natural Resource Report NPS/ARD/NRR – 2014/836; 3.6 Visibility and Viewshed Analysis)

Background 2

2.1 PROJECT DESCRIPTION

This project will remove existing park maintenance and resource management field buildings and associated utilities from an archaeological site located adjacent to a highly sensitive Pacific Ocean tidal and coastal zone. The existing buildings are located on and around significant Hawaiian archeological features, are considered unsafe and non-compliant with current safety codes, and are the last group of structures to be removed from their original location.

A new maintenance facility will be constructed in a more appropriate location. The new facility will be shared with resource management staff and shall meet all current and foreseeable future park maintenance and resource needs. The new buildings will be constructed on sites which are accessible, unobtrusive, and avoid adversely affecting park resources.

Two design alternatives, Alternative A (Site 1 or Makai) and Alternative B (Site 2 or Mauka), are being considered in this Visual Impact Assessment. Between the two alternatives, there are two potential project sites (see Figure 1). See section 2.2 site character descriptions and section 2.3 for detailed descriptions of the alternatives. Both alternatives propose the removal of existing maintenance facilities.

Note: Previous project studies have included reference to "Site 3," which is located southeast of the Mission 66 era parking lot. This location is primarily previously disturbed ground with minimal vegetation and is currently used for site material storage (rock and similar). Through further study, all proposed changes at Site 3 have been dismissed due to the potential for significant visual impact in an active area of the park. Site 3 may still be used for material storage in either alternative, but as this is not a change from the current use, no visual analysis of Site 3 is included in this document.



Image 1: View looking mauka towards the Great Wall with the Royal Grounds beyond. The stone structure on the left is 'Āle'ale'a Heiau . | NPS



Image 2: Existing Maintenance Facilities



Figure 1. Site Locator Map

See section 3 Visual Inventory for specific views studied as part of this assessment.

2.2 SITE CHARACTER DESCRIPTIONS

SITE 1 OR MAKAI

Site 1 or Makai is located at the northeast corner of the park and accessed via a partially paved road. This site is not located in a commonly visited area of the park, but new buildings may be visible from select observation points. Construction at this site will prioritize avoidance of known archaeological features, minimization of excavation, and the use of previously disturbed ground to meet project needs. A wastewater treatment facility (under a separate NPS project) is also planned at the southern end of this site. See figure 2.



Image 3: Road through Site 1

SITE 2 OR MAUKA

Site 2 or Mauka is a parcel of land owned by the National Park Service that is approximately ten minutes outside of the park by car. Three existing buildings are located at the site and will remain in-place with their current functions unchanged. This site does not contain any known archaeological resources and has more abundant vegetation than the site within the park, including trees, shrubs, and dense ground cover in some areas. See figure 3.



Image 4: Vegetation at Site 2

GENERAL

Site 1 or Makai is the most sensitive due to the archaeological resources located inside the park, adjacency to key historic and cultural landmarks, and potential impact to visitor activities. Archaeological resources have not been found at Site 2 or Mauka and the use of this site is currently limited to park staff. This assessment considers the potential visual impact of proposed construction or storage at these sites.

Location	Landscape Character	Visual Elements	Spatial Composition
Site 1 or Makai	Site is covered in sparse vegetation, dominated by scrub growth of koa haole, growing on recent lava flows. This site will be shared with the water treatment facility (under a separate NPS project).	The terrain at this site is rolling and archaeological features are located in several areas adjacent to the existing road. When choosing locations for the proposed buildings, great care was taken to avoid and provide a buffer around these features.	The existing buildings at this site will be demolished and replaced with the proposed maintenance and resource management facilities. The maximum building height is approximately 20 feet above grade.
Site 2 or Mauka	Site is a partially open canopy forest. Many of the trees are a result of plantings in the last 40 years. Small shrubs and weedy herbs densely cover the mixed rock and shallow ground soil around the trees.	Site slopes downward toward the west, providing potential for views. The proposed buildings are located to reduce required excavation, avoid a floodplain and avoid disturbance to existing structures. The visual impact at this site is negligible because it is not located within the park and does not affect visitor experience.	The general scale and massing of the proposed structures is comparable to the existing structures. The maximum building height is approximately 22 feet above grade.

Table 1. Site Inventory

2.3 DESCRIPTION OF ALTERNATIVES

Scope Common to both Alternatives

The existing maintenance facilities will be demolished to restore a more natural appearance and facilities will be relocated in a less impactful location. There will be no new planting at the area of demolition and the new landscaping will be limited to mitigating areas of the sites impacted by new construction activities. The objective of any new planting efforts is to restore the areas of disturbance from construction activities, not to restore the larger surrounding area.

Alternative A (Site 1 or Makai)

This alternative locates most of the program at Site 1 or Makai, efficiently grouping nearly all of the program functions at one location within the Park.

This alternative requires access from the Park entrance to Site 1 via an easement over the existing road. The routing of the existing vehicular entry from the access road into Site 1 is generally maintained in this alternative however, this entry will need to be rebuilt and widened to accommodate emergency vehicles and other vehicular and equipment access. The existing vehicular access is gravel, and the width is varied, generally between 12-18 feet. To align with fire codes, it is anticipated that the new vehicular access would be paved to a width of 20'-0" with approximately 6" wide gravel shoulders, for a total width of 21'-0". As part of reconstruction of the road, and to consolidate site disturbance, it is anticipated that a new water service will be located under the road. Other utilities may also be included as need is determined in future design phases.

The resource management building would be approximately 3,700 sq ft, 18'-0" tall and located at the entrance to the site so that administrative and visitor traffic will not interfere with maintenance operations located further down the driveway. This building would have a raised floor with pier foundations to minimize ground disturbance and to work with the varied topography in this location. The resource management building will have good passive orientation with minimal east and west exposure. However, the maintenance building will have a primarily east and west exposure and will need larger overhangs and other measures to mitigate solar heat gain and glare.

The maintenance building (including resource management tools and vehicle wash station) would be approximately 5,900 sq ft, the Fleet Parking building would be approximately 2,800 sq ft, and both buildings would be between 17'-0" and 20'-0" feet tall with gabled roofs. These structures would be concentrated near the existing wastewater facilities and existing buildings to be removed. To minimize impact to known archaeological features and to the existing landscape, these new buildings are primarily located in an area that was previously graded and disturbed. This allows for the required slab on grade foundations with perimeter footings to accommodate vehicular loads. This construction location works well with the existing topography, with only about a 5'-0" variation in elevation from north to south. The wastewater management facility will remain.

Alternative B (Site 2 or Mauka)

This alternative is distinct from Alternative A because the all of the program is located outside of the main Park at Site 2 or Mauka, a remote, 3-acre Park-owned property approximately 3 miles to the east. This site has three existing buildings, which will remain. The site topography is generally steep and consistently slopes up towards the east. This site also contains a floodplain crossing the northeast section of the site which buildings must avoid.

The resource management building would be approximately 4,750 sq ft, the maintenance building (including resource management tools and storage) would be approximately 7,950 sq ft, and the fleet building with washing station would be approximately 3,700 sq ft. These structures would range from approximately 18'-0" to 24'-0" feet tall depending on the grade, and would be located to the south and east of the existing buildings.

This site will require significant grading and a retaining wall along the east to provide a level area for driveways, parking, emergency vehicle turnaround, and the new buildings. The maintenance and resource management tools buildings are anticipated to have concrete slab on grade with perimeter footing foundations. The resource management building is anticipated to have a raised floor with pier foundation to minimize site disturbance and work with the existing topography. The resource management office building is proposed as a gable roof structure with overhangs. All other buildings are proposed as shed roof structures with overhangs.

The existing driveway leading up to Site 2 will need to be widened and repaved to accommodate emergency vehicles and other vehicular and equipment access. To align with fire codes, it is anticipated that the new road would be paved to a width of 20'-0" with an additional 6" gravel shoulders on both sides for a total width of 21'-0" and will generally follow the route of the existing driveway. Parking for both the existing functions and for the new program will need to be accommodated on the site; the total parking and working yard area is anticipated to be 22,000 sq ft.



NPS | Pu'uhonua O Hōnaunau Maintenance Facility | 12 May 2023



Figure 3. Alternative B

Visual Inventory 3

3.1 METHODOLOGY

A Visual Inventory was developed to support the Visual Impact Assessment by providing a foundation for analyzing visual change. Data was collected to identify the qualities and conditions of the existing landscape and viewer groups for those locations. Visual character descriptions of each site provide an overview of the conditions and the Visual Inventory Table (see Table 2) includes brief narratives identifying the character, visual resources, and spatial composition of each KOP.

In addition to the visual characteristics of each KOP, it is important to consider the different viewer groups that view and use the locations at each KOP. The first inventory component is the type of viewer (casual eye, critical observer, or repeat local observer). Casual eye viewers expect to see a scenic landscape but often have little prior knowledge about the location and depend on and enjoy interpretation to gain information. Critical observers have special knowledge that contributes to their interpretation of the view (e.g., photographers, painters, bird watchers) and authenticity of the place may be an important item for these viewers. Repeat local observers include PUHO personnel, partners, and commercial use authorization holders, visitors whose connection to the landscape is generational with a considerable concern for changes to the landscape.

3.2 VISUAL ANALYSIS

In collaboration with park staff, eight key observation points (KOPs) were considered and five were selected for further analysis. Visibility was determined through site visits and modeled over aerial photography using open-source digital elevation model (DEM) data to confirm the validity of proposed KOPs and analyze the visibility of the sites from KOPs under consideration.

Viewshed analysis was performed using open-source DEM data in GIS software. A point was plotted approximately 5'-0" above the crest of the tallest existing structure roofline at Site 1 to determine visibility to that point within the boundaries of the DEM data set. This point estimates the approximate position and elevation of the rooflines of the new structures proposed at Site 1 for Alternative A. An additional set of points were plotted at each KOP under consideration and a viewshed analysis algorithm generated an output layer visualizing the surface within the DEM data set from which the point plotted above Site 1 is visible. Figure 4 illustrates the viewshed analysis for Alternative A.

Site 2 DEM files were not available at the same resolution as site 1, so a similar viewshed analysis was not feasible; The DEM covering Site 1 gathered approximate elevations of geological topography as well as building roof elevation data. Site 2 occupies a tract of land adjacent to Highway 160, and its immediate context is defined by agricultural and residential buildings surrounded by dense vegetation. Visibility from the West will be limited due to dense vegetation and steep topography along the West edge of the property adjacent to the Highway. Limited change to existing viewsheds is anticipated as this alternative is planned in close proximity to several existing structures and the new structures will likely be no taller than the existing. There are limited viewpoints within the vicinity, assumed to be 200 feet with clear line of site to new structures. Visibility from the East will be limited as several of the structures will be built into the existing grade – with approximately 5ft visible above grade on the Eastern side. The new structures will likely be visible



Figure 4. Viewshed Analysis - Alternative A

from immediately adjacent properties to the North and South, but dense vegetation between properties will likely limit views from those directions. A simulation of the view from the Southwestern edge of the property toward the Resource Management building illustrates its visibility (Figure 21) and Table 3 describes the KOP visual change.

Views assessed in the VIA were selected based on the following criteria: visibility to the public, cultural importance, potential impact on park services and activities, construction proposed, and other minor factors. Public input was also requested during public scoping meetings held on November 8 and 9, 2022.

The Views assessed from each KOP are as follows:

KOP 1: Highway 160 Entering Park

Highway 160 to Site 1 (Alternative A)

KOP 2: Visitor Center Parking

Visitor Center Parking to Site 1 (Alternative A)

KOP 3: Pu'uhonua to Site 1

Pu'uhonua to Site 1 (Alternative A)

KOP 4: Existing Maintenance Facilities

Parking to Existing Maintenance Facilities

KOP 5: Highway 160 at Site 2

Highway 160 to Site 2 (Alternative B)



Image 5: Carving in front of stacked stone wall | NPS

Viewshed maps and before and after visualizations are included for each KOP impacted by the project alternatives in section 6 Visualizations.

3.3 KOP DESCRIPTIONS

KOP 1: HIGHWAY 160 ENTERING PARK

This KOP includes a study of the view from Highway 160 looking toward Site 1. The KOP is approximately 350 feet northwest of the project area and approximately 540 feet from the nearest visible structure.



Image 6: KOP 1

KOP 2: VISITOR CENTER PARKING

This KOP is located within the National Register eligible Mission 66 era Park Visitor Center Complex looking east toward the Mauna Loa slope. The parking lot is frequented by visitors; however, Site 1 is screened by topography and vegetation.



Image 7: KOP 2

KOP 3: ROYAL GROUNDS

This KOP is adjacent to and just north of the Great Wall looking east from Pu'uhonua toward Site 1. The fishponds are in the foreground, the visitor center in the midground, and Site 1 is in the background. The project site begins approximately 970 feet east KOP 3.



Image 8: KOP 3

KOP 4: EXISTING MAINTENANCE FACILITIES

This KOP is located south of the Great Wall at the picnic area and parking of the existing maintenance facilities. The project proposes to remove the structures at this KOP, extending the views to the east toward the Mauna Loa slope.



Image 9: KOP 4

KOP 5: HIGHWAY 160 AT SITE 2

This KOP is located along Highway 160 outside of the park boundary and at the southern corner of Site 2. A steep grade change and existing vegetation along this edge helps to screen the site.



Image 10: KOP 5

Figure 5. Site Map - Site 1



Figure 6. Site Map - Site 2



Location	Landscape Character	Visual Elements	Spatial Composition
KOP 1 Highway 160 (Alternative A)	The landscape character is defined by natural elements of the Mauna Loa slope. The paved highway is visible in the immediate foreground, however the vegetated hillside comprises the majority of the view. The Pacific Ocean and horizon are visible in the background.	Flowering shrubs and trees comprise the majority of the foreground and mid-ground of the view. Man-made elements consist of an asphalt road, a steel guardrail, and a small number of rooftops amongst the tree canopy beyond.	Dense green foliage comprises the majority of the view, separating the highway at foreground from distant hills and ocean in the background.
KOP 2 Mission 66 Parking Lot (Alternative A)	The landscape is a mixture of man-made and natural elements. The parking lot opens to views of the sky and the vegetated hills in the background, and a steep slope along the east edge of the parking lot defines the midground visible between trunks of palm trees.	The Visitor Center Parking Lot defines the immediate context. Parked vehicles, asphalt, and roadway signs are visible. Palm trees of varying heights, yellow grasses, and gray lava rock are visible between paved landscape. Residences sparsely populating the Mauna Loa slope and the sky are visible in the background.	The view is divided approximately in half horizontally; vehicular parking and controlled vegetation in the foreground and naturally vegetated slope and sky in the background. A small, sparsely vegetated horizontal band of rocky hill is visible in the midground.
KOP 3 Royal Grounds (Alternative A)	The view is composed of natural landscape, cultural, and archaeological and historic elements. Tall palm trees and dense vegetation partially obscure views of the visitor center pavilion. Residential properties sparsely populate the densely vegetated Mauna Loa slope, which is mostly visible under a low cloud in the overcast sky beyond.	Natural elements include tall Palm trees, dense mid- and background vegetation and black rock from lava flows. Cultural, archaeological, and built elements include a lava rock barrier around the fish pond, sand paths, the wood-shingled roof of the visitor center pavilion, and sparsely populated residences dotting the slope. Park visitors can be seen in the midground.	The view focuses on mid- ground elements like palm trees, vegetation and sandy paths winding between lava rock. The foreground is mostly cut off from the bottom edge of the view. Beyond the midground vegetation, the green slope fades to misty gray of the overcast sky.

Table 2. KOP Visual Inventory

Location	Landscape Character	Visual Elements	Spatial Composition
KOP 4 Existing Maintenance Facility (Alternatives A & B)	Although set between the rocky coastline and open canopy forest, the view is obscured by the temporary buildings, covered storage, and parking lot of the existing maintenance facility. The Mauna Loa slope defines the background of the view and can be seen over the existing maintenance facility roof lines.	A gravel and sand parking lot for fleet vehicles occupies the foreground, much of which is lined by a low lava rock wall. Beyond the wall are single-story buildings and covered storage canopies clad with tan siding. The structure visible to the north has a white fabric canopy and metal roofs cover the structures to the south. Stacked building supplies can be seen between regular wood columns of the open structures. Palm trees and low shrubs occupy the midground between the existing structures and the Mauna Loa slope beyond.	The view is divided horizontally from foreground to background. The charcoal black rocks comprising the low wall divide the sandy gravel parking lot and the tan cladding of the existing structures. Palm tree canopies punctuate the overcast sky. Clouds obscure views of the mountains beyond the Mauna Loa slope.
KOP 5 Site 2 (Alternative B)	The view is primarily composed of man-made and landscaped elements. The excavated rock of the property along the highway impedes the view to most of the mid- and background elements beyond.	A chain-link fence atop a rocky barrier lines the property and is set back several feet from the paved highway. On-site vegetation is visible behind the fence. Canopies of the trees occupy the midground, but the trunks are obscured by foreground vegetation. Powerlines extending into the property are visible over the tops of the tree canopies.	The gray highway and rocky property edge, green and yellow vegetation, and overcast sky define the horizontal thirds of the view from foreground to background. The chain-link fence atop the rocks of the property edge is the most readily apparent foreground feature.

Viewer Groups 4

4.1 VIEWER GROUPS AND SENSITIVITY

Different viewer groups were analyzed for each KOP to understand how viewers would respond to the proposed interventions of the project. Due to the accessibility of each KOP and the range of visitors to the park, every KOP is expected to have casual eye observers, critical observers, and repeat local observer viewers, each with different visual and experiential expectations (VIA Methodology and Guidelines, 2022).

Local and outside visitors to PUHO have access to a variety of activities within the park. The park has deep cultural and spiritual significance to native Hawaiians, who actively use sites and features within the park for traditional practices (PUHO EA, 2023). Hiking, picnicking, bird watching, and attending park events and programs are among the most popular activities in Pu'uhonua o Hōnaunau. In 2022, the park was visited by 311,441 people. Casual eye observers and critical observers describe many of the international and mainland USA visitors, although this does not exclude local visitors and park staff.

Due to the spiritual and cultural significance of park to Hawaii at large, Native Hawaiians were distinguished among the viewer groups as they actively use sites and features within the park for traditional practices. As described in the Park's Foundation Document, it "...is integral in supporting the revitalization and continuation of cultural identity through a myriad of cultural practices... Many of the park's cultural sites, objects, landscapes, and natural resources remain important touchstones that contribute to Native Hawaiian identity and heritage" (NPS, 2017). Ceremonial sites considered sacred spaces to Native Hawaiians include the Royal Grounds, Pu'uhonua, and Hale o Keawe and are used daily. Consultation with the Native Hawaiian community to solicit more information on ethnographic resources and potential impacts to those resources in the proposed project areas is ongoing (PUHO EA, 2023).

4.2 NATIONAL PARK SERVICE INTEREST

From a park-wide perspective the new structures for either alternative will be designed for the use only by PUHO park personnel and will not be accessed by the public. The project areas at Site 1 and 2 currently under consideration make maximum use of previously developed space with existing surface disturbance. Proposed new facilities would be located further from primary interpreted areas of the park and designed to avoid impacts to identified archeological features. Both alternative sites are largely obscured from external views by dense vegetation and sloped topography.

This subsection describes NPS interest for each of the five KOPs through assessing its relative importance (value of the viewed landscape), uniqueness (one-of-a-kind viewing opportunity or cultural historic, or scientific significance), and NPS's commitment to spending funds or committing personnel time to enhance the viewer's experience.

KOP 1: HIGHWAY 160 ENTERING PARK

Importance (value of the viewed landscape): Highway 160 connects PUHO to Hawai'i Belt Road, which is frequented by drivers and passengers across the perimeter of the island. Highway 160 is the primary means of entry into PUHO and opens to expansive views of the Mauna Loa slope, the Park, and the Pacific Ocean beyond. A glance to the south reveals a view of the rooftops and antenna of existing structures that extend slightly above tree and bush canopies at Site 1. There are no interpretive opportunities at this area.

Uniqueness (incl. any cultural, historic, or scientific significance): Site 1 is located within park boundaries and within the Honaunau Historic District. Existing structures are visible from this KOP.

NPS commitment: The routing of the existing vehicular entry from the access road into Site 1 is generally maintained, however, entry will need to be widened to accommodate emergency vehicles and other vehicular and equipment access.

KOP 2: VISITOR CENTER PARKING

Importance (value of the viewed landscape): The visitor center parking is the first point of view within the park for most observers outside of a moving vehicle and serves as an entry to the various park amenities, including the visitor center, 1871 trail, and the Royal Grounds. The immediate context is a paved parking surface with sparse vegetation, views to the visitor center entrance, and a glimpse of the Mauna Loa slope above a rocky embankment to the east.

Uniqueness (incl. any cultural, historic, or scientific significance): This KOP looks eastward across the Mission 66 historic landscape. A rocky berm rises above the field of view, obscuring existing structures beyond.

NPS commitment: No additional commitment is necessary to mitigate impacts at this KOP. New structure rooflines will likely extend slightly higher than those of existing structures at the site (VA Study, 2022).

KOP 3: ROYAL GROUNDS

Importance (value of the viewed landscape): The KOP is at a spiritually and culturally significant location at the north end of the Great Wall and just east of historic Pu'uhonua structures. The fishpond is visible immediately northeast and the visitor center structures and dense vegetation occupy the mid-ground beyond. The views from this site are of key importance to NPS.

Uniqueness (incl. any cultural, historic, or scientific significance): Dense vegetation and relative distance screen existing structures, and as a result they are not visible from this KOP.

NPS commitment: No additional commitment is necessary to mitigate impacts at this KOP.
KOP 4: EXISTING MAINTENANCE FACILITIES

Importance (value of the viewed landscape): The structures at the existing maintenance facility are proposed to be removed regardless of alternative pursued for the project. Removal of the structures repairs and preserves the visual landscape of the park and minimizes the visual contrast at the KOP.

Uniqueness (incl. any cultural, historic, or scientific significance): The structures distract from views of the natural landscape, as well as nearby culturally and spiritually significant components. The impact of removing the existing maintenance facility along the highly visible coastal condition enhances the viewer experience at the KOP.

NPS commitment: Park personnel will no longer use the site for operations and management. All current uses will be relocated to new buildings at a different location.

KOP 5: HIGHWAY 160 AT SITE 2

Importance (value of the viewed landscape): Highway 160 connects PUHO to Hawai'i Belt Road, which is frequented by drivers and passengers across the perimeter of the island. Highway 160 is the primary means of entry into PUHO and opens to expansive views of the Mauna Loa slope, the Park, and the Pacific Ocean beyond. Drivers and passengers glancing toward the south edge of Site 2 can see partway into the property between tree canopies and the chain link fence is clearly visible along the property edge facing the roadway. There are no interpretive opportunities at this site and it is inaccessible to the public and is not within the park.

Uniqueness (incl. any cultural, historic, or scientific significance): There are limited unique features in this view as the vegetation associated with the roadway is loosely maintained and similar to surrounding properties. There are no known visible historic, cultural, or scientifically significant features associated with this KOP.

NPS commitment: Vegetation is managed along the property-line facing Highway 160 in part to screen the view of existing buildings operated by NPS personnel. There are no rangers or visitor services offered in this area.

Table 3. Key Observation Point Visual Change

KOP Location	Alternative	Compatibility with Landscape Character	Contrast with Visual Elements	Contrast with Spatial Composition	Additional/Variable Factors
KOP 1: Keala O Keawe Rd to Site 1	Alternative A (Makai)	The dominant vegetation pattern visible in this view is unchanged by the proposed work. Disruption to the landscape character is minimal given that the existing structures already provide a break in the vegetation.	Existing archaeological features and rolling terrain at the base of the proposed structures are not visible from this view.	The new buildings are approximately 50% taller and slightly more visible from the highway than the existing buildings to be demolished. This will disrupt a small portion of view immediately surrounding the project.	This view is taken from the h outside of the park.
KOP 2: Visitor Center Parking to Site 1	Alternative A (Makai)	Existing vegetation partially obscures the view of Site 1.	Visual elements of Site 1 may be visible from this view.	The topography of the site and configuration of existing vegetation could help obscure the view, though the proposed development at Site 1 may be visible.	Detailed survey information the parking area and Site 1 v available at the time of this s
KOP 3: Royal Grounds	Alternative A (Makai)	The similar scale of the proposed structures to the existing structures and the relative distance of Site 1 from the view may help minimize perceivable changes to the landscape character.	Existing vegetation and roof lines may help to minimize contrast with existing visual elements in the view.	Topography of the park, existing vegetation, and distance could largely obscure the view, though the proposed development may be visible. Composition will likely remain similar due to existing building composition and scale at Site 1.	None.
KOP 4: Existing Maintenance Facility	Alternative A (Makai) Alternative B (Mauka)	The landscape character will be changed by the removal of structures obscuring the mid-ground of the KOP. The transition from coast to the vegetation at the edge of the Mauna Loa slope will be visible.	Contrast with the natural landscape elements will be minimized due to the removal of the structures. Visual elements will be enhanced as a result.	Contrast with spatial composition will be minimized. The transition between coast and Mauna Loa slope will be enhanced by the removal of existing structures.	This view will be impacted by Alternative A and Alternative
KOP 5: Keala O Keawe Rd to Site 2	Alternative B (Mauka)	The landscape character is impacted by the proposed resource management building in this view. A small clearing in the existing vegetation would be required to make way for the new building. This clearing allows the structure to be seen from the highway.	The visual elements in this view include the existing vegetation and the proposed structure. The proposed structure is visible from the highway and changes the character of this view by creating an opening in the existing vegetation.	The spatial composition of this view is altered by the exposure of the proposed building through the existing vegetation.	This is a public view from our park. As the location of this v not affect visitor experience the impact is neutral.

ors	Overall Effect on Scenic Quality	
ie highway	Neutral	
on between 1 was not iis study.	Neutral	
	Neutral	
d by both tive B.	Beneficial	
outside of the nis view does nce in the park,	Neutral	

IMPACTS 5

5.1 IMPACTS TO VIEWERS AND NATIONAL PARK SERVICE INTERPRETATION

In addition to the level of contrast (visual change) introduced by each of the two alternatives, this assessment seeks to identify the impact on the viewer experience and its effect on NPS management of these views. This subsection first describes the impact the visual change would have on the experience from each KOP and then considers the effect the visual change would have on park interpretive themes as well as management and resource allocation within PUHO (VIA BICY FOC, 2022).

5.2 SUMMARY OF IMPACT ON VIEWER GROUPS

The visual impact to viewers from the selected KOPs were considered for Alternatives A and B with respect to their visibility within the landscape, contrast with existing landscape elements, and overall impact on the spatial character of the associated view. Viewer groups and sensitivity to the landscape were considered when analyzing KOPs and the value of each proposed alternative assessed based on its visual impact.

Each alternative proposes the removal of existing maintenance facility structures, which has the most beneficial impact on the PUHO landscape as visualized and described in the previous section. The existing vegetation and sloped topography obscure most views to Sites 1 and 2, especially from the most sensitive views near spiritually and culturally significant areas in the park. While new structures proposed at Site 1 will likely extend higher above the surrounding canopies, this will likely have an unnoticeable visual impact on views from within the park south of the entry access road. The resource management building in Alternative B at Site 2 will be visible to drivers and passengers along Highway 160; however, the site is not within the park boundary and does not impact culturally or spiritually sensitive visual landscapes.

5.3 MITIGATION STRATEGIES

To reduce visual change introduced by this project, minimize effects on viewer experience, and limit impacts on NPS management, the following potential mitigation measures may be considered:

- Material and color selection to minimize visual change. The design team will collaborate with NPS to select materials and colors to minimize the visual impact of new structures on the surrounding landscape. Regional and environmental characteristics as well as surrounding existing buildings in the case of Alternative B are factors that will influence the materiality and color.
- Vegetated screening. Native species surveyed in flora and fauna reports will be selected with consideration to their ability to rehabilitate the site, screen nearby structures, and enhance the visual experience for observers.
- **Structure height and massing within the park to the greatest extent possible.** While building massing and height are impacted by several factors including function, building codes, user experience, and structural requirements, mitigation of impacts to the experience of the observer provides another consideration for the future design phases.

VISUALIZATIONS 6



Figure 7: Photo location and view direction

KOP 1: Highway 160 Entering Park Alternative A

This KOP includes a study of the view from Highway 160 looking toward Site 1. Structures at Site 1 will be visible from the highway and impact the view as visitors, staff, and community members approach to the park. This view is only impacted by Alternative A.

KOP 1: Highway 160 to Site 1 Alternative A



Figure 8: Existing



Figure 9: Proposed



Figure 10: Photo location and view direction

KOP 2: Visitor Center Parking Alternative A

This KOP is located within the National Register eligible Mission 66 Visitor Center Complex. The view northeast from the parking lot toward Site 1 is only a consideration for Alternative A.

KOP 2: Visitor Center Parking to Site 1 Alternative A



Figure 11: Existing



Figure 12: Proposed

Note: Upon analysis of KOP 2 View A, the topography of the site and configuration of existing vegetation will partially obscure the view, though the proposed development may be visible.



Figure 13: Photo location and view direction

KOP 3: Royal Grounds to Site 1 Alternative A

This KOP is located at the north end of the wall looking across the fish pond toward the visitor center pavilion and Mauna Loa slope beyond. The view east toward Site 1 is only a consideration for Alternative A.

KOP 3: Royal Grounds to Site 1 Alternative A



Figure 14: Existing



Figure 15: Proposed

Note: Upon analysis of KOP 3, the topography, vegetation, existing structures and distance will largely obscure the view, though the proposed development may be visible.



Figure 16: Photo location and view direction

KOP 4: Existing Maintenance Facility

This KOP is located in the picnic area adjacent to the existing maintenance facility. The view east toward the existing structures is a consideration for both Alternative A and Alternative B.

KOP 4: Existing Maintenance Facility *Alternative A*



Figure 17: Existing



Figure 18: Proposed



Figure 19: Photo location and view direction

KOP 5: Highway 160 to Site 2 Alternative B

This KOP was selected to study the potential visual impact from the highway driving past Site 2. Since this satellite site is not accessed by park visitors, the public view from the highway was assessed. This view is only impacted with Alternative B. See figures 25 and 26.

KOP 5: Highway 160 to Site 2 Alternative B



Figure 20: Existing



Figure 21: Proposed

References, Figures, & Tables 7

7.1 REFERENCES

- ANAMAR Environmental Consulting, Inc. 2023. Visual Impact Assessment Report Construct Fire Station at Big Cypress National Preserve Headquarters Complex, Ochopee, Florida, National Park Service.
- Hennebery Eddy Architects, Inc. 2023. Pu'uhonua o Hōnaunau National Historical Park Remove and Replace Park Maintenance Facilities, Environmental Assessment V.1. National Park Service, Lakewood, Colorado.
- Hennebery Eddy Architects, Inc. 2022. Value Analysis Study for PUHO 154441. National Park Service, Lakewood, Colorado.
- Meyer, Mark E., James F. Palmer, and Ksienya A. Taylor. 2022. Visual Impact Assessment Methodology and Guidelines. National Park Service, Lakewood, Colorado.
- National Park Service. 2023. Visitor Use Statistics. From: https://irma.nps.gov/Stats/SSRSReports/Park%20 Specific%20Reports/Annual%20Park%20Recreation%20Visitation%20(1904%20-%20Last%20 Calendar%20Year)?Park=PUHO

7.2 FIGURES

Figure 1. Site Locator Map5
Figure 2. Alternate A Site Plans11
Figure 3. Alternate B Site Plans12
Figure 4. Viewshed Analysis - Alternative A13
Figure 5. Site Map - Site 1
Figure 6. Site Map - Site 2
Figure 7. KOP 1 Photo Location and View Direction24
Figure 8. KOP 1 Existing25
Figure 9. KOP 1 Proposed25
Figure 10. KOP 2 Photo Location and View Direction26
Figure 11. KOP 2 Existing
Figure 12. KOP 2 Proposed27
Figure 13. KOP 3 Photo Location and View Direction
Figure 14. KOP 3 Existing
Figure 15. KOP 3 Proposed29
Figure 16. KOP 4 Photo Location and View Direction
Figure 17. KOP 4 Existing
Figure 18. KOP 4 Proposed31
Figure 19. KOP 5 Photo Location and View Direction32
Figure 20. KOP 5 Existing
Figure 21. KOP 5 Proposed

7.3 TABLES

Table 1. Site Inventory	7
Table 2. KOP Visual Inventory	7
Table 3. Key Observation Point Visual Change)

7.4 IMAGES

Image 1. View looking mauka towards the Great Wall	4
Image 2. Existing Maintenance Facilities	4
Image 3. Road through Site 1	6
Image 4. Vegetation at Site 2	6
Image 5. Carving in front of stacked stone wall	14
Image 6. KOP 1	14
Image 7. KOP 2	14
Image 8. KOP 3	15
Image 9. KOP 4	15
Image 10. KOP 5	15



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS PUHO 415/187493 MAY 2023