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LAND  
STATE PARKS

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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OCT 13 2014

Jessica Wooley, Director  
Office of Environmental Quality Control  
Department of Health, State of Hawai'i  
235 S. Beretania Street, Room 702  
Honolulu, Hawai'i 96813

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Dear Ms. Wooley:

**Draft Environmental Assessment for the  
Kekaha Kai State Parks Phase II Improvements**

With this letter, the Department of Land and Natural Resources hereby transmits the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI) for the Draft Environmental Assessment for the Kekaha Kai State Parks Phase II Improvements for publication in the next available edition of the Environmental Notice. The proposed project involves TMK (3) 7-2-05: 02, 03 & 07; 7-3-43: por. 01; 7-2-04: 03, 09, 17 & 19 in North Kona on the Island of Hawaii.

Enclosed is a completed OEQC Publication Form, a copy of the DEA-AFONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word.

If there are any questions, please contact Carty Chang, P.E., Chief Engineer at (808) 587-0230 or via email at [Carty.S.Chang@hawaii.gov](mailto:Carty.S.Chang@hawaii.gov).

Sincerely,

WILLIAM J. AILA, JR.  
Chairperson

- Enclosures: One (1) hard copies of DEA-AFONSI  
One (1) hard copy of OEQC Publication Form  
One (1) CD containing the DEA and OEQC Publication Form

# OEQC PUBLICATION FORM

**Project Name** KEKAHA KAI STATE PARK PHASE II IMPROVEMENTS  
**Island:** Hawai'i  
**District:** North Kona  
**TMK:** (3rd) 7-2-05: 02, 03 & 07; 7-3-43: por. 01; 7-2-04: 03, 09, 17 & 19

**Permits:**

1. State DLNR Engineering Division
  - a. Review of building plans for compliance with all relevant codes (e.g., electrical, plumbing, seismic, etc).
  - b. Review of grading and drainage plans (if any)
2. State DLNR Office of Coastal and Conservation Lands and Surveyor
  - a. Certified Shoreline review and approval by the State Surveyor (obtained Conservation District Use Permit (potential)
3. State Department of Health (SDOH)
  - a. Disability and Communication Access Board (DCAB) plan review and approval.
  - b. National Pollutant Discharge Elimination System Permit (NPDES)
4. County Department of Public Works (DPW)
  - a. Variance or exemption from HCC Chapter 27 – Flood Control to allow building within the VE Zone (if necessary)
  - b. Building Permit: review of building plans for compliance with all relevant codes (e.g., electrical, plumbing, seismic, etc.).
  - c. Review of grading and drainage plans (if any)
5. County Planning Department
  - a. Special Management Area (SMA) Use Permit.
  - b. Variance to Shoreline Setback for structures are within 40 feet of the Certified Shoreline unless determined by the Planning Director to be minor activities not affecting shoreline process.
  - c. Plan Approval (as required, to be coordinated with Planning Department)

**Proposing/Determination Agency:**

Hawai'i State Department of Land & Natural Resources, Division of State Parks  
Carty Chang, Chief Engineer, DLNR Engineering Division  
1151 Punchbowl St., Rm 221  
Honolulu, HI 96813  
Ph: (808) 587-0230

**Consultant:**

Geometrician Associates  
PO Box 396  
Hilo HI 96721  
Ron Terry Ph. (808) 969-7090 rterry@hawaii.rr.com

**Status (check one only):**

- \_x\_DEA-AFNSI      Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); a 30-day comment period ensues upon publication in the periodic bulletin.
- \_\_FEA-FONSI      Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and

- PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.
- \_\_FEA-EISPN Submit the proposing agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); a 30-day consultation period ensues upon publication in the periodic bulletin.
- \_\_Act 172-12 EISPN Submit the proposing agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
- \_\_DEIS The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); a 45-day comment period ensues upon publication in the periodic bulletin.
- \_\_FEIS The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.
- \_\_ Section 11-200-23 Determination The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.
- \_\_Section 11-200-27 Determination The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.
- \_\_Withdrawal (explain)

**Summary** The State Department of Land and Natural Resources, Division of State Parks (DLNR Division of State Parks) is planning to continue its facility improvements at Kekaha Kai State Park, which encompasses 1,642 coastal acres. Kekaha Kai State Park was envisioned as one jewel in a string of parks along this coast, a low-key park to preserve the natural landscape of this Kona shoreline. Park development should provide increased recreational opportunities, support the development of cultural and educational programs, and preserve and enhance valuable natural and cultural resources. To this end, infrastructure and facility development have been planned to be relatively small and dispersed. The current Phase II Improvements involve minor repair and safety improvements to roadways and parking, a stairway to replace a dilapidated ramp, a new storage and water tank building to provide water for cleaning and maintenance, provision of two showers, several new or refurbished accessible picnic tables and BBQ pits, and miscellaneous other features and actions. The project avoids surface water, significant historic sites and threatened or endangered species. DLNR Division of State Parks will incorporate mitigation measures to ensure that there are no adverse effects to these resources. A few activities are located by necessity in the shoreline area, and permits will be obtained to ensure that no inappropriate use of or harm to shoreline resources occur

**DRAFT ENVIRONMENTAL ASSESSMENT  
KEKAHA KAI STATE PARK PHASE II IMPROVEMENTS**

TMKs: (3rd) 7-2-05: 02, 03 & 07;  
7-3-43: por. 01; 7-2-04: 03, 09, 17 & 19  
North Kona District, Hawai‘i Island, State of Hawai‘i

October 2014

State of Hawai‘i  
Department of Land and Natural Resources  
Division of State Parks



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7-3-43: por. 01; 7-2-04: 03, 09, 17 & 19  
North Kona District, Hawai'i Island, State of Hawai'i**

PROPOSING/  
APPROVING AGENCY:

State of Hawai'i  
Department of Land and Natural Resources  
Division of State Parks  
P.O. Box 621  
Honolulu, Hawai'i 96809

CONSULTANT:

Geometrician Associates LLC  
PO Box 396  
Hilo, Hawai'i 96721

CLASS OF ACTION:

Use of State Land  
Use of State Funds

This document is prepared pursuant to:

The Hawai'i Environmental Protection Act,  
Chapter 343, Hawai'i Revised Statutes (HRS), and  
Title 11, Chapter 200, Hawai'i Department of Health Administrative Rules (HAR).

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## **SUMMARY OF THE PROPOSED ACTION, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

The State Department of Land and Natural Resources, Division of State Parks (DLNR Division of State Parks) is planning to continue its facility improvements at Kekaha Kai State Park, which encompasses 1,642 coastal acres in Kona on the Island of Hawai‘i. Kekaha Kai State Park was envisioned as one jewel in a string of parks along this coast, a low-key park to preserve the natural landscape of this Kona shoreline. Park development should provide increased recreational opportunities, support the development of cultural and educational programs, and preserve and enhance valuable natural and cultural resources. To this end, infrastructure and facility development has been planned to be relatively small and dispersed. The current Phase II Improvements involve minor repair and safety improvements to roadways and parking, a stairway to replace a dilapidated ramp, a new storage and water tank building to provide water for cleaning and maintenance, provision of two showers, several new or refurbished accessible picnic tables and BBQ pits, and miscellaneous other features and actions. The project avoids surface water, significant historic sites and threatened or endangered species. DLNR Division of State Parks will incorporate mitigation measures to ensure that there are no adverse effects to these resources. A few activities are located by necessity in the shoreline area, and permits will be obtained to ensure that no inappropriate use of or harm to shoreline resources occur.

## **PART 1: PROJECT DESCRIPTION, PURPOSE AND NEED AND ENVIRONMENTAL ASSESSMENT PROCESS**

### **1.1 Project Location and Property Ownership**

The State Department of Land and Natural Resources, Division of State Parks (DLNR Division of State Parks) is planning to continue its facility improvements at Kekaha Kai State Park, which encompasses 1,642 coastal acres in the far north of the North Kona District on the Island of Hawai'i (Figures 1a and 1b). The park is bounded by the sea on the west, by Queen Ka'ahumanu Highway (State Highway 19) on the east, by Kona International Airport lands on the south, and by luxury residential lots on the north. In addition, the privately owned *ahupua'a* of Makalawena separates the two State-owned park areas.

### **1.2 Project Background, Purpose and Need and Description**

#### *Background*

In 2003, DLNR Division of State Parks prepared the Kekaha Kai State Park Development Report (PDR) and the Environmental Impact Statement (EIS) that covered the subsequent establishment of the park in its current form, including most of its major features, such as access roads, restrooms, picnic areas and trail. This era of development is referred to as *Phase I Improvements*.

Kekaha Kai State Park was envisioned as one jewel in a string of parks along the coast from Kawaihae to Kailua-Kona. The concept was a low-key park that would preserve the natural landscape of this Kona shoreline. Park development should provide increased recreational opportunities, support the development of cultural and educational programs, and preserve and enhance valuable natural and cultural resources. To this end, infrastructure and facility development was planned to be relatively small and dispersed.

The Kona community, represented at public meetings and through a citizen's advisory task force, provided public input into the plan. The general consensus was to plan the entire park for low levels of use and consider whether and how to include more intensive uses in future phases, when facilities, manpower and management system could be in place to preserve and sustain the resources in the face of increasing demand.

For planning purposes the park was divided into three sections along *ahupua'a* boundaries: the Mahai'ula Section (which also includes lands in Kaulana Ahupua'a); Awake'e; and Manini'owali (which also includes lands in Kūki'o Ahupua'a) (see Figure 1b). Different levels of use were envisioned for each of these sections, which allows for slightly different park experiences. Each section has a *mauka-makai* access/trail and is crossed by the lateral coastal trail system known as the Ala Kahakai.

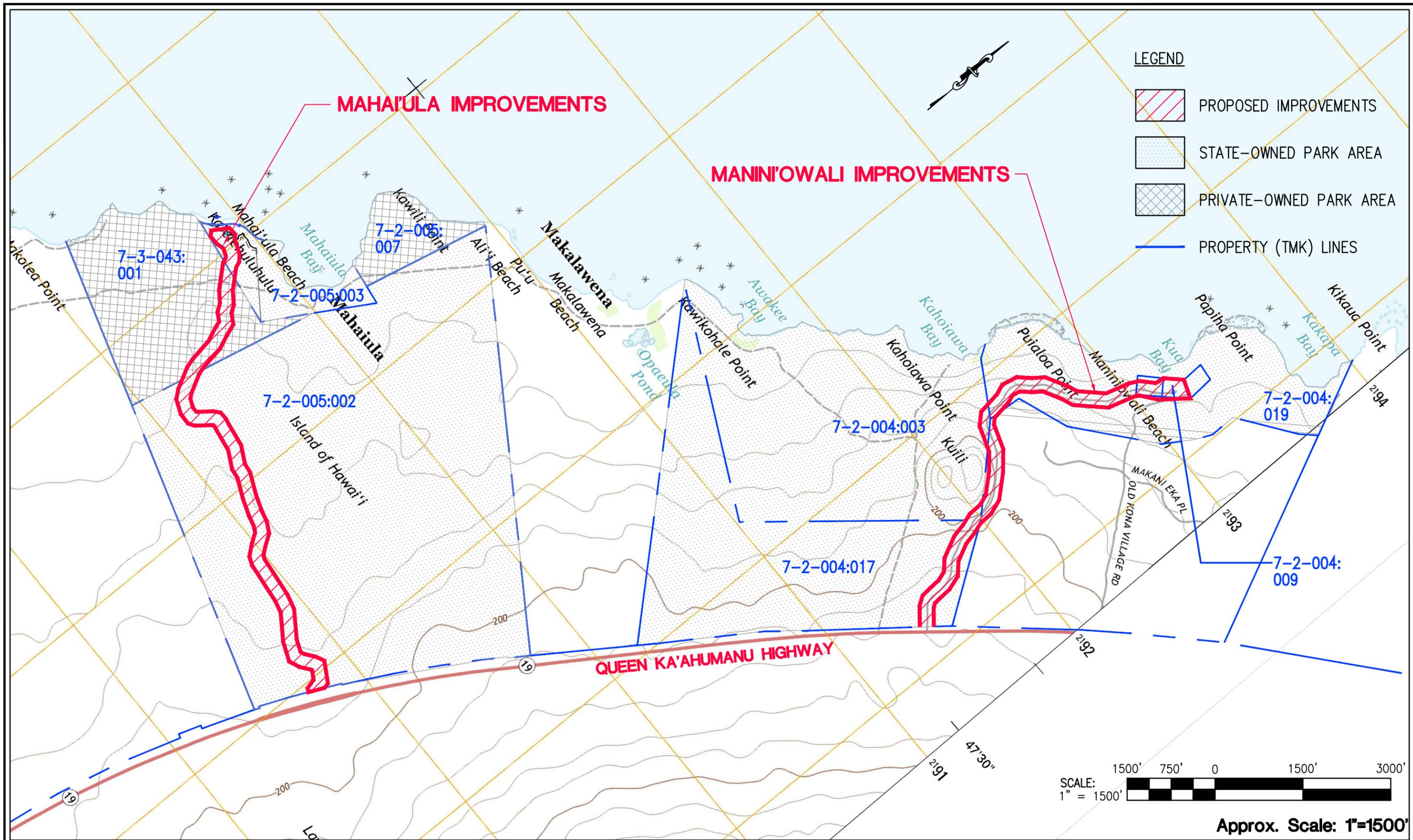
The development plan has been used to guide the development of facilities in each section of the park in order to sustain the resources found there. Mahai'ula was planned for a higher level of use than the other two sections. Manini'owali was envisioned to support a moderate level of use, and Awake'e was planned for the lowest intensity of use. This decision reflected existing conditions, the size and resilience of the resources and the level of use pressure for the respective sections.

Each section has been planned to have a cluster of park visitor facilities comparable to a settlement in the traditional *ahupua'a* system. These clusters have been planned with different levels of amenities and maintenance depending on the park plan and anticipated levels of use. Clusters are located within vegetated areas along the shoreline with access to the ocean.

The Mahai'ula section is located at the southern end of the park adjacent to the Keahole Airport and is closest to the growing urban communities of North Kona. It was long the best known section of the Park and has the largest bay with reasonably calm waters, with two recreational nodes at Ka'elehuluhulu and Mahai'ula Bay. Ka'elehuluhulu is the largest open sandy area in the park, offering a range of recreational opportunities. These characteristics allowed it to have higher levels of use relative to the other sections. There are currently ten picnic tables, four barbecue pits, separate men's and women's vault toilets (four toilets total), and parking for approximately 100 vehicles. The Mahai'ula section contains the historic Magoon and Kaelemakule historic structures. This area is being planned for natural and cultural education.

The Manini'owali section was difficult to access prior to development of the park. Road improvements in 2004 required as part of the W.B. Kukio Development to the north provided a paved access road that led to this area becoming perhaps the most visited section of the park. It has a beautiful beach at Kua Bay that is also accessed by visitors at the hotel and resort homes to the north and east. This section of the park was designed for moderate levels of use due to the lower carrying capacity of the resources. The beach and bay are smaller than at Mahai'ula and there are significant archaeological features. Restrooms with running water, picnic tables and an outdoor shower are present, as well as a 35-space parking lot. Parking often overflows to the shoulders of the access road.

The Awake'e section is accessible only by walking along the shore from other areas of the Park or via a very rough four-wheel drive road. As such, it is least accessible portion of the park. This section encompasses the dominant cinder cone in the region, Pu'u Kuili, and is adjacent to the largest wetland/pond along this segment of the coast; Kapo'ikai in Makalawena (also known as 'Opae'ula). This section is designated for low levels of use with very limited and "primitive" types of facilities, and retains more of a wilderness character. No facilities in Awake'e are proposed in the Phase II Improvements.



**Kekaha Kai State Park  
Phase II Improvement Project  
North Kona District, Island of Hawaii  
TMKs: (3) 7-2-005:002, 003, 007; 7-3-043:001; 7-2-004:003, 009, 017, 019**

**FIGURE 1A:  
KEKAHA KAI STATE PARK MAP**  
September 2014

**Figure 1b. Aerial Image of Kekaha Kai Region** © Google Earth



Although located between Awake'e and Mahai'ula, the *ahupua'a* of Makalawena is owned by Kamehameha Schools and is not a part of Kekaha Kai State Park. Within Makalawena, State ownership includes the portion of land below the high water mark and public trails within the *ahupua'a*. The State assures that access is provided in/through these areas but has not provided any facilities in this *ahupua'a*. The State works with Kamehameha Schools to protect natural and cultural resources and provide the appropriate interface between public and private lands.

### *Purpose and Need*

Kekaha Kai State Park has an annual visitation of 235,700, with 73,400 visiting the Mahai'ula Section and 162,300 visiting Manini'owali. It is estimated that 57% of these park visitors are from out-of-State and the other 43% are Hawai'i residents. There is a need for additional improvements at Kekaha Kai State Park to safely, equitably and efficiently accommodate the existing level of use at these parks, in keeping with the low-key character of the park. In particular, at Mahai'ula: cleaning water storage is required; picnic and BBQ facilities need to be replaced and/or made accessible pursuant to the Americans with Disabilities Act; parking needs to be better organized; and access road requires repair to help avoid damage to visitor vehicles. At Manini'owali: traffic calming is needed on the access road; accessible picnic tables and a shower are needed; and a safer access to the beach is required, where the existing ramp structure was not built to accommodate visitor access. The project is not intended to increase visitation, but rather to better accommodate existing use. The purpose of the project, which is referred to as *Phase II Improvements*, is to assist in meeting these needs.

### *Project Description*

The proposed Phase II improvements would occur at the Manini'owali (Kua Bay) and Mahai'ula sections of the park. Table 1, below, lists the improvements, which are illustrated in the Site Plans in Figures 3a and 3b, and 4a and 4b, above.

The current estimated cost of the improvements is \$1,030,000, consisting of \$160,000 at Manini'owali, \$570,000 at Mahai'ula, and \$300,000 for the Mahai'ula access road. These estimates are based upon all desired features identified and will be refined during design. The project would initiate after completion of design and the granting of all necessary permits, and would take approximately six to twelve months to complete, depending on whether the different portions of the project are constructed concurrently or consecutively.

**FIGURE 2. Project Site Photos**



**2a Existing Accessible Picnic Table, Mahai‘ula ▲ ▼ 2b Vault Toilets, Mahai‘ula**



**FIGURE 2. Project Site Photos**



**2c Existing BBQ pit, Mahai‘ula ▲ ▼ 2d Mahai‘ula Access Road**



**▼ 2e Ka‘elehuluhulu Pond**

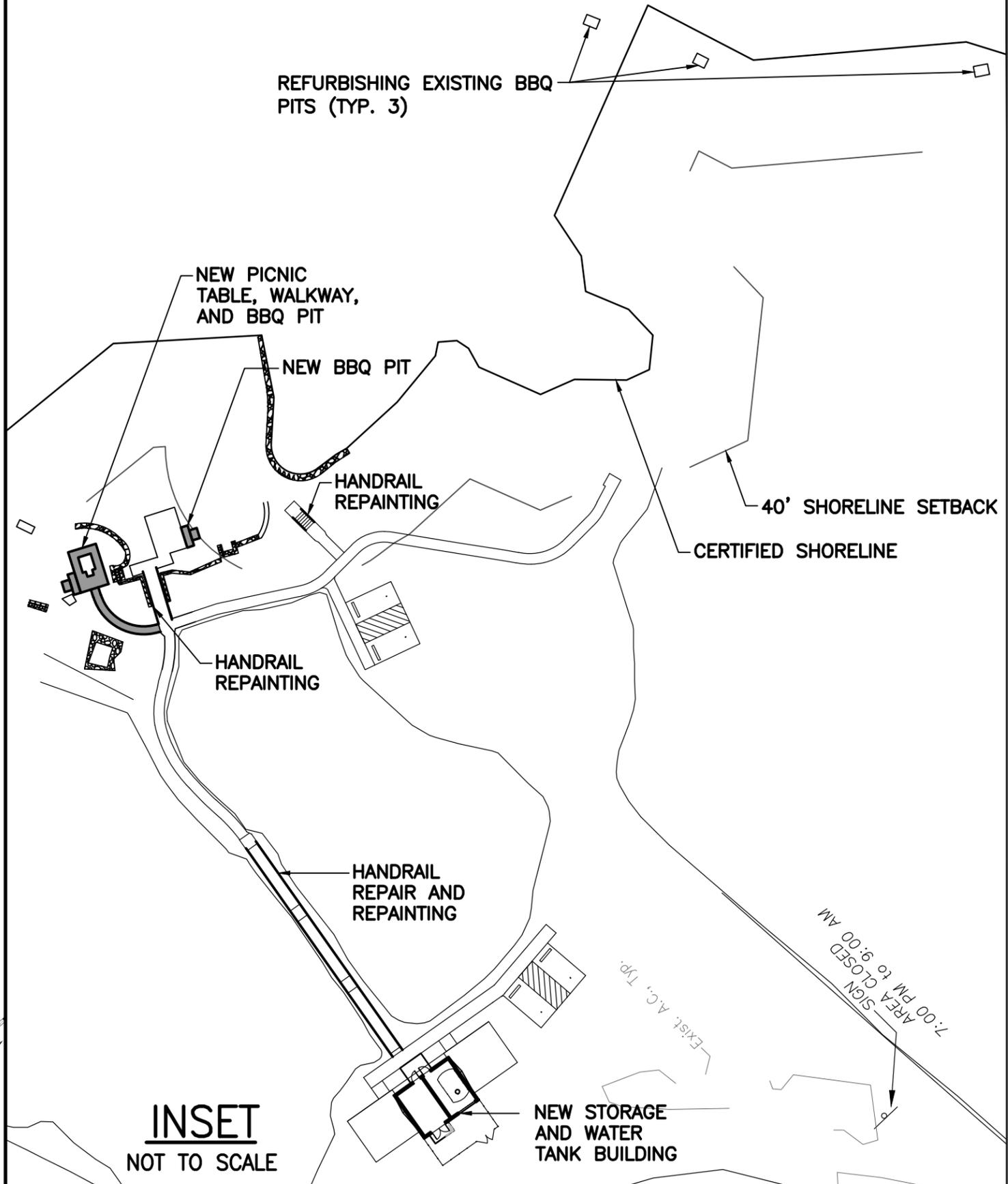
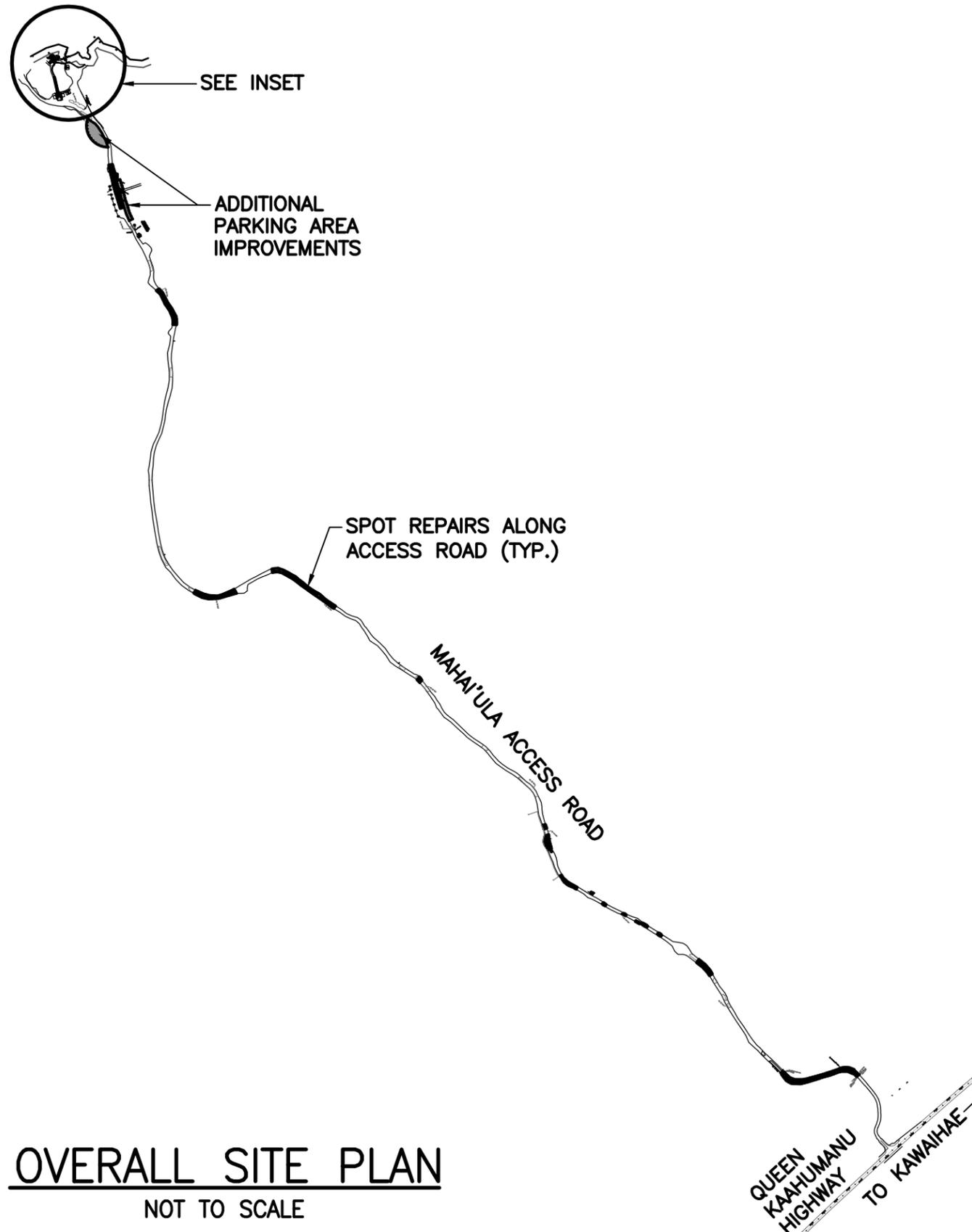


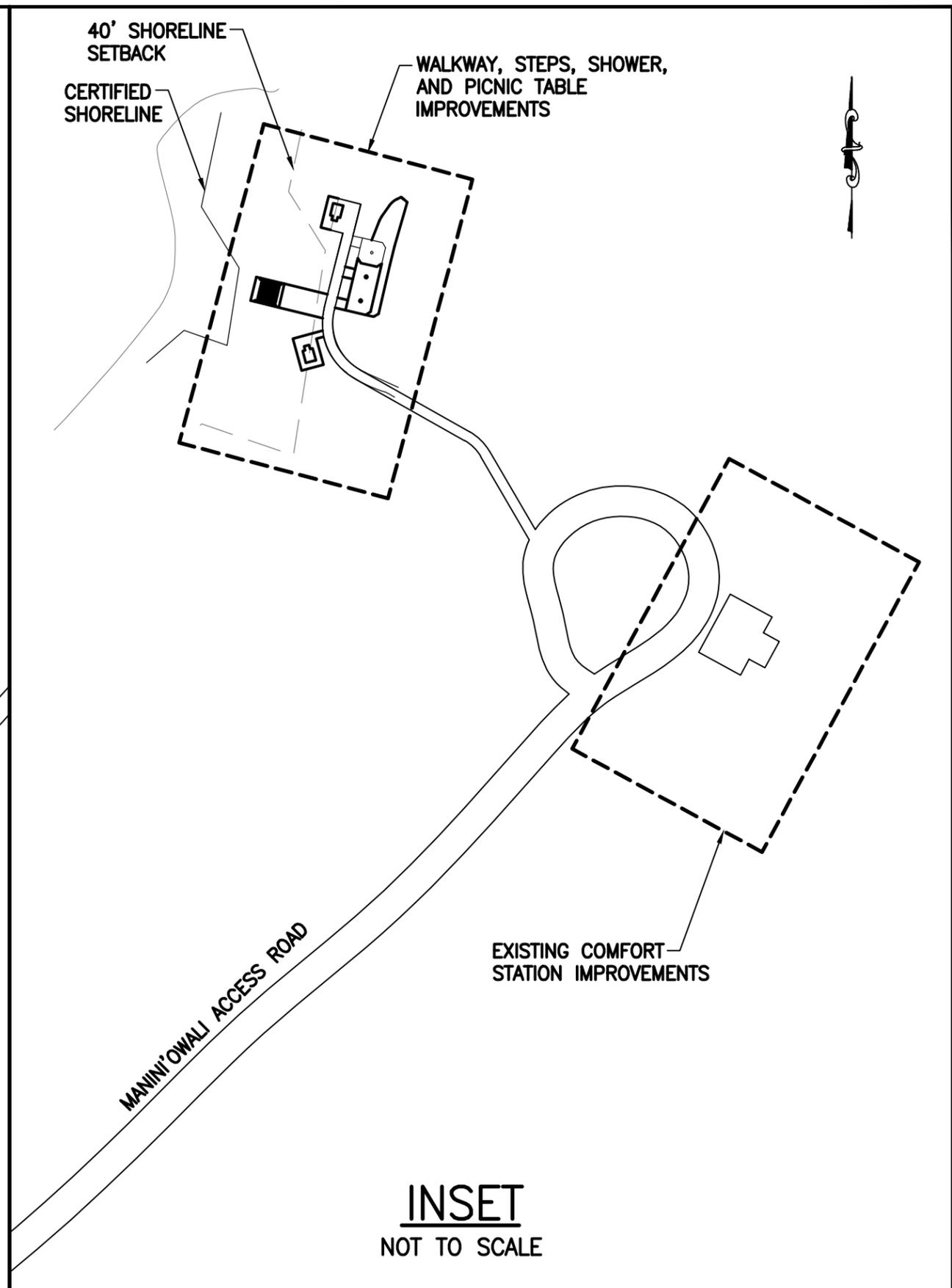
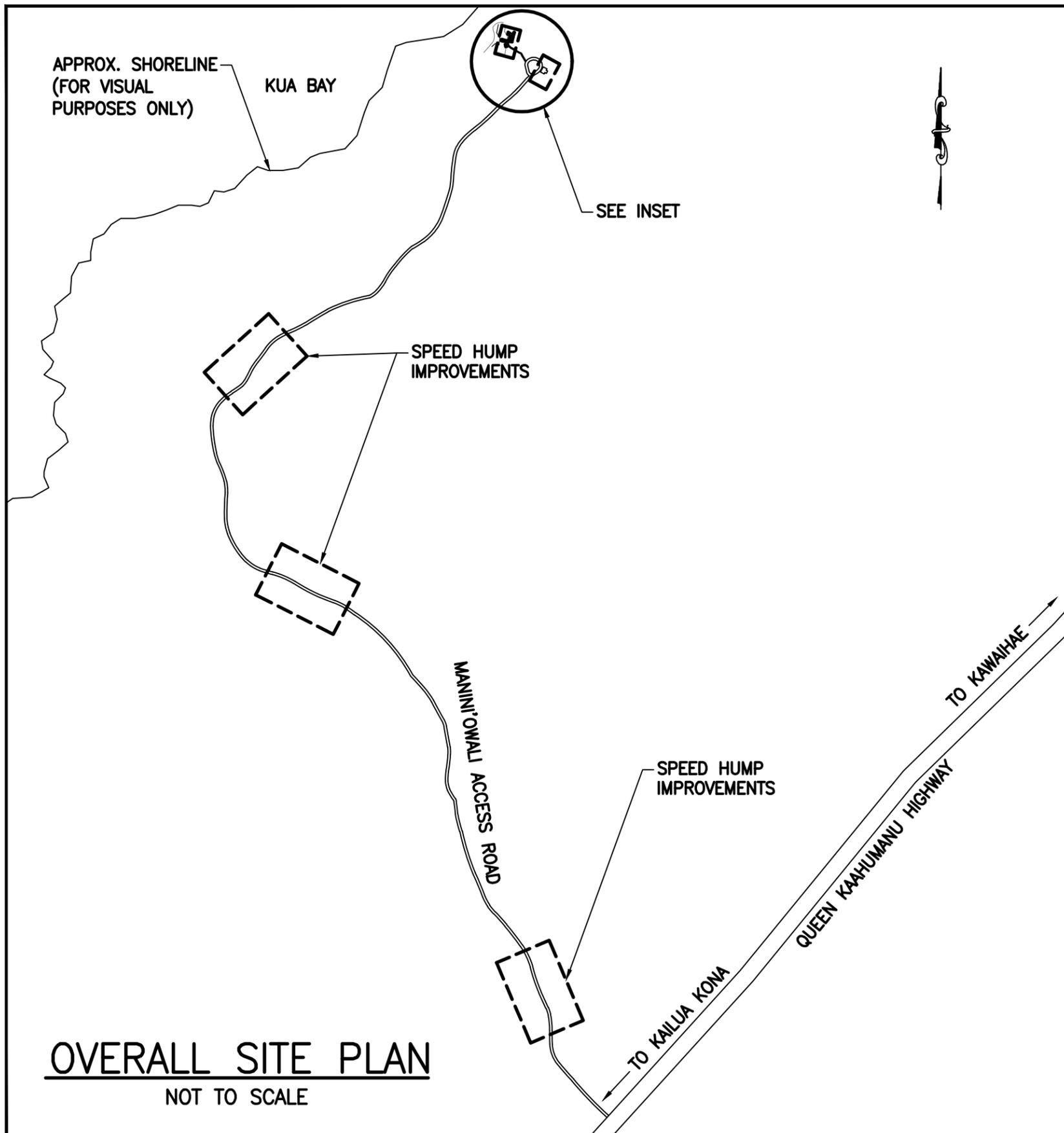
**FIGURE 2. Project Site Photos**

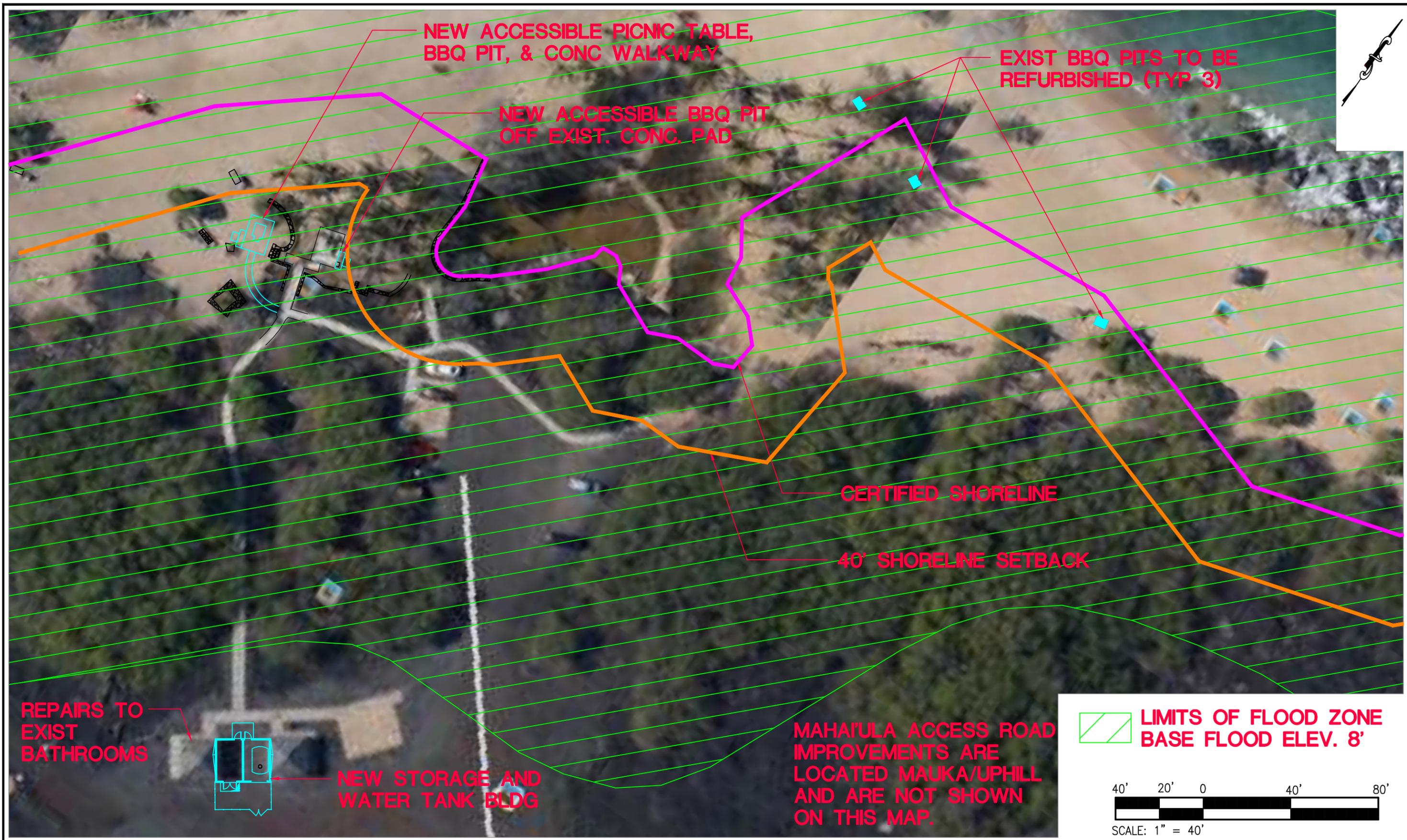


**2f Site for Proposed Additional Showers and Picnic Tables, Manini‘ōwali ▲  
▼ 2g Ramp replacement area, Manini‘ōwali**



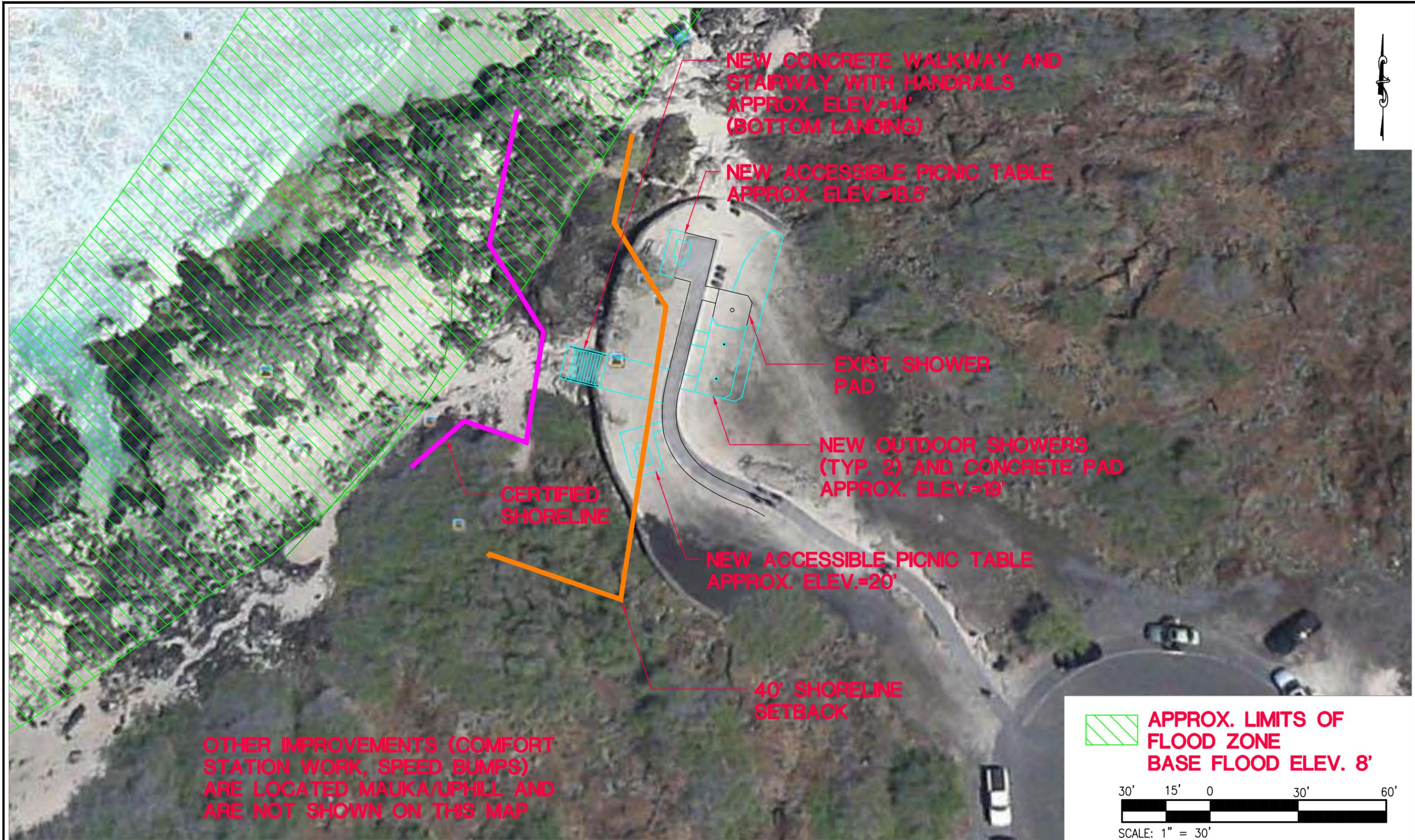






**Kekaha Kai State Park**  
**Phase II Improvement Project**  
 North Kona District, Island of Hawaii  
 TMKs: (3) 7-2-005:002, 003, 007; 7-3-043:001; 7-2-004:003, 009, 017, 019

**FIGURE 4A:**  
**DETAILED SITE PLAN FOR COASTAL IMPROVEMENTS - MAHA'ULA**  
 September 2014



OTHER IMPROVEMENTS (COMFORT STATION WORK, SPEED BUMPS) ARE LOCATED MAUKA/UPHILL AND ARE NOT SHOWN ON THIS MAP

**Table 1. Planned Actions, Phase II Improvements**

<b>MANINI'ŌWALI</b>	
<b>Existing Comfort Station</b>	<ul style="list-style-type: none"> <li>• Remove existing plumbing fixtures and drinking fountains from outside shower area.</li> <li>• Repair work (patch &amp; paint).</li> <li>• Rest stop area with 8x2-foot concrete bench.</li> <li>• New steel tube gates at restroom entrances</li> </ul>
<b>Two Freestanding Outdoor Showers</b>	<ul style="list-style-type: none"> <li>• 22x24-foot concrete slab, water piping, and two 7-foot high pipe columns with grab bars and 4 shower heads</li> </ul>
<b>Two Secured Accessible Picnic Tables</b>	<ul style="list-style-type: none"> <li>• 8x5-foot wood or plastic picnic tables on 16x11-foot concrete slab</li> </ul>
<b>Concrete Walkway and Steps</b>	<ul style="list-style-type: none"> <li>• CRM (concrete reinforced masonry) ramp removal, new 22x12-foot concrete walkway, new 14x12-foot concrete step area with landings and handrails, and CRM retaining wall as needed</li> </ul>
<b>Three Speed Humps On Access Road</b>	<ul style="list-style-type: none"> <li>• 20x3-foot speed humps and speed bump ahead signs, with two signs per speed bump</li> </ul>
<b>MAHAI'ULA</b>	
<b>Spot Repairs Along Existing Access Road</b>	<ul style="list-style-type: none"> <li>• Pavement overlay, speed humps with signs, pavement patching, pavement removal, and/or re-graveling in 12 areas</li> </ul>
<b>Parking Area Improvement</b>	<ul style="list-style-type: none"> <li>• Clearing and compaction of two existing areas on side of existing access road – one 217x76-foot semi-circular area &amp; one 224x23-foot rectangular area, removal of bollards and installation of new bollards and sign posts). Approximately 49 cars fit in these parking areas.</li> </ul>
<b>New Storage and Water Tank Building</b>	<ul style="list-style-type: none"> <li>• Approx. 60x20-foot building connecting to existing vaulted toilet structures</li> <li>• Repairs to existing vaulted toilet structures.</li> <li>• New CMU walls and metal roofing</li> <li>• New 2,000 gallon water storage tank to provide water for cleaning and maintenance</li> <li>• New doors, skylights &amp; roof vents</li> <li>• New 6-foot high chain link fencing and gate, with barbed wire</li> </ul>
<b>Walkway Handrail Repair</b>	<ul style="list-style-type: none"> <li>• Spot repairing 4 broken or missing segments and repainting all rails at 3 locations</li> </ul>
<b>Refurbishing of Existing BBQ Pits</b>	<ul style="list-style-type: none"> <li>• Refurbishing may include new grills, patching work, replacing rock façade</li> </ul>
<b>New secured accessible picnic table and BBQ pit</b>	<ul style="list-style-type: none"> <li>• 8x5-foot wood or plastic picnic table on 16x11-foot concrete slab</li> <li>• 8x6-foot CMU BBQ pit connected to picnic table slab</li> <li>• 3-foot wide concrete pathway</li> </ul>
<b>New accessible BBQ pit</b>	<ul style="list-style-type: none"> <li>• 8x6-foot CMU BBQ pit connected to existing picnic table slab</li> <li>• Demolish existing hibachi stand</li> <li>• Remove and relocate existing palm tree</li> </ul>



## **PART 2: ALTERNATIVES**

### **2.1 No Action**

Under the No Action Alternative, the Phase II improvements would not be undertaken. The Mahai‘ula and Manini‘ōwali sections of the park would continue to lack sufficient facilities such as picnic tables and BBQ pits that are accessible in conformance with the Americans with Disabilities Act, and the stairway entrance to the beach at Manini‘ōwali would continue to be substandard and potentially hazardous. Traffic calming speed humps on the Manini‘ōwali access road would not be constructed. Repairs and maintenance of the Mahai‘ula access road would not be conducted, and parking there would be less organized and efficient. At Mahai‘ula, the water supply for cleaning and maintenance would not be constructed, and various facilities would not be repaired or maintained. DLNR Division of State Parks considers the No Action Alternative undesirable for fulfilling its mission of providing safe, efficient, attractive, accessible parks with diverse opportunities for recreation. The No Action Alternative would, however, avoid any construction-phase impacts and would impose fewer manmade structures and facilities within the park.

### **2.2 Alternatives Evaluated and Dismissed from Further Consideration**

Although additional improvements are contemplated for Kekaha Kai State Park in the future, none are currently ready for design or funding, and therefore no alternative with a greater level of improvements is being advanced.

## **PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES**

Kekaha Kai State Park is referred to throughout this EA as the *project site*. Depending on the resource under discussion, the term *project area* is more flexible and is used to describe the general environs, sometimes denoting Kona, West Hawai‘i, or the Big Island.

### **3.1 Physical Environment**

#### **3.1.1 Geology, Soils and Geologic Hazards**

##### *Environmental Setting*

Geologically, most of the park consists of surface lava flows or cinder cones from Hualalai Volcano dating from 3,000 to 5,000 years before the present. The extreme south of the park rests of lava from 1801 (Wolfe and Morris 1996). The U.S. Natural Resources Conservation Service classifies the land within various lava flow types that have not yet formed soil due to their recent volcanic origin and lack of weathering, along with some Kainaliu cobbly silty clay loam on a portion of Pu‘u Kuili cinder cone

(<http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>). Where beaches are present, marine-derived sand occurs rather than the typical regional soil.

The entire Island of Hawai‘i is subject to geologic hazards, especially lava flows and earthquakes. The U.S. Geological Survey Volcanic assesses volcanic hazard in this area of Kona, which is on the slopes of the dormant volcano Hualālai, as Lava Flow Hazard Zone 4, on a scale of ascending risk 9 to 1 (Heliker 1990:23). The hazard risk is based on the fact that Hualālai has steep slopes and is historically the third most active volcano on the island. Volcanic hazard Zone 4 areas have had about 5 percent of the area covered with lava since 1800 and less than 15 percent of the area covered in the past 750 years.

In terms of seismic risk, the entire Island of Hawai‘i is rated Zone 4 Seismic Hazard (*Uniform Building Code, 1997 Edition*, Figure 16-2). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built, as the 6.7-magnitude (Richter) quake of October 16, 2006, demonstrated. The project site is not subject to subsidence, landslides or other forms of mass wasting.

#### *Impacts and Mitigation Measures*

In general, geologic conditions impose no constraints on the proposed action, and the proposed project is not imprudent to construct.

### **3.1.2 Water Features and Water Quality**

#### *Existing Environment*

The project site is on the shoreline of the North Kona District. There are no freshwater bodies at the project site, although anchialine ponds are present in certain areas of the coastline, including ‘Opae‘ula Pond near Makalawena and nearby ponds within Kekaha Kai State Park. A three-mile long fishpond named Pa‘aiea, belonging to Kamehameha the Great, existed near and south of Ka‘elehuluhulu until it was covered by the 1801 flow. The pond started from Keahole and ended near Ka‘elehuluhulu Beach. Small ponds at Ka‘elehuluhulu (see Figure 2e) are perhaps the sole remnant of the former Pa‘aiea Pond.

According to maps from the U.S. Fish and Wildlife Service, the only wetlands in the park is ‘Opae‘ula Pond (<http://www.fws.gov/wetlands/Data/Mapper.html>). Small fringing wetlands are also present at Ka‘elehuluhulu Pond. Neither pond will be affected in any way by project activities.

The waters off Kona are classified by the State as class AA. Hawai‘i Administrative Rules (HAR) 11-54-03(c)(1) state concerning class AA waters that:

“...high quality waters are those in which water quality is expected to exceed that necessary to support oceanographic research, propagation of aquatic communities and wildlife, compatible recreation and aesthetic enjoyment. It is the objective of class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. To the extent practicable, the wilderness character of these areas shall be protected.”

Coastal water quality in Kona, which lacks the heavy industry, history of intensive agriculture, or other factors that lead to contamination, is generally good (U.S. EPA 2000). However, the Natural Resources Defense Council has reported exceedances (<http://www.nrdc.org/water/oceans/ttw/ttw2008.pdf>) of bacteria in water quality at certain beaches, which local water quality scientists attribute mainly to wastewater (*Hawai'i Tribune Herald*: August 6, 2008, p. 1).

Another source of water pollution is runoff from developed properties, which can carry chemicals, sediments and nutrients. Although not a chronic problem, periodic acute episodes have occurred in some construction sites. Proper implementation and enforcement of construction BMPs are important to safeguard water quality. After construction, reducing contamination relies on confining runoff, particularly “first-flush” runoff, which contains most of the contaminants, to drainage structures that capture and retain many of the pollutants, especially sediments.

In terms of groundwater, U.S. EPA and Department of Water Supply Annual Water Quality Reports for wells and water systems do not indicate a trend of health-based or monitoring violations in at least the past 10 years. Although some chemical contamination has been found in a few, levels have been below maximum EPA-acceptable limits.

#### *Impacts and Mitigation Measure*

As the project involves only minimal land use changes, little if any long-term effects to sedimentation are expected. However, due to the project site's proximity to the ocean, there is at least a small chance that sedimentation during construction may occur if not properly mitigated.

In order to minimize the potential for sedimentation and erosion of shoreline areas, the contractor shall perform all earthwork and grading in conformance with Chapter 10, Erosion and Sediment Control, Hawai'i County Code. Because the Mahai'ula Access Road portion of the project will disturb more than one acre of soil, a National Pollutant Discharge Elimination System (NPDES) permit is required. This permit requires the completion of a Storm Water Pollution Prevention Plan (SWPPP). In order to properly manage storm water runoff, the SWPPP will describe the emplacement of a number of best management practices (BMPs) for the project. These BMPs may include, but will not be limited to, the following:

- Minimization of soil loss and erosion by revegetation and stabilization of slopes and disturbed areas of soil, possibly using hydromulch, geotextiles, or binding substances, as soon as possible after working;
- Minimization of sediment loss by emplacement of structural controls, possibly including silt fences, gravel bags, sediment ponds, check dams, and other barriers, in order to retard and prevent the loss of sediment from the site;
- Minimizing disturbance of soil during periods of heavy rain;
- Phasing of the project in order to disturb a minimum necessary area of soil at a particular time;
- Application of protective covers to soil and material stockpiles;
- Construction and use of a stabilized construction vehicle entrance, with designated vehicle wash area that discharges to a sediment pond;
- Washing of vehicles in the designated wash area before they egress the project site;
- Use of drip pans beneath vehicles not in use in order to trap vehicle fluids;
- Routine maintenance of BMPs by adequately trained personnel; and
- Proper clean-up and disposal at an approved site of significant leaks or spills, if they occur.

### **3.1.3 Drainage, Flooding and Ocean Hazards**

#### *Existing Environment*

The Flood Insurance Rate Maps (FIRM) 1551660466C-468C (9/16/88) show that the shoreline portions of the project site lie within Flood Zone VE and AE, indicating the 100-year flood coastal, high hazard floodplain, incorporating storm surge inundation (Figure 3). The 100-year floodplain designates the area as subject to inundation from a flood having a one percent chance of occurring in any given year. This flood is referred to as the “100-year” flood or “base flood” and may occur more or less often than once every 100 years. The base flood elevation (BFE), mostly between 7 and 8 feet above sea level in the areas of the park proposed for improvement, is the estimated elevation of the 100-year flood based on the National Geodetic Vertical Datum of 1929 (NGVD).

Maps printed by the Hawai‘i County Civil Defense Agency locate Kekaha Kai Stat Park in the area that should be evacuated during a tsunami warning. The area has been struck by several highly destructive tsunamis in historic times, although little historic data are available. Maps from International Tsunami Information Center ([http://itic.ioc-unesco.org/images/stories/media\\_resources/hawaii\\_information/runups/hawaii\\_2013\\_11x17\\_insetseparate\\_small.pdf](http://itic.ioc-unesco.org/images/stories/media_resources/hawaii_information/runups/hawaii_2013_11x17_insetseparate_small.pdf)) indicate no records prior to the March 2011 Sendai Earthquake tsunami, which generated an 11-foot wave at Mahai‘ula, piling sand into the pond and on top of picnic tables and benches. The tsunami also caused substantial damage to archaeological features and structures within the Magoon/Kaelemakule house complex.

The National Weather Service of the National Oceanic and Atmospheric Administration operates the Pacific Tsunami Warning Center and Alaska Tsunami Warning Center, which monitors sudden earth movements throughout the Pacific Basin. A tsunami from earth movements in South America would allow for as much as 15 hours warning time, and events in the Aleutian Islands, 4.5 hours, providing sufficient time for evacuation of the park. Sudden movement along faults close to Hawai‘i are unpredictable, and would allow for a few minutes to perhaps an hour of warning time, and evacuation is more problematic. Coastal recreational areas on the Kona Coast cannot avoid the tsunami hazard because the entire coast is vulnerable to tsunami. No warning sirens are present near the park, with the closest one at the Natural Energy Laboratory of Hawai‘i (NELHA), four miles to the south. This siren is unlikely to be audible at the park.

#### *Impacts and Mitigation Measures: Floodplains*

In keeping with the overall design philosophy of Kekaha Kai Park, the current proposed improvements have been conceived and designed to minimize the number and extent of structures consistent with fulfilling the area’s important recreational role. Among other goals, this helps limit inappropriate development with flood zones. As shown in the detailed site plans in Figure 4, all of the proposed improvements at Manini‘ōwali are outside the designated flood zone. At Mahai‘ula, the shoreline improvements are within the flood zones VE and AE. Several existing structures at Mahai‘ula are considered regulated structures under the National Flood Insurance Program. The structures have been designed to pass water through, in full conformance with floodplain regulations in Chapter 27 of the Hawai‘i County Code. The improvements within the flood zone proposed as part of the current project are limited to picnic tables and BBQ pits with concrete pads at grade, with no fill required. Because the flooding is coastal in nature, siting these structures in the 100-year floodplain would have negligible impact on the BFE and the size of the floodplain.

#### *Impacts and Mitigation Measures: Coastal Erosion*

Shoreline locations are subject to natural coastal processes including erosion and accretion, which can be affected by human actions such as removal of sand or shoreline hardening. Erosion may adversely affect not only the subject property’s improvements, but also adjacent properties and State land and waters, along with the recreational and ecosystem values they support.

As discussed above and illustrated in Figure 4, the improvements within the shoreline setback area are very minimal – at Manini‘ōwali, replacement of a ramp with a stairway and an accessible picnic table, and at Mahai‘ula, one new accessible BBQ pit partially within the shoreline setback and refurbishment of three existing BBQ pits (one lying just *makai* of the shoreline, the others inside the shoreline setback). They are unlikely to affect erosional or accretional processes. These improvements are necessary for safety and for equity in accordance with the Americans with Disabilities and cannot reasonably

be located outside the shoreline setting. DLNR Division of State Parks monitors the shoreline to detect any natural or human-induced changes as part of management, and will continue to do so determine if there are any adverse impacts. The process for permitting structures within the shoreline setback is discussed in Section 3.6.3.

#### *Impacts and Mitigation Measures: Sea Level Rise*

Of increasing importance to land use approvals in coastal regions throughout the world is future sea level rise. The Earth is warming because of increases in human-produced greenhouse gases such as carbon dioxide and methane, which in turn, has led to a rise in global sea level (<http://www.ncdc.noaa.gov/oa/climate/globalwarming.html>). According to the National Climate Data Center of the National Oceanic and Atmospheric Administration (NOAA), global mean sea level has been rising at an average rate of 1.7 mm/year (plus or minus 0.5mm) over the past century, a rate which has increased over the last 10 years to 3.1 mm/year (Bindoff et al 2007). NOAA projects an expected range of sea level rise over the next century of between 0.18 and 0.59 m due mainly to thermal expansion and contributions from melting alpine glaciers. However, potential contributions from melting ice sheets in Greenland or Antarctica may yield much larger increases. Dr. Charles Fletcher of the University of Hawai'i, Manoa, estimates that sea level may rise up to one meter by the end of the next century.

In Hawai'i, beach erosion, reef overtopping and consequent higher wave run-up, more devastating tsunami, and full-time submergence of critical coastal areas are likely to occur (<http://www.soest.hawaii.edu/coasts/sealevel/>). It is particularly important to consider the location of new infrastructure, and the State and counties must consider how to adjust zoning and setbacks so that large, expensive public buildings are not put in the path of inevitable damage. On the Island of Hawai'i, eustatic (global) sea level rise is coupled with local effects of subsidence. Since 1946, sea level at Hilo has risen an average of  $1.8 \pm 0.4$  mm/yr faster than at Honolulu on the island of O'ahu, a figure that has recently decreased. The degree to which this reflects subsidence versus variations in upper ocean temperature is currently not known (Caccamise et al 2005).

A scenario of modest sea level rise could affect the integrity or use of some or all of the current or proposed recreational features in the shoreline area, which are located less than 20 feet above sea level. Significant sea level increases, particularly in a case of sudden onset, could certainly affect the park. If so, it would be among thousands of facilities damaged in what would be the largest disaster in the Hawaiian Islands since human settlement. As sea level rise is gradual, there would probably be an opportunity to salvage some or all of the materials for reuse in a safer location. It is understood that in light of sea level rise of an indeterminate magnitude the property may be subject to significant erosion or even submergence. However, the certain benefits of additional recreational facilities over a span of decades would seem to outweigh the expected level of risk over the course of a century.

### *Impacts and Mitigation Measures: Coastal Hazard Warning and Evacuation*

In a September 13, 2013 response to early consultation (see Appendix 1a), Hawai‘i County Civil Defense Agency Administrator Darryl Oliveira stated that it would be prudent to consider warning sirens at the park, given the minimum four-mile distance to the nearest siren at NELHA. Subsequent investigations have determined that a siren requires electricity (which is available at Manini‘ōwali but not available or feasible at Mahai‘ula), costs \$90,000 to \$100,000, and after inspection to ensure adherence to specifications, is dedicated to the State Civil Defense for ownership, operation, and maintenance. Although this item exceeds the budget currently allotted for the project, DLNR Division of State Parks is exploring alternative means to cost-share a siren with private developers near Manini‘ōwali.

#### **3.1.4 Flora and Fauna**

Although currently undeveloped, Kekaha has a history of centuries of direct human use, and it has also been affected over the last hundred years by non-native and often invasive animals and plants. Therefore, although the term “wilderness” is often applied to the park owing to the undisturbed landforms and current feeling of splendid isolation, the terrestrial biota is far from pristine.

#### *Existing Environment: Flora*

The 2003 EIS involved studies of flora and fauna for the entire proposed park area. Vegetation then, as now, was sparse, as large portions of the park are open lava fields. Denser and taller stands of trees and coconut palms are generally found near the shoreline and near ponds, where trees can obtain water from groundwater sources. Other areas are barren or sparsely vegetated with grasses, bushes or short trees. A survey by botanist Winona Char in 1995 identified six vegetation community types in the Mahai‘ula section: 1) Coastal, 2) Pond, 3) Fountain grass grassland, 4) Kiawe forest, 5) Sparse ‘a‘a, and 6) Roadside. The most common species in these communities are the non-natives fountain grass (*Cenchrus setaceus*) and kiawe (*Prosopis pallida*). Coastal areas are dominated by other non-natives such as tree heliotrope (*Tournefortia argentea*) and ironwood (*Casuarina equisetifolia*), but there are also many natives including *hinahina* (*Heliotropium anomalum* var. *argenteum*), *naupaka* (*Scaevola sericea*), *pohuehue* (*Ipomoea pes-caprae*), *Pa‘u O Hi‘iaka* (*Jacquemontia ovalifolia* ssp. *sandwicensis*) *‘aki‘aki* (*Sporobolus virginicus*), *kauna‘oa* (*Cuscuta sandwichiana*), and *alena* (*Boerhavia repens*). On many beaches, former residents planted trees that still persist, including *milo* (*Thespesia populnea*), coconut (*Cocos nucifera*), false *kamani* (*Terminalia catappa*) and *kou* (*Cordia subcordata* – a native).

The Phase II improvements would principally occur within the Coastal (picnic tables, barbeques, restroom area improvements) and Roadside communities (road improvements, parking). A botanical survey of the very limited areas affected by the proposed improvements was conducted by Ron Terry, Ph.D, in 2013. No vegetation or species not

**Table 2. List of Plant Species Observed At/Near Sites of Proposed Improvement**

Scientific Name	Family	Common Name	Life Form	Status*
<b>MANINI'ŌWALI</b>				
<i>Cenchrus setaceus</i>	Poaceae	Fountain grass	Herb	A
<i>Jacquemontia ovalifolia</i>	Convolvulaceae	Pā'ū-o-Hi'iaka	Vine	I
<i>Pluchea symphytifolia</i>	Asteraceae	Sourbush	Shrub	A
<i>Prosopis pallida</i>	Fabaceae	Kiawe	Tree	A
<i>Sida fallax</i>	Malvaceae	'Ilima	Shrub	I
<i>Spergula arvensis</i>	Caryophyllaceae	Corn spurry	Shrub	A
<i>Tournefortia argentea</i>	Boraginaceae	Tree heliotrope	Tree	A
<i>Tridax procumbens</i>	Asteraceae	Coat buttons	Herb	A
<i>Waltheria indica</i>	Sterculiaceae	'Uhaloa	Herb	I
<b>MAHAI'ULA</b>				
<i>Aloe vera</i>	Agavaceae	Aloe	Shrub	A
<i>Atriplex semibaccata</i>	Chenopodaceae	Australian saltbush	Herb	A
<i>Boerhavia coccinea</i>	Nyctaginaceae	Boerhavia	Vine	A
<i>Casuarina equisetifolia</i>	Casuarinaceae	Ironwood	Tree	A
<i>Cenchrus ciliaris</i>	Poaceae	Buffel grass	Herb	A
<i>Cenchrus setaceus</i>	Poaceae	Fountain grass	Herb	A
<i>Cocos nucifera</i>	Aracariaceae	Coconut	Tree	A
<i>Leonotis nepetifolia</i>	Lamiaceae	Lion's ear	Herb	A
<i>Livistona chinensis</i> *	Arecaceae	Chinese fan palm	Tree	A
<i>Melinis repens</i>	Poaceae	Natal red top	Grass	A
<i>Morinda citrifolia</i>	Rubiaceae	Noni	Tree	A
<i>Prosopis pallida</i>	Fabaceae	Kiawe	Tree	A
<i>Sida fallax</i>	Malvaceae	'Ilima	Shrub	I
<i>Thespesia populnea</i>	Malvaceae	Milo	Tree	I
<i>Tournefortia argentea</i>	Boraginaceae	Tree heliotrope	Tree	A
<i>Waltheria indica</i>	Sterculiaceae	'Uhaloa	Herb	I

A=Alien E=Endemic I=Indigenous END=Federal and State Listed Endangered

Note: Observer: Ron Terry. Date: December 2013. \* Juvenile, sterile palm with armed stems, identification uncertain..

noted in the EIS were present, and no rare, threatened or endangered plant species were present or at risk of adverse effects. Observed plant species are shown in Table 2.

#### *Existing Environment: Terrestrial Fauna*

Typical mammals at the park include small Indian mongoose (*Herpestes a. auropunctatus*), wild goats (*Capra h. hircus*), mice (*Mus* spp.), rats (*Rattus* spp.), domestic dogs, (*Canis f. familiaris*), feral cats (*Felis catus*), and perhaps donkeys (*Equus a. asinus*). None of these alien mammals have conservation value and all are deleterious to native flora and fauna. All reptiles and amphibians in Hawai'i are non-native; several species of geckos, anoles and skinks are likely present at the park.

With the important exception of resident shorebirds, the avifauna is dominated by non-native species such as Common Myna (*Acroditheles tristis*) and Mourning Dove

(*Zenaida macroura*). Bird surveys during 1996 by biologist Tim Ohashi cited in the 2003 EIS noted that three endangered waterfowl species have been reported in the region: the Hawaiian duck or *koloa* (*Anas wyvilliana*), Hawaiian stilt or *ae'o* (*Himantopus mexicanus knudseni*), and Hawaiian coot or '*alae ke'oke'o* (*Fulica americana alai*). These birds are occasionally to frequently found at 'Opae'ula Pond. They were not observed by Ohashi during his observations at Ka'elehuluhulu Pond, although they may be present at least occasionally. Other native birds including the night heron or *auku'u* (*Nycticorax nycticorax hoactli*); the Hawaiian owl or *pueo* (*Asio flammeus sandwichensis*); the Pacific Golden-Plover or *kolea* (*Pluvialis fulva*), considered an indigenous winter visitor; the Wandering Tattler or *ulili* (*Heteroscelus incanus*), an endemic resident; and the Ruddy Turnstone or *akekeke* (*Arenaria interpres*), an indigenous winter visitor, are frequently seen in all areas of the park.

Beachgoers and park employees often see Hawaiian hoary bats (*Lasiurus cinereus semotus*), Hawai'i's only terrestrial mammal, in the area. This endangered species is commonly observed in many parts of the Island of Hawai'i. Bats roost in trees or shrubs taller than 15 feet and can be vulnerable during the pupping season, from June 1 to September 15 each year.

Finally, there is an endangered insect, Blackburn's sphinx moth (*Manduca blackburnii*) that is present in most areas of Kona. Critical habitat for this species is present in *mauka*, about five miles from the park. The adult moth, which is less susceptible to disturbance than juvenile forms, feeds on nectar from native plants including beach morning glory (*Ipomoea pes-caprae*), *ilie'e* (*Plumbago zeylanica*), and *maiapilo* (*Capparis sandwichiana*). Moths may be present as eggs, pupae or larvae on annual or semi-perennial plants at some sites. This close relative of the tomato hornworm of North America was formerly common on all Hawaiian Islands. Its populations were drastically reduced because of the decline of its principal natural host plant, the native tree '*aiea* (*Nothocestrum* spp.). Blackburn's sphinx moth has since been found to occasionally utilize non-native host plants, especially *Nicotiana glauca* (tree tobacco), but also *N. tabacum* (commercial tobacco), *Solanum melongena* (eggplant), *Lycopersicon esculentum* (tomato), and possibly *Datura stramonium* (Jimson weed). These weedy members of the Solanaceae family are found widely distributed throughout the Hawaiian Islands. No individuals of any known host plants or other members of the Solanaceae family were observed within the disturbance footprints of for any of the proposed improvements.

Although not listed as threatened or endangered currently, several rare native species of the yellow-faced bee are likely present at the park, including *Hylaeus anthracinus* and *H. flavipes*. These bees which favor native and non-native plants in the genera *Dodonaea*, *Jacquemontia* spp., *Myoporum*, *Scaevola*, *Sesbania*, *Sida*, *Sophora*, *Leptecophylla*, *Tribulus* and particularly *Tournefortia* (very common at the park) and are known from nearby O'oma (Daly and Magnacca 2003; <http://www.xerces.org/hylaeus-anthracinus/>).

### *Existing Environment: Aquatic Biota*

North Kona coastal waters have excellent marine biota, including healthy coral-based ecosystems. The waters off Kekaha Kai State Park are used by boaters, swimmers, divers, and fishers, and maintenance of water quality is essential for preservation of natural ecosystems that they utilize. Kona's oceanic waters also support several endangered and threatened mammal and reptile species. The endangered humpback whale (*Megaptera novaeangliae*) winters in Hawaiian waters from December to April. Green sea turtles (*Chelonia mydas*), hawksbill sea turtles (*Eretmochelys imbricata*), and Hawaiian monk seals (*Monachus schauinslandi*) are also often seen in the waters off Kekaha Kai State Park and on its shoreline.

The most recent survey of Ka'elehuluhulu Pond that our research was able to locate was by Richard Brock in 1972. Dr. Brock observed fairly common flora and fauna, including ditchgrass (*Ruppia maritima*), *Rhizoclonium* algae, the snails *Assimineia* and *Melania* snails, the isopod *Ligia*, the feeble shrimp or 'opae (*Palaemon debilis*), unidentified amphipods, diving beetles (*Trichocorixa reticulata*) and an unidentified dragonfly (*Odonata*). This assemblage was not indicative of a pristine ecosystem. Since that time, Dr. Brock has not visited or surveyed the site, but assumes that the biota has probably degraded further. Biologist Troy Sakihara of the DLNR Division of Aquatic Resources confirmed that although his agency had not systematically surveyed the pond, it is in a somewhat degraded condition. (R. Brock and T. Sakihara pers. comm. to R. Terry September 2014).

### *Impacts and Mitigation Measures*

Rare, threatened or endangered plant species and valuable ecosystems are present within Kekaha Kai State Park, and therefore development and recreational activities within the park need to be planned to avoid impacts. The proposed Phase II improvements occur outside of and away from sensitive wetland areas and pristine anchialine ponds that harbor endangered birds and rare aquatic invertebrates. The actions will not produce erosion or sedimentation and will not otherwise involve pollution of water. No disturbance of marine mammals or reptiles will occur as part of construction or use by parkgoers.

Regular foraging by Hawaiian hoary bats in many areas of the park indicates that the scale and nature of the park improvements here is unlikely to have any effect on this endangered species. It appears likely that no trees will require trimming or removal for any aspect of the project. In any case, DLNR Division of State Parks will refrain from activities that disturb or remove the vegetation taller than 15 feet between June 1 and September 15, when Hawaiian hoary bats may be sensitive to disturbance.

No critical habitat or plants that support juvenile Blackburn's Sphinx Moth are present in areas to be affected by the proposed improvement, and no effect to this species is expected.

In sum, given standard mitigation, no valuable or protected native species or ecosystems would be adversely affected.

### **3.1.5 Climate, Air Quality, Noise, and Scenic Resources**

#### *Environmental Setting: Climate and Air Quality*

The climate in the project area can be described as hot and dry. The average maximum daily temperature at sea level nearby in Kailua-Kona is near 80 degrees, and annual rainfall averages approximately 12 inches at Kekaha Kai State Park (U.H. Hilo-Geography 1998:57; Giambelluca et al 2014).

Manmade air pollution in West Hawai'i is minimal, but volcanic haze or vog, derived from emissions of sulfur dioxide from Kilauea Volcano that convert into particulate sulfate, persistently blankets the district.

#### *Environmental Setting: Noise*

Portions of the park are within two miles of the runways of Kona International Airport (KOA), under the dominant flight path of approaching jets, but outside the Airport Clear Zone. Consequently, from about 6 AM to 10 PM, the general quiet is punctuated every half hour or so by brief bursts of intense jet noise, especially at Mahai'ula. The recreational pattern within the park has had to develop within this acoustic context.

The noise descriptor used to assess environmental noise by many federal and State of Hawai'i agencies, including the Hawai'i Department of Transportation (DOT), is the Day-Night Average Sound Level (DNL). DNL is a representation of the average noise during a typical day of the year. DNL levels of 55 or less are typical of quiet rural or suburban areas. DNL exposure levels of 55 to 65 are typical of urbanized areas with medium to high levels of activity and street traffic. DNL exposure levels above 65 are representative of dense urban sites and areas near large highways or airports. In general, the DOT considers DNL levels greater than 60 to be unsuitable for extensive natural wildlife and recreation areas.

DOT Airports completed its federally-required 14 CFR Part 150 Noise Compatibility Program (NCP) update for KOA in April 2011 (<https://federalregister.gov/a/2012-1805>). The report is available at: (<http://www.kona-airport.com/downloads/KOA%20150%20chpt%207.pdf>). The 14 CFR Part 150 NCP for KOA includes aircraft noise contour maps for 2008 conditions as well as projections for the "long-range" (date undefined). These maps were developed using operational forecasts, existing aircraft flight tracks for the existing runway, and assumed flight tracks for a proposed new runway. Potential noise impacts from additional military operations at KOA were also investigated. The southern portion of Kekaha Kai State Park at Mahai'ula experienced noise of about 60 DNL in 2008; long-range forecasts under any scenario of expansion indicate that noise levels in this location will remain roughly the same.

*Environmental Setting: Scenic Resources*

The project area offers a number of scenic views, including some considered significant for their natural beauty in the Hawai‘i County General Plan (Table 3). Most of these scenic resources are visible from within Kekaha Kai State Park, and some are within it.

**Table 3**  
**Areas of Natural Beauty Noted in Hawai‘i County General Plan**

<b>Scenic Resource</b>	<b>TMK</b>	<b>Location</b>
Hualalai	7-2-01, 7-8-01	Kaupulehu
Kaupulehu	7-2-03:1, 2	Kaupulehu
Kua Bay Area	7-2-04	Maniniōwali
Opae Ula Pond	7-2-04:1	Makalawena
Makalawena	7-2-04:1	Makalawena
Kahoiawa	7-2-04:3, 4	Awakee
Kakapa Bay Area	7-2-04:4	Kukio 2nd
Kukio Bay/Beach Area	7-2-04:5	Kukio 1st
Mahaiula Bay/Beach Area	7-2-05:3	Mahaiula

*Impacts and Mitigation Measures*

The proposed action would not measurably affect air quality or noise levels except temporarily and minimally during construction, which would last from weeks to months per individual facility and would not markedly affect recreation. No sensitive uses outside the park would be affected.

As stated above, the recreational pattern within the park has had to develop within an existing acoustic context of fairly high noise levels, particularly in the south at Mahai‘ula. These levels are forecast to stay roughly the same, and given the popularity of the park heretofore, DLNR Division of State Parks believes that these noise levels continue to be acceptable. It should be noted that the updated 14 CFR Part 150 NCP for KOA includes measures to abate aircraft noise through pilot education, controlling land development, monitoring the impacts of noise on non-compatible land uses, and implementing and updating the program.

The design of all elements of the project has been conceived to enhance the scenic character of the park. The important viewplanes or scenic sites recognized in the Hawai‘i County General Plan would be not be affected in an adverse way.

### **3.1.6 Hazardous Substances, Toxic Waste and Hazardous Conditions**

#### *Environmental Setting, Impacts and Mitigation Measures*

As the site is an existing recreational area, and the proposed project does not involve substantial excavation or expanded land use, no systematic assessment of the site history was conducted to determine if hazardous materials, toxic waste or other hazardous conditions may have been present on the site. Reconnaissance of the site during topographic, botanical and design surveys did not reveal any evidence of such conditions, nor have there been reports of such conditions. Based on these factors, there does not appear at this time to be any outstanding concern related to these issues. If evidence of suspicious materials or conditions appears during additional survey, design, or construction, it is recommended that DLNR Division of State Parks undertake a systematic assessment of the property.

## **3.2 Socioeconomic and Cultural**

### **3.2.1 Socioeconomic Characteristics**

The project would most directly affect West Hawai‘i communities, but park visitors from other parts of the County, the State and elsewhere would also benefit from the improvements. Table 4 provides information on the socioeconomic characteristics of Kailua along with those of Hawai‘i County as a whole for comparison, from the U.S. 2010 Census of Population.

Like the State as a whole, the Kailua is diverse in its social makeup. Although very similar to the State on most social measures, Kailua has a higher greater proportion of whites and Native Hawaiians; a smaller proportion of Asians; and slightly lower incomes and higher poverty rates.

Kekaha Kai State Park is an important recreational resource for West Hawai‘i, the County of Hawai‘i, and the State. Having a place to engage in coastal activities is beneficial to the physical and mental health of the community and also sustains the economy through attracting visitors.

#### *Impacts*

The proposed project would benefit social conditions in North Kona, West Hawai‘i and the entire Island of Hawai‘i through enhancement of a vital recreational area that serves thousands of residents and visitors. The project is not meant to increase visitation, but rather to better serve the visitors that already utilize the park, through safer foot access to the beach at Manini‘ōwali, additional BBQ pit and picnic tables (including ADA accessible facilities), improved toilet facilities, better organized parking at Mahai‘ula, and road repairs that will help avoid damage to vehicles and calm traffic.

**Table 4: Selected Socioeconomic Characteristics**

<b>CHARACTERISTIC/AREA</b>	<b>Kailua-Kona CDP</b>	<b>State of Hawai'i</b>
Population, 2010	11,975	1,360,301
Persons under 5 years, percent, 2010	6.7%	6.4%
Persons under 18 years, percent, 2010	23.4%	22.3%
Persons 65 years and over, percent, 2010	12.4%	14.3%
Female persons, percent, 2010	49.8%	49.9%
White alone, percent, 2010 (a)	36.7%	24.7%
Black or African American alone, percent, 2010 (a)	0.4%	1.6%
American Indian and Alaska Native alone, percent, 2010 (a)	0.6%	0.3%
Asian alone, percent, 2010 (a)	18.1%	38.6%
Native Hawaiian and Other Pacific Islander alone, percent, 2010 (a)	15.2%	10.0%
Two or More Races, percent, 2010	25.2%	23.6%
Hispanic or Latino, percent, 2010 (b)	12.2%	8.9%
White alone, not Hispanic or Latino, percent, 2010	34.5%	22.7%
Living in same house 1 year & over, percent	84.8%	84.9%
Foreign born persons, percent	17.5%	17.8%
Language other than English spoken at home, percent age 5+	25.7%	25.6%
High school graduate or higher, percent of persons age 25+	88.5%	90.1%
Bachelor's degree or higher, percent of persons age 25+	21.0%	29.5%
Veterans, 2007-2011	1,186	114,109
Mean travel time to work (minutes), workers age 16+	19.1	25.9
Housing units, 2010	5,225	519,508
Homeownership rate, 2007-2011	52.6%	58.7%
Housing units in multi-unit structures, percent, 2007-2011	49.8%	38.9%
Median value of owner-occupied housing units, 2007-2011	\$440,500	\$529,500
Households, 2007-2011	4,450	445,513
Persons per household, 2007-2011	2.98	2.93
Per capita money income in the past 12 months (2011 dollars)	\$25,132	\$29,203
Median household income	\$60,744	\$67,116
Persons below poverty level, percent	10.5%	10.2%

Notes: (a) Includes persons reporting only one race. (b) Hispanics may be of any race, so also are included in applicable race categories

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, County Business Patterns, Economic Census, Survey of Business Owners, Building Permits, Census of Governments  
<http://quickfacts.census.gov/qfd/states/15/1523000.html> Accessed September 2013

### **3.2.2 Cultural and Archaeological Resources**

The cultural value of the project site was assessed as part of this EA. The purpose of this investigation was to determine whether the park supported any traditional gathering uses, was vital for access to traditional cultural sites, or had other important symbolic associations for native Hawaiians. It should be emphasized that the project is restricted to mostly disturbed areas already in use by visitors that are professionally managed to protect cultural and historical resources.

### *Historical and Cultural Background*

Kona became a residence of many of the *ali'i* (chiefs) of the Island of Hawai'i beginning with Umi-a-liloa, who unified the island circa 1525. By this time, the island was divided into six districts or *moku-o-loko* (Fornander 1996 – Vol. II: 100-102). On Hawai'i Island, the district of Kona is one of six major *moku-o-loko* within the island. Kona, like other large districts on Hawai'i, was further divided into *'okana* or *kalana* (regions of land smaller than the *moku-o-loko*, yet comprising a number of smaller units of land), including that of Kona 'akau (North Kona), which extended from Lanihau to Pu'uohau.

Within these larger land divisions was the *ahupua'a*, a traditional land division that later became part of the old tax and land management system of the Hawaiian Kingdom. The *ahupua'a* was managed as an integrated unit following principles of sharing and sustainability of resources. Each *ahupua'a* consisted of a land section stretching from the mountains to the coast and its adjacent waters with a diversity of resources. Each was managed by a *konohiki* (a kind of land manager) for a chief. The settlement patterns within each *ahupua'a* were based on available resources but typically involved coastal and upland uses that complemented each other. Each *ahupua'a* was independent in its management and some were wealthier than others in resources. Sharing between residents of different *ahupua'a* was commonplace.

Like Umi-a-liloa did centuries before, after he unified all the islands Kamehameha I moved his court to Kamakahonu in the *ahupua'a* of Lanihau (present-day Kailua-Kona). Here Kamehameha spent the last years of his life and died in 1819 (Menton 1994: pp. xv-xvii).

Soon after the death of Kamehameha I, Kamakahonu was yet again the site of historic events, when Kamehameha II (Liholiho) ended the *kapu* forbidding women and men to eat together, thereby precipitating the end of the ancient religion with its *kapu* system. Later on in the year 1820, Kamehameha II and his entourage, including a number of American Protestant missionaries, departed for O'ahu, where the Kingdom's government was relocated. John Adams Kuakini created a fort out of the Ahu'ena Heiau at Kamakahonu, where governance of the island continued under his charge.

Major changes in the area were brought about by the introduction of new forms of agriculture, which were of limited success, and by the Great Mahele in 1848, whereby Kamehameha III and his chiefs redistributed land ownership (Kelly 1983: pp. 22, 35-36). Over 800 *kuleana* property awards to native Hawaiians were made in Kona at this time and many other thousands of acres of Kingdom lands were sold to both Hawaiians and foreigners.

Kekaha Kai State Park comprises parts of six traditional *ahupua'a* in North Kona; Kaulana, Mahai'ula, Makalawena, Awake'e, Manini'owali and Kūki'o. Because of the harsh, dry volcanic landscape on the Kona Coast, the *ahupua'a* concept resulted in small,

dispersed, coastal settlements located near fresh water and a canoe landing. The wealth of the region was based on its ocean resources and fertile upland areas rather than its coastal plains. A broad uninhabited or sparsely inhabited open area separated the coastal area from the cultivated and forested uplands which were located in the precipitation zone. *Mauka-makai* trails connected the coast to the uplands and residents of both areas traded and shared their respective goods. Each *ahupua'a* had its own coastal settlement except in a few places where site conditions were inhospitable. The sizes of the coastal settlements varied with the geography and available resources.

Mahai'ula was the site of a small but well known fishing hamlet in the 19th century, and a traditional stopping place for canoes along the Kona Coast (Maly 1997). It is near the northern terminus of the old Pa'aiea fishpond, which was used as an inland passage at Mahai'ula for canoes traveling along the coast. A site next to the Magoon/Ka'elemakule complex has been used for canoe and boat landings into the 1970s and early 1980s. Behind the crescent dune formations of Mahai'ula lie burial and habitation features (which are not within or near the area proposed for the Phase II park improvements). Canoe landing areas and the residential compound around the Magoon and Ka'elemakule houses form a complex with historic values associated with the first half of the 20th century. Beyond this compound are more archaeological features, including possible burials and some anchialine ponds in association with older house platforms and possible fishing *ko'a*.

The legendary cave Kolomikimiki is located in this section (Keawe nui a 'Umi, or 'Umiokalani) of the park. Famous legends told about this cave include a fishing story involving the Ali'i-nui Umi. The cave complex is in a parcel land owned by the Catholic Diocese of Hawai'i and associated with burials and the Ka'elemakule family.

Extending from Keahole all the way north to Ka'elehuluhulu (the location in which the Phase II park improvements at Mahai'ula are proposed) was a three-mile long fishpond named Pa'aiea, which came to belong to Kamehameha the Great. This fishpond was covered by the 1801 lava flow. While this area is now barren lava flows, there are lava tubes and shelters located along the coastline. Old timers speak of larger fishing *ko'a* features along the coast at Ka'elehuluhulu and Kawili that were destroyed within living memory. Off Kawili Point and Ka'elehuluhulu were waves are famous for their size and form. Folk tales report perfect 25-foot waves that one could ride into the bay, especially in olden times. Reports indicate the 1946 tidal wave may have altered the bay and changed this character.

Ka'elehuluhulu has traditionally been associated with fishing and fishermen. It was well known for the abundance of fish and was part of the outer edge of Pa'aiea pond. The abundance was associated with both the marine resources and the pond. The small ponds at Ka'elehuluhulu may be the sole remnant of Pa'aiea Pond. Behind Ka'elehuluhulu Beach there is an area with many *papamū* (platforms for a Hawaiian game *kōnane*, which is similar to checkers) etched into the lava in the kiawe forest area and on the bare pahoehoe. It was probably a popular shaded resting area out from the hot Kona sun.

The Manini'ōwali- Kūki'o area is also rich in cultural resources. Although the park here only encompasses the 1,000-foot long strip along the shore, this is the area most replete with historical and cultural resources. The cluster of sites at the base of Pu'u Kuili and along the shoreline of Kaho'iawa Bay extends into the Manini'ōwali Ahupua'a. Near Kua Bay, there is a rich complex of archaeological sites around the anchialine pond and the dune area near the shore. Intact canoe shed walls (*hale wa'a*), burials, and shelters are found in this area. Many lava tubes used for shelter, storage, and burials are also located in this area. While the density of features diminishes as one moves *mauka*, there are also agricultural mounds, shelters, and burials near the historic *mauka-makai* trails that run through the area. Some intact burial sites were discovered in recent archaeological investigations and were re-sealed after study. North of Kua Bay, on the old lava flow and the edge of Kakapa Bay, are other very significant structures, including burial platforms, a *heiau*-like structure, *ko'a*, and *papamū*. The historic trail continues on to Kikaua Point and Kūki'o Bay (Uluweuweu Bay) which along with the offshore rocks and the smaller cinder cone *mauka* of Kua Bay, have important associations with the place name legends surrounding Manini'ōwali.

#### *Archaeological Sites and Impacts*

The brief discussion above outlined the variety and quality of archaeological resources present in Kekaha Kai State Park. Readers interested in greater detail may consult the 2003 EIS. Since establishment of the Park, the archaeological resources have come under the protection of the DLNR Division of State Parks, which includes archaeologists who inventory sites and design measures for their protection and interpretation in coordination with the DLNR State Historic Preservation Division (SHPD). The nature, density and location of park improvements have been designed from the outset by park planners coordinating with archaeologists to ensure that significant historic sites are protected from adverse effects.

State Parks archaeologist Tracy Tam Sing worked closely with park planners to ensure that the proposed Phase II Improvements would avoid any effects to historic properties. After finalization of the improvements as reflected in the Site Plans provided in Figure 3 of this EA, Mr. Tam Sing wrote the SHPD with three separate letter reports and requests for determinations of no historic properties affected. These letters covered the Walkway and Shower Improvements in the Manini'ōwali Section; the Park Road Improvements in the Mahai'ula Section; and the Storage Tank/Restroom Repairs and BBQ Pit Improvements in the Mahai'ula Section. The letters are attached as part of Appendix 2.

To summarize the findings of the reports, there are a number of archaeological sites located near the areas proposed for improvements, as would be expected in a park that was established partly in order to preserve and interpret such resources. These include petroglyphs and *papamū*, anchialine ponds, walls, platforms, salt pans, shelters and habitations and pit quarries.

In the Mahai‘ula section, there are eight archaeological sites in the project vicinity. The locations and other characteristics of these sites are shown in the letters from DLNR Division of State Parks to the SHPD contained in Appendix 2. Figures 6 and 7 and Table 2 of the letter of July 15, 2013 concern the road improvements section, and Figure 6 and Table 2 of the letter of May 13, 2014 have information on the sites of the shoreline section). The petroglyphs and *papamū* are believed to be significant for the potential to yield information about the history of the area, especially after the 1801 lava flow, and also for their traditional cultural significance to native Hawaiians. Further research may identify descendants of those who inscribed them and the cultural activities associated with creating these petroglyphs. The two ponds by the parking lot are significant because of their association with the former fishpond that existed along this shoreline before the 1801 lava flow. Habitation features are limited in the project vicinity, but are significant for their potential to yield information with further research.

Mr. Tam Sing inspected the Mahai‘ula area on June 19 and August 8, 2013, along with several inspections afterward as the design was refined. No historic properties, including historic structures or archaeological sites/ features, were observed in the areas of the proposed Phase II improvements where the new storage/ water tank building is located, as well as the locations of the two new ADA BBQ pits, the ADA picnic table, and the three refurbished BBQ pits. The area between the existing comfort stations was previously bulldozed as part of the construction of the comfort stations and parking lot, which previously disturbed the surface of the 1801, pāhoehoe lava flow. This area was also filled in and compacted with gravel. All other work areas, with the exception of the new ADA picnic table, will occur in previously disturbed areas. The new ADA picnic table is near existing facilities and it will be placed mostly on previously disturbed surface of the 1801 lava flow. Therefore, no further impact is anticipated. The site inspection also determined that the previously identified archaeological sites in the vicinity are buffered by concrete sidewalks, parking lots, elevation differences, and vegetation. Therefore, no archaeological sites should be impacted by this project.

In the Manini‘ōwali Section, one historic site is present. SIHP Site Number 50-10-18-23356 is a coastal habitation complex that consists of nine feature clusters and a number of outlying features behind the crescent of Manini‘ōwali (Kua Bay), including over 300 total features (see Figures 6 and 7, and Table 1 of the letter to SHPD of March 17, 2014 in Appendix 2 for location and other details). Site 23356 feature cluster E consists of 15 individual features, including features 92-105, along with newly discovered feature 335, all of which are located in the project vicinity. Eight habitational features comprise the majority of the features within cluster E, and they are significant for their potential to yield information with further research. The well along with five pit quarry features contained within cluster E are significant as well, as they represent excellent examples of site types.

State Parks Archaeologists Tracy Tam Sing and Alan Carpenter inspected the project area on October 7, 2013. During the survey, SIHP Site 23356 Features 92-105 were

reconfirmed as being located near the project area. Also a newly discovered feature, No. 335, was located four meters to the north of the existing ramp of the project area.

The area was previously bulldozed, filled in, and leveled during prior park improvements involving the existing retaining concrete/stone wall and outdoor shower. The location of the proposed improvements corresponds to the previously disturbed areas. Therefore, no further impact to the lava within the area is anticipated.

#### *Mitigation Measures for Archaeological Sites*

In accordance with the Archaeological Preservation Plan for improvements at Kekaha Kai State Park, Manini'ōwali Section, all archaeological sites and features within or near construction activities will be flagged, and site buffers consisting of orange fencing will be placed at the limits of construction activities. Orange fencing will be provided by the construction crew. This buffer is to be put in place by the construction crew under the supervision of the State Parks archaeologist prior to the demolition of the ramp. It is to stay in place until the demolition of the ramp has been completed, at which time it can be taken down. The construction buffers will be no more extensive than necessary to protect the features, and will avoid fencing completely around the archaeological features in order to prevent damaging the natural landscape (through the chiseling out of lava for stake placement, etc.). In addition, construction in the Manini'ōwali Section will be accompanied by archaeological monitoring by the State Parks Archaeologist. All heavy machinery will be confined to the previously disturbed areas in order to reduce impacts on any potential subsurface deposits in the beach sand.

For all sections, in the event that subsurface features, cultural deposits, or human remains are discovered during construction activities, the procedures outlined in HAR 13-274-12 or HAR 13-300-40 relating to inadvertent discoveries will be followed. This obligation shall be conveyed to the construction crew prior to the commencement of work activities by the State Parks archaeologist, and DLNR Division of State Parks will make it an explicit contract condition for all work done on the project.

By letter of August 2, 2013, the SHPD provided concurrence with a determination of no historic properties affected for the parking and roadway improvements on the Mahai'ula Access Road, given the conditions listed above. By letter of April 19, 2014, the SHPD provided concurrence with a determination of no historic properties affected in the Manini'ōwali section of the park, given the conditions listed above. By letter of July 8, 2014, the SHPD provided concurrence with a determination of no historic properties affected in the Mahai'ula shoreline area, given the absence of historic sites from the specific area of improvements and construction staging, and the conditions listed above.

#### *Impacts to Cultural Practices and Mitigation Measures*

During development of the properties for use as a State Park, an extensive program of cultural resource inventory and public involvement identified the deep connection of the

cultural descendants of Kona with the Kekaha area. The philosophy of low-key and minimal facilities originated in part from a desire to retain to resources that nurture continuing cultural practices, including gathering, fishing, surfing, swimming and experiencing the works of the ancestors in a relatively undisturbed setting.

The 2003 EIS for the park included a Cultural Impact Assessment as Chapter 10 of the document, which is incorporated by reference and summarized in this EA. Recommendations elicited during the oral history interviews provided DLNR Division of State Parks suggestions for long-term management objectives, including historic site preservation, protection of natural resources, and interpretive programs in the park.

Among these recommendations were the following:

- Consideration of the strong cultural attachment and historical pride among the *kupuna* for the native place names of lands within the park. It was requested that DLNR Division of State Parks use the individual *ahupua'a* and other place names throughout the park – at interpretive wayside situations and in interpretive and educational materials. *Status: traditional names have been adopted and maintained. It should be noted that one suggestion to change the name of the park from Kekaha Kai to Kekaha – as this was redundant and not a name used by kupuna of the area – has not been implemented.*
- Protection of Kolomikimiki, the Ka'elemakule burial cave parcel. The parcel was conveyed to the Catholic Church without full family concurrence. It is requested that the State of Hawai'i and Division of State Parks monitor land tenure of the "Burial Lot". Should the Catholic Church ever seek to dispose of Kolomikimiki, Ka'elemakule family members would like to be notified. The Ka'elemakule descendants and *kupuna* who participated in the study supported any efforts that the State of Hawai'i may make to incorporate Kolomikimiki into the larger Park parcel and protecting it in perpetuity. Because of the sensitive nature of the site, it was asked that Kolomikimiki be monitored and that visitation to the site be limited to family members. But because of the rich traditions of Kolomikimiki, its stories - without specific location references - should be a part of the parks interpretive program. *Status: The cave remains protected and monitored by State Parks, with visitation by family members allowed. Because of its sensitivity, there is no current interpretive program and no plans to implement one.*
- Protection of all additional archaeological sites including others that are tentatively identified as burial features. *Status: DLNR Division of State Parks has protected all known and potential (uninvestigated) burial sites.*
- Work to restore and protect Kalāhikiola, the c. 1882 Ka'elemakule house is an important historical feature that is part of the cultural landscape of Mahai'ula. *Status: DLNR Division of State Parks is working on nominating the Ka'elemakule house and Magoon house to the National Register, in preparation for their restoration. In June of 2013 the two homes and surrounding features were mapped and were given SIHP Site Number 50-10-18-29941, features 1-40.*

- Develop and perpetuate on-site resident park steward program to help park users understand the unique history of Kekaha, and inform them of appropriate use and visitation of the park's natural and cultural resources. *Status: Given fiscal constraints, DLNR Division of State Parks has undertaken alternative approaches to accomplishing these educational goals.*
- Pohakuolama (also referred to as “Pohakuwahine” the female rock), situated offshore, fronting the old Kaelemakule house, is a sacred site and important cultural feature. It is requested that Pohakuolama be protected - e.g. there be no diving and playing from the stone, and boats not be allowed to anchor to the stone, etc. *Status: DLNR Division of State Parks does not permit anchoring to this stone.*
- Work with other State agencies to ensure protection of the Kekaha fisheries. Marine resources in the park need to be protected from commercial aquarium fish collectors; and subsistence fishing as practiced by native Hawaiian fishermen needs to be protected. *Status: DLNR has worked with local stakeholders to develop management for the West Hawai‘i fishery over the last 10 years. Tropical fish collectors must register with DLNR and prominently display signs and flags indicating that they are aquarium collectors. New rules adopted in late 2013 codify prohibitions on scuba spearfishing in certain West Hawai‘i waters, provide a “white list” of fish aquarium fish collectors may remove within the West Hawai‘i Regional Fishery Management Area, and introduce size and bag limits for yellow tang, Achilles tang and kole.*
- Interpret sites and resources of the coastal region in context of broader, native *ahupua‘a* management system - an integrated resources management approach. It is also urged that the interpretation of the traditions and history of Kekaha and the park lands be inclusive of the diverse accounts of the land. Even in cases, where one account may differ from another, there is richness in the diversity, and the accounts help to demonstrate the dynamic qualities of the culture. *Status: Some interpretive planning has been conducted by State Parks but implementation awaits funding for staffing. For the near future, interpretive efforts will focus more on sign at appropriate locations and sites.*
- Proceed cautiously with development of a landscaping plan. Should native species be planted to replace alien plants, prudent thinning of the existing overstory should be undertaken so as to protect the new plantings, giving them time to become established. It is also noted that *kiawe* has become a part of the landscape, and that it has a role in the lands of Kekaha. *Status: There are no current plans to develop or implement a landscaping plan. It is park policy that where native plants are planned to replace alien plants, protective works be placed around them to ensure their growth and to also protect them from being eaten by goats.*
- Ongoing consultation should occur as a part of the management and decision-making processes in Kekaha Kai State Park, particularly with the *kupuna*. *Status: State Parks archaeologists continue to consult with knowledgeable residents, including kupuna. State Parks consulted on improvements with Hui Laulima o Kekaha Kai at Kua Bay, composed of individuals with cultural knowledge about*

*the area. On November 21, 2013, consultation on the project was held with members of Hui Laulima o Kekaha Kai at Kua Bay, including Christine Bean, Bobby Camara, Hannah Kihalani Springer, and Nicole Lui, all of whom have extensive ties to the area. These consultees concur with the proposed project activities, and were pleased to learn of the improvements and protective measures pertaining to the archaeological features within the project.*

The proposed improvements are, in general, relatively minor repairs and upgrades to existing facilities that are being conducted in the context of a park that has as part of its mission the perpetuation of cultural sites and practices. As discussed above, impacts to archaeological sites (which are associated with Hawaiian culture and history and have cultural significance) will be avoided. No other cultural sites or practices would be affected. It would appear that the proposed improvements will not have a direct or cumulative effect on cultural properties or practices. To confirm this finding and determine whether there may be additional concerns, the Draft EA was distributed to several cultural experts and/or Native Hawaiian organizations, including Hui Laulima o Kekaha Kai, the Office of Hawaiian Affairs (OHA) and the Kona Hawaiian Civic Club for their input.

### **3.3 Infrastructure**

#### **3.3.1 Utilities**

##### *Existing Facilities and Services*

At the Manini‘ōwali section of the park, electrical power is supplied by Hawai‘i Electric Light Company (HELCO), a privately owned utility company regulated by the State Public Utilities Commission, via its island-wide distribution network. Water is provided by County of Hawai‘i’s Department of Water Supply (DWS). Wastewater from the restrooms is treated by the Kūki‘o residential development system.

No utilities are available in the more primitive Mahai‘ula section of the park. Restrooms utilize vault toilets that require periodic pumping. No water service is present.

For both areas, State Parks provides rubbish bins for visitors, and disposes of the rubbish in the West Hawai‘i Sanitary Landfill at Pu‘uanahulu, about 10 miles north.

##### *Impacts and Mitigation Measures*

Although the additional shower at Manini‘ōwali will involve slightly greater water use, no additional water supply, storage or transmission facilities are required, and water pressure is adequate. No other effect to utilities will occur at either portion of the park.

### **3.3.2 Roadways and Parking**

#### *Existing Facilities*

The Manini‘ōwali area of the park is accessed by a four-legged intersection of Queen Ka‘ahumanu Highway with separate lanes for all turning movements, merge lanes for right turns and shelter lanes for left-turns off the access road. The access road is 7,500 feet long and paved. The three-legged intersection of the two-mile long, unpaved Mahai‘ula access at Queen Ka‘ahumanu Highway has a left-turn lane for inbound park traffic, but no separate right-turn lanes, merge lanes or shelter lanes. Observations by DLNR Division of State Parks indicates that these facilities are adequate for current use of these areas of the park (see Figure 1a for locations).

Queen Ka‘ahumanu Highway is currently scheduled for widening from two lanes to four between Kealakehe Parkway and Kona International Airport. The project has been delayed for a variety of reasons and the completion date is uncertain. Long-term plans call for widening north of Kona International Airport, which could potentially include the access intersections for Kekaha Kai State Park, but there is no timetable for such action, which will likely be decades in the future.

#### *Impacts and Mitigation Measures*

The proposed project adds very minor facilities to the existing recreational resources of the park: water storage for maintenance and cleaning; picnic and BBQ facilities need to be replaced and/or made accessible pursuant to the Americans with Disabilities Act, better organization of existing parking; road repair to help avoid damage to visitor vehicles and provide traffic calming; and a safer stairway access to the beach at Manini‘ōwali. The project is not intended or likely to increase visitation, but rather to better accommodate existing use. No additional vehicular use is expected to result from the improvements.

In a comment letter in response to early consultation, the Hawai‘i State Department of Transportation, Highways Division (HDOT), requested that the EA include a traffic assessment for HDOT review (see letter of October 3, 2013, in Appendix 1a). DLNR Division of State Parks believes that a traffic assessment is not merited for a project that is unlikely to produce additional traffic impacts, but does recognize that potential future improvements, such as substantial camping facilities, major parking lot expansion, development of a visitor center, etc., may require such analysis, which would be provided in the environmental documentation that such actions would trigger.

### **3.4 Secondary and Cumulative Impacts**

The proposed project will not involve any secondary or cumulative impacts, such as population changes or effects on public facilities. Although the project would provide

some short-term construction jobs, these would almost certainly be filled by local residents and would not induce in-migration.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. None of the adverse effects of the project are more than negligible, and there is almost no likelihood that the sum of such impacts added to others from nearby projects could become significant, or even noticeable. However, it is worthwhile to simply review the context of the proposed project and adjacent construction projects that would occur within the next 18 months, the proposed time-frame of the improvements.

Review of SMA permits and Chapter 343 documents in the OEQC Environmental Notice as well as press coverage indicates that there are a number of planned or ongoing projects in North Kona in the 2013-2017 timeframe. Most major projects here are centered in the growing Kailua to Keahole area. These include improvements to Kona International Airport and Queen Ka'ahumanu Highway and related roads between Kealakehe Parkway and the airport; minor improvements associated with the County's acquisition of O'oma coastal lands for open space; energy facilities and road construction at the Natural Energy Laboratory of Hawaii (NELHA); Honokohau Harbor improvements; the Kamakana Villages at Keahuolu (commonly known as the Forest City project); the La'i'opua Community Center; and the Kona Judiciary Complex.

All of the activities are located two or more miles from Kekaha Kai State Park and will have little interaction potential, especially given the intrinsically minor nature of the proposed park improvements.

The adverse effects of constructing and utilizing the proposed park are very minor and temporary disturbance to air quality, noise, and visual quality during construction. Other than the precautions for preventing any effects to water quality during construction listed above in Section 3.1.3, endangered species in Section 3.1.4, and historic properties in Section 3.2.2, no special mitigation measures should be required to counteract any small, adverse cumulative effect of other projects. It is particularly important to note that the project is expected to generate only negligible scenic impact, no additional traffic, no effect to historic or cultural properties, and beneficial impact to public use and enjoyment of trails and shoreline areas. There would thus be no risk of cumulative impact to these resources. Furthermore, the project does not involve a commitment for larger actions.

### **3.5 Required Permits and Approvals**

The following permits and approvals would be required:

1. State DLNR Engineering Division
  - a. Review of building plans for compliance with all relevant codes (e.g., electrical, plumbing, seismic, etc).
  - b. Review of grading and drainage plans (if any)

2. State DLNR Office of Coastal and Conservation Lands and Surveyor
  - a. Certified Shoreline review and approval by the State Surveyor (obtained Conservation District Use Permit (potential))
3. State Department of Health (SDOH)
  - a. Disability and Communication Access Board (DCAB) plan review and approval.
  - b. National Pollutant Discharge Elimination System Permit (NPDES)
4. County Department of Public Works (DPW)
  - a. Variance or exemption from HCC Chapter 27 – Flood Control to allow building within the VE Zone (if necessary)
  - b. Building Permit: review of building plans for compliance with all relevant codes (e.g., electrical, plumbing, seismic, etc.).
  - c. Review of grading and drainage plans (if any)
5. County Planning Department
  - a. Special Management Area (SMA) Use Permit.
  - b. Variance to Shoreline Setback for structures are within 40 feet of the Certified Shoreline unless determined by the Planning Director to be minor activities not affecting shoreline process.
  - c. Plan Approval (as required, to be coordinated with Planning Department)

### **3.6 Consistency With Government Plans and Policies**

#### **3.6.1 Hawai‘i State Plan**

Adopted in 1978 and last revised in 1991 (Hawai‘i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State’s long-run growth and development activities. The three themes that express the basic purpose of the *Hawai‘i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The proposed project would promote these goals by improving a vital recreational resource for the Island of Hawai‘i community, thereby enhancing quality-of-life and community and social well-being.

#### **3.6.3 Hawai‘i State Land Use Law**

All land in the State of Hawai‘i is classified into one of four land use categories – Urban, Rural, Agricultural, or Conservation – by the State Land Use Commission, pursuant to Chapter 205, HRS. The entire park is in the State Land Use Conservation District. In a September 23, 2013 letter from the DLNR Office of Conservation and Coastal Lands, Administrator Sam Lemmo stated:

“As the Phase II portion was not included in the original CDUP this office is requesting that the applicant submit for processing a Conservation District Use Application (CDUA) to apply for the proposed land uses.

1. The construction of camping facilities [note: not included in Phase II activities], access road repairs and maintenance, new water systems and other related park improvements are considered identified land uses within the Conservation District Resource and General Subzones pursuant to Hawaii Administrative Rules (HAR) §13-5-22, P-6 PUBLIC PURPOSE USES, (D-I) Not for profit land uses undertaken in support of a public service by an agency of the county, state, or federal government, or by an independent non-governmental entity, except that an independent non-governmental regulated public utility may be considered to be engaged in a public purpose use. Examples of public purpose uses may include but are not limited to public roads, marinas, harbors, airports, trails, water systems and other utilities, energy generation from renewable resources, communication systems, flood or erosion control projects, recreational facilities, community centers, and other public purpose uses, intended to benefit the public in accordance with public policy and the purpose of the Conservation District.”

The proposed use is consistent with intended uses for the State Land Use Conservation District, subject to obtaining a Conservation District Use Permit (CDUP), which will be sought at the conclusion of the EA and SMA process.

### **3.6.3 Hawai‘i DLNR Division of State Parks Plans**

Two documents are relevant to ongoing development of Kekaha Kai State Park: the *Final Park Development Report and Environmental Impact Statement*, which was prepared by DLNR Division of State Parks in 2003; and the *State Comprehensive Outdoor Recreation Plan (SCORP) 2008 Update*, prepared by DLNR Division of State Parks in 2009.

The Final Park Development Report, whose philosophy, goals and plans have already been explained in Section 1.1, has served as the blueprint for all development at Kekaha Kai State Park. The Phase II Improvements are consistent with this plan in that they fulfill recreational needs of diverse groups in a safe manner while preserving the low-key atmosphere and respecting the cultural and natural resources.

The SCORP 2008 Update was prepared by the Department of Land and Natural Resources and finalized in 2009. It is intended to represent a balanced program of acquiring, developing, conserving, using and managing Hawai‘i’s recreation resources that permits continued receipt of federal grants for outdoor recreational projects under the Land and Water Conservation Fund Act, Public Law 88-758, as amended. The SCORP describes existing recreational resources, programs and opportunities; discusses trends, needs and demands; identifies key issues in outdoor recreation; and establishes recreation priorities. A full discussion of the SCORP is beyond the scope of this document, but it is relevant to note the following:

A Statewide public recreation user survey conducted for the 2008 SCORP update found that the most popular recreational activity was visiting a beach, which 90% of residents said they did at least once a year, closely followed by ocean swimming (86%). Of the top ten 14 recreational activities, three others also involved beach parks (snorkeling, bodysurfing and surfing/bodyboarding).

Beaches are also highly important in terms of visitor satisfaction and spending. The 2006 Visitor Satisfaction and Activity Report by the Hawai‘i Tourism Authority utilized surveys to measure satisfaction levels for different components of the visitor experience (accommodations, attractions/ dining, shopping, etc.), and also to provide data on what activities visitors engaged in during their vacation. According to the 2006 survey, the most popular outdoor recreational activity among visitors was swimming/sunbathing/ beach activities (Hawai‘i DBEDT 2006). When asked to rate satisfaction with parks and beaches during their vacations, visitors were overwhelmingly pleased, with over 90 percent responding positively.

As noted in the SCORP:

“Because visitors are drawn to our State’s natural scenery and outdoor recreational opportunities, an increasing visitor population affects the demand on the outdoor recreation resources.... Where tourism and outdoor recreation overlap, the tourism providers and outdoor recreation providers must work with the same resources and attractions and serve the same people. Recreation-based tourism industry businesses depend upon desirable public lands’ aesthetics and amenities.”

The proposed Phase II improvements to Kekaha Kai State Park are completely consistent with the trends and needs identified in the SCORP.

### **3.6.4 Hawai‘i County Land Use Designations and Plans**

#### *Hawai‘i County Zoning*

The entire park is zoned Open. According to the Zoning Code Section 25-5-162(11), public parks are a permitted use in the Open district. Plan Approval by the Planning Department may be required.

#### *Hawai‘i County Special Management Area*

The property is situated within the County’s Special Management Area (SMA).

In a letter of October 8, 2013, in response to an EA early consultation letter, the Hawai‘i County Planning Department stated:

“...7. Please include discussion on how the existing uses and structures of these approved permits would be impacted by the additional development:

- a. SMA 325 on TMK: 7-3-43:1 which allowed for the expansion of [sic] Keauhou Airport Facilities.
  - b. SMA 438 on TMK: 7-2-4:3, 17 & 19 which allowed for access and park related improvements for Kekaha Kai State Park.
  - c. Variance No. 531 on TMK: 7-2-4:Por. of 1 which allowed for access to a proposed lot to be provided by a rough-graded jeep trail in lieu of a 16-foot wide pavement width.
8. Since Phase II includes additional improvements to the existing park; an amendment to Special Management Area Use Permit No. 438 would be required. However, as Phase II will also include development on four other noncontiguous parcels, additional information on the project will determine whether an amendment to SMA No. 438 or another Special Management Area Use Permit would be required.....”

No aspect of the proposed project would impact any facilities covered by other SMA permits. It should be noted that the Kona International Airport property SMA was referenced – 7-3-043:001 – is 1,173 acres. The Kekaha Kai Access Road crosses a corner of the extreme north of this property, as shown in Figure 1a. None of the activities proposed in the airport SMA have any bearing or effect on any of the proposed actions. The proposed project continues to fulfill the goals outlined in the Final Development Plan and EIS for the park, and the project is complementary to, rather than in conflict with, the other SMAs. It is recognized that an SMA Use Permit will be required for the project. DLNR Division of State Parks would prefer to obtain a separate SMA Use Permit rather than amend SMA Use Permit No. 438 for the proposed Phase II Improvements, but will work with the County of Hawai‘i to determine the best course. DLNR Division of State Parks will submit an application for this permit after the EA process is complete.

In any case, the proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawai‘i Revised Statutes (HRS), entitled *Coastal Zone Management*. The proposed use would be consistent with Chapter 205A because it would not affect historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, or public access to recreational areas, as summarized below.

**Recreational Resources:** Kekaha Kai State Park is an important recreational resource that will be enhanced by the proposed Phase II Improvements. These improvements would not in any manner affect the recreational resources of the park.

**Historic Resources:** The historic resources in the park have been inventoried and area managed by professional archaeologists of DLNR Division of State Parks, who have worked with the State Historic Preservation Division to ensure that there will be no effects to significant historic properties, as discussed in Section 3.2.2.

**Scenic and Open Space Resources:** The guidelines contained in Rule 9 of the Hawai‘i County Planning Commission Rules (which governs the SMA) express the intent to minimize development that would “substantially interfere with or detract from the line of site toward the sea from the State Highway nearest the coast or from other scenic areas identified in the General Plan.” The proposed Phase II improvements would not adversely affect any sight lines or scenic resources in any way.

**Coastal Ecosystems:** The nature, location and design of the proposed Phase II improvements, along with precautions that will be undertaken during construction, would minimize impacts to coastal resources. No threatened or endangered animal or plant species would be affected.

**Economic Uses:** The proposed improvements would have beneficial impacts on the socioeconomic environment of West Hawai‘i.

**Coastal Hazards:** The proposed improvements occur within designated coastal floodplains, but are consistent with approved open-space uses and will not adversely affect the floodplain.

#### *Shoreline Setback Area*

The most recently certified shorelines (and associated shoreline setback areas) are shown in the detailed site plans in Figure 5. The shoreline at Mahai‘ula was certified on March 25, 2014, and the shoreline at Manini‘ōwali was certified on October 21, 2013. A certified shoreline is only valid for one year for the purposes of submitting the SMA Assessment and Shoreline Setback Variance applications. If necessary, the shoreline will be resurveyed and recertified.

Certain elements of the proposed Phase II Improvements are located within the shoreline setback. These include the stairway and a portion of a new accessible picnic table at Manini‘ōwali and refurbishment of two existing BBQs at Mahai‘ula. As part of its planning efforts, DLNR Division of State Parks will apply to the Planning Department to determine if a Shoreline Setback Variance is required for these improvements.

Rule 11 (Shoreline Setback) of the Hawai‘i County Planning Department Rules of Practice and Procedure governs uses within the Shoreline Setback Area. Pursuant to Rule 11-6(b), all structures and activities that do not qualify under section 11-7(a) through (c) are prohibited in the shoreline setback area, unless the applicant obtains a Shoreline Setback Variance or the Planning Director determines that it is a “minor activity” “that does not adversely affect the shoreline” in the context of the rules and is thus exempt. Initial discussions with the Planning Department indicate that among the improvements listed above, the stairway at Manini‘ōwali may not be considered a minor activity and may thus be subject to an application for a Shoreline Setback Variance.

Shoreline Setback Variances are governed by Rule 8 of the Hawai‘i County Planning Commission Rules Of Practice And Procedure, which provides for the variance process in section 8-8 and defines the criteria for approving a variance in Section 8-10. Section 8-10 (b) (3) states:

*(b) A variance may also be granted upon a finding that, based upon the record, the proposed structure or activity meets one of the following standards of this subsection: ...*

*(3) Hardship Standard.*

(A) A structure or activity may be granted a variance upon the grounds of hardship only if:

- (i) The applicant would be deprived of reasonable use of the land if required to comply fully with this rule; and*
- (ii) The request is due to unique circumstances and does not draw into question the reasonableness of this rule; and*
- (iii) The request is the practicable alternative which best conforms to the purpose of this rule.*

DLNR Division of State Parks believes that the request for variance meets these criteria in the application for a Shoreline Setback Variance:

- (i) Should DLNR Division of State Parks be denied this variance, one of the most well-used entry points to the shoreline area would remain in a condition that has prompted numerous safety concerns. This entrance area is necessary because it is situated in a location that avoids damage to historic properties and natural vegetation, and denying the improvement would deprive DLNR Division of State Parks and parkgoers of a reasonable use of this area of the park. The applicant’s request to have a safer ocean entry is reasonable.
- (ii) This request for a variance is due to unique circumstances created when the property was developed as a park and existing shoreline entrances that had already disturbed the coastal area were adapted for public use.
- (iii) The request for permission to build the stairway is the practicable alternative that best conforms to the purpose of Rule 8, Section 8-2. The stairway protects adjacent areas from trampling and channels use into the environmentally best location. It replaces an existing structure. The proposed action would not cause the loss of sand, coral or rocks from the shoreline. The proposed improvement would not endanger any other structures or uses.

Section 8-10 (b) (3) continues:

*(B) Before granting a hardship variance, the Commission must determine that the request is a reasonable use of the land. The determination of the reasonableness of the use of land shall consider factors such as shoreline conditions, erosion, surf and flood condition, and the geography of the lot as it relates to health and safety.*

The proposed use is reasonable because it channels pedestrian access into the shoreline area in the location that provides for safety and protection of natural and cultural resources. It will not cause erosion of the shoreline and there would be no jeopardy to health or safety by the proposed construction of this improvement.

*(C) If a structure is proposed to artificially fix the shoreline, the Commission must also determine that shoreline erosion is likely to cause hardship if the structure is not allowed within the shoreline area.*

Any structure that would safely conducted pedestrians to the shoreline will involve a minor fixing of the shoreline. In this case, the effect on shoreline process from a stairway would be negligible.

*(D) Hardship shall not be determined as a result of a rezoning amendments, planned unit development (PUD) permits, cluster plan development (CDP) permits, or subdivision approvals after June 16, 1989.*

The hardship is not so determined.

Section 8-10 continues:

*(c) No variance shall be granted unless appropriate conditions are imposed as applicable:*

*To comply with Chapters 10 and 27 of the Hawai'i County Code relating to Erosion and Sedimentation Control and Flood Control respectively;*

*To maintain safe lateral access along the shoreline or adequately substitute for its loss;*

*To minimize risk of adverse impacts on beach processes;*

*To minimize risk of structures failing and becoming loose rocks or rubble on public property; and*

*To minimize adverse impacts on public views to, from and along the shoreline.*

The applicant's response to these criteria is that:

- (1.) The project will comply with all provisions of Chapters 10 and 27.
- (2.) The proposed stairway would not impact the lateral access(es), which are located both *makai* and *mauka* of the site, which currently is occupied by an old concrete ramp.
- (3.) The proposed structure is small, located more than 14 feet above sea level, and action would not negatively impact beach processes.
- (4.) DLNR Division of State Parks will maintain the structure, which replaces an old structure that is unsafe and has begun to degrade. The stairway would not become rubble on public property.
- (5.) The stairway is *makai* of a slope and would not affect viewplanes to, from, or along the shoreline.

## *General Plan*

The *General Plan* for the County of Hawai‘i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai‘i. The plan was adopted by ordinance in 1989 and revised in 2005 (Hawai‘i County Planning Department). The *General Plan* itself is organized into thirteen elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai‘i. Most relevant to the proposed project are the following Goal and Policies, and Courses of Action:

### RECREATION GOALS

- Provide a wide variety of recreational opportunities for the residents and visitors of the County.
- Maintain the natural beauty of recreation areas.
- Provide a diversity of environments for active and passive pursuits.

### RECREATION POLICIES

- Recreational facilities shall reflect the natural, historic, and cultural character of the area.
- The use of land adjoining recreation areas shall be compatible with community values, physical resources, and recreation potential.
- Facilities for compatible multiple uses shall be provided.
- Provide facilities and a broad recreational program for all age groups, with special considerations for the handicapped, the elderly, and young children.
- Adopt an on-going program of identification, designation, and acquisition of areas with existing or potential recreational resources, such as land with sandy beaches

### RECREATION COURSES OF ACTION

- Expand the depth of coastal recreation areas. Park areas should be connected with trails to increase public access.

Discussion: The proposed project satisfies relevant goals, policies, and courses of action related to recreational facilities in Hawai‘i County and West Hawai‘i. The park and its improvements are linked through a developing coastal trail with other parks along the coast. The project will provide accessible facilities and promote health, safety and enjoyment of the park.

Other pertinent sections are listed below, followed by a discussion of conformance.

## ECONOMIC GOALS

- (a) Provide residents with opportunities to improve their quality of life through economic development that enhances the County's natural and social environments.
- (b) Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaii.
- (d) Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County's cultural, natural and social environment.

*Discussion:* The proposed Phase II improvements would improve the recreational value of the park and are compatible with the County's cultural, natural and social environment. Construction would create temporary construction jobs for local residents, and would indirectly boost the economy through construction industry purchases from local suppliers. A multiplier effect takes place when these employees spend their income for food, housing, and other living expenses in the retail sector of the economy. Such activities are in keeping with the overall economic development of the island.

## ENVIRONMENTAL QUALITY GOALS

- (a) Define the most desirable use of land within the County that achieves an ecological balance providing residents and visitors the quality of life and an environment in which the natural resources of the island are viable and sustainable.
- (b) Maintain and, if feasible, improve the existing environmental quality of the island.
- (c) Control pollution.

## ENVIRONMENTAL QUALITY POLICIES

- (a) Take positive action to further maintain the quality of the environment.

## ENVIRONMENTAL QUALITY STANDARDS

- (a) Pollution shall be prevented, abated, and controlled at levels that will protect and preserve the public health and well being, through the enforcement of appropriate Federal, State and County standards.
- (b) Incorporate environmental quality controls either as standards in appropriate ordinances or as conditions of approval.
- (c) Federal and State environmental regulations shall be adhered to.

*Discussion:* The proposed project would not have a substantial adverse effect on the environment nor diminish the valuable natural resources of the region.

## HISTORIC SITES GOALS

- (a) Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawaii.
- (b) Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.

## HISTORIC SITES POLICIES

- (a) Agencies and organizations, either public or private, pursuing knowledge about historic sites should keep the public apprised of projects.
- (b) Amend appropriate ordinances to incorporate the stewardship and protection of historic sites, buildings and objects.
- (c) Require both public and private developers of land to provide historical and archaeological surveys and cultural assessments, where appropriate, prior to the clearing or development of land when there are indications that the land under consideration has historical significance.
- (d) Public access to significant historic sites and objects shall be acquired, where appropriate.

*Discussion:* DLNR Division of State Parks archaeologists have determined that the project will have no effect on significant historic properties, a finding with which SHPD has concurred.

## FLOOD CONTROL AND DRAINAGE GOALS

- (a) Protect human life.
- (b) Prevent damage to man-made improvements.
- (c) Control pollution.
- (d) Prevent damage from inundation.
- (e) Reduce surface water and sediment runoff.
- (f) Maximize soil and water conservation.

## FLOOD CONTROL AND DRAINAGE POLICIES

- (a) Enact restrictive land use and building structure regulations in areas vulnerable to severe damage due to the impact of wave action. Only uses that cannot be located elsewhere due to public necessity and character, such as maritime activities and the necessary public facilities and utilities, shall be allowed in these areas.
- (g) Development-generated runoff shall be disposed of in a manner acceptable to the Department of Public Works and in compliance with all State and Federal laws.

## FLOOD CONTROL AND DRAINAGE STANDARDS

- (a) “Storm Drainage Standards,” County of Hawaii, October, 1970, and as revised.
- (b) Applicable standards and regulations of Chapter 27, “Flood Control,” of the Hawaii County Code.
- (c) Applicable standards and regulations of the Federal Emergency Management Agency (FEMA).
- (d) Applicable standards and regulations of Chapter 10, “Erosion and Sedimentation Control,” of the Hawaii County Code.
- (e) Applicable standards and regulations of the Natural Resources Conservation Service and the Soil and Water Conservation Districts.

*Discussion:* Some of the proposed Phase II Improvements would occur within the AE and VE flood zones. The improvements are subject to review by DLNR-Engineering and the Hawai‘i County Department of Public Works to ensure that all relevant standards of Chapter 27 and Chapter 10 are addressed.

## NATURAL BEAUTY GOALS

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

## NATURAL BEAUTY POLICIES

- (a) Increase public pedestrian access opportunities to scenic places and vistas.
- (b) Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.

*Discussion:* The proposed Phase II improvements are minor and would not have adverse scenic impacts.

## NATURAL RESOURCES AND SHORELINES GOALS

- (a) Protect and conserve the natural resources from undue exploitation, encroachment and damage.
- (b) Provide opportunities for recreational, economic, and educational needs without despoiling or endangering natural resources.
- (c) Protect and promote the prudent use of Hawaii's unique, fragile, and significant environmental and natural resources.
- (d) Protect rare or endangered species and habitats native to Hawaii.

- (e) Protect and effectively manage Hawaii's open space, watersheds, shoreline, and natural areas.
- (f) Ensure that alterations to existing land forms, vegetation, and construction of structures cause minimum adverse effect to water resources, and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of an earthquake.

#### NATURAL RESOURCES AND SHORELINES POLICIES

- (a) Require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment.
- (c) Maintain the shoreline for recreational, cultural, educational, and/or scientific uses in a manner that is protective of resources and is of the maximum benefit to the general public.
- (d) Protect the shoreline from the encroachment of man-made improvements and structures.
- (h) Encourage public and private agencies to manage the natural resources in a manner that avoids or minimizes adverse effects on the environment and depletion of energy and natural resources to the fullest extent.
- (p) Encourage the use of native plants for screening and landscaping.
- (r) Ensure public access is provided to the shoreline, public trails and hunting areas, including free public parking where appropriate.
- (u) Ensure that activities authorized or funded by the County do not damage important natural resources.

*Discussion:* The proposed project utilizes the shoreline and areas *mauka* for facilities that are necessary for recreation and enhance recreational uses. No beneficial uses will be affected.

#### LAND USE GOALS

- (a) Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County.

#### LAND USE POLICIES

- (c) Allocate appropriate requested zoning in accordance with the existing or projected needs of neighborhood, community, region and County.

#### LAND USE, OPEN SPACE GOALS

- (a) Provide and protect open space for the social, environmental, and economic well-being of the County of Hawai'i and its residents.
- (b) Protect designated natural areas.

## LAND USE, OPEN SPACE POLICIES

(a) Open space [in the County of Hawai‘i] shall reflect and be in keeping with the goals, policies, and standards set forth in the other elements of the General Plan.

*Discussion:* The proposed Phase II improvements would not detract from the open space in the area. Lateral coastal access would be preserved.

### *Hawai‘i County General Plan Land Use Pattern Allocation Guide (LUPAG)*

The LUPAG map component of the *General Plan* is a graphic representation of the Plan’s goals, policies, and standards as well as of the physical relationship between land uses. It also establishes the basic urban and non-urban form for areas within the planned public and cultural facilities, public utilities and safety features, and transportation corridors. The coastal sections of the park are classified as Open in the LUPAG, and the interiors are classified as Conservation. The proposed project is consistent with this designation.

### *Kona Community Development Plan*

The Kona Community Development Plan (CDP) encompasses the judicial district of North and South Kona, and was developed under the framework of the February 2005 County of Hawai‘i General Plan. Community Development Plans are intended to translate broad General Plan Goals, Policies, and Standards into implementation actions as they apply to specific geographical regions around the County. CDPs are also intended to serve as a forum for community input into land-use, delivery of government services and any other matters relating to the planning area. The version referenced in this Environmental Assessment is at:

[http://www.hcrc.info/community-planning/community-development-plans/kona/cdp-final-drafts/Final%20KCDP\\_Sept%202008\\_text.pdf](http://www.hcrc.info/community-planning/community-development-plans/kona/cdp-final-drafts/Final%20KCDP_Sept%202008_text.pdf).

The Plan has many elements and wide-ranging implications, but there are several major strategies that embody the guiding principles related to the economy, environmental quality, energy, flooding and other natural hazards, historic sites, natural beauty, natural resources and shoreline, housing, public facilities, public utilities, recreation, transportation and land use.

The Kona CDP’s “Official Land Use Map” identifies the Kekaha Kai State Park as outside the Kona Urban Area and Rural Transit Oriented Development areas.

The proposed recreational improvements are being developed in accordance with the existing zoning. However, an SMA permit is required for this project. In reviewing SMA permits, three Kona CDP Land Use Policies are potentially applicable. These are:

LU-1.5: Enhanced Shoreline Setback. This policy states in part that:

It shall be a priority to maintain a minimum of 1,000-foot open space no-build setback for undeveloped lands adjacent to the shoreline on parcels that exceed 1,000 feet in depth in discretionary land use approvals such as SMA major permits, rezonings, and state land use boundary amendments.

LU-1.6 17-Mile Protected Coastline. This policy applies to the 17 mile stretch of shoreline that extends from Makaao north to Kikaua Point at the Kuki‘o development.

*Discussion:* The project site is within 1,000 feet of the shoreline, and within the 17-mile stretch of identified coastline, but it does not involve development, but rather improvement of recreational facilities, and is thus consistent with these policies.

LU-1.5a This Policy requires that SMA applications be reviewed pursuant to Land Use Policy 1.4 relating to Consistency with Land Use Pattern Allocation Guide (LUPAG). This policy states:

The current LUPAG accommodates the vision and needs for the Kona CDP area planning horizon and should be amended only for compelling reasons. Any rezoning application shall be consistent with the LUPAG.

*Discussion:* Use of LUPAG Open and Conservation areas for recreational facilities is consistent with this policy and requires no amendment of the LUPAG map.

#### **PART 4: DETERMINATION**

Based on the findings listed below, DLNR Division of State Parks expects that the project will not have significant environmental impacts and anticipates making a Finding of No Significant Impact (FONSI). The agency will consider comments on the Draft EA when making its final determination.

#### **PART 5: FINDINGS AND REASONS**

Chapter 11-200-12, Hawai‘i Administrative Rules, outlines those factors agencies must consider when determining whether an action has significant effects:

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resources would be committed or lost. Improvement of the park will itself enhance a cultural resource. DLNR Division of State Parks archaeologists have determined

- that the project will have no effect on significant historic properties, a finding with which SHPD has concurred.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* The proposed project expands and in no way curtails beneficial uses of the environment.
  3. *The proposed project will not conflict with the State's long-term environmental policies.* The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor, environmentally beneficial, and fulfills aspects of these policies calling for an improved social environment. It is thus consistent with all elements of the State's long-term environmental policies.
  4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The project will benefit the social welfare of the community by enhancing important recreational resources.
  5. *The proposed project does not substantially affect public health in any detrimental way.* The proposed project will benefit public health by increasing access to healthful recreational activities and improving sanitation.
  6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* No secondary effects are expected to result from the proposed action, which would simply improve recreational facilities in an existing park and would not induce in-migration or affect public facilities.
  7. *The proposed project will not involve a substantial degradation of environmental quality.* The project is minor and environmentally benign, and would thus not contribute to environmental degradation.
  8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The project site supports mainly non-native vegetation. Some endangered waterbirds and other rare fauna are present in the park, but the improvements will not produce impacts to rare, threatened or endangered species of flora or fauna, given standard mitigation.
  9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The project is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.
  10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* No adverse effects on these resources would occur. Mitigation of construction-phase impacts will preserve water quality. Ambient noise impacts due to construction will be temporary and restricted to reasonable daytime hours.
  11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* Although the project is located in an area with tsunami, volcanic and seismic risk, the entire coastal area of the Island of Hawai'i shares this risk, and the project is not imprudent to construct, and employs design and construction standards appropriate to the flood and seismic zones.

12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* No scenic vistas and viewplanes identified in the Hawai‘i County General Plan will be adversely affected by the project.
13. *The project will not require substantial energy consumption.* Construction and maintenance of the improvements would require minimal consumption of energy. No adverse effects would be expected.

For the reasons above, the proposed action will not have any significant effect in the context of Chapter 343, Hawai‘i Revised Statutes and section 11-200-12 of the State Administrative Rules.

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**ENVIRONMENTAL ASSESSMENT  
KEKAHA KAI STATE PARK PHASE II IMPROVEMENTS**

State of Hawai‘i  
Department of Land and Natural Resources  
Division of State Parks

**APPENDIX 1a  
Comments in Response to Early Consultation**

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NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

WILLIAM J. AILA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ESTHER KIA'AINA  
FIRST DEPUTY

WILLIAM M. TAM  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

REF: OCCL: AJR

COR: HA-14-38

Ron Terry  
c/o Geometrician Associates, LLC  
P.O. Box 396  
Hilo, HI 96721

SEP 23 2013

**SUBJECT: EARLY CONSULTATION ON THE DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE PROPOSED KEKAHA KAI STATE PARK PHASE II IMPROVEMENT PROJECT**  
North Kona District, Island of Hawaii  
TMKs: (3)7-2-005:002, 003 & 007; (3)7-3-043:001; (3)7-2-004:003, 017 & 019

The Office of Conservation and Coastal Lands (OCCL) is in receipt of your letter regarding the preparation of a Draft Environmental Assessment (DEA) to be submitted on behalf of the Department of Land and Natural Resources (DLNR) Division of State Parks (SP) for the proposed Kekaha Kai State Park (KKSP) Phase II Improvement Project. The subject parcels are located within the State Land Use (SLU) Conservation District General, Resource and Protective Subzones.

According to the information provided the applicant (SP) is proposing to conduct the Phase II portion of the Kekaha Kai State Park Improvement project. On January 23, 2004 the Board of Land and Natural Resources (BLNR) approved of the Phase I portion of the KKSP Improvement Project under Conservation District Use Permit (CDUP) HA-3168. The area included in the approved CDUP encompassed TMK(s): (3) 7-2-004:003, 017 & 019 which proposed the construction of a number of park structures such as access roadways, comfort stations and camping sites. As part of the permitting requirements, an Environmental Impact Statement (EIS) was completed which covered the entire project area and surrounding parcels; it should be noted that not all of the subject parcels were included in the original CDUP HA-3168 (**Exhibit 1**). The Final Environmental Impact Statement (FEIS) was published with a Finding of No Significant Impact (FONSI) in the Office of Environmental Quality Control (OEQC) publication the *Environmental Notice* (EN) on June 8, 2003.

Based on our records it appears that Phase I included TMK(s): (3) 7-2-004:003, 017 & 019 under CDUP HA-3168 while the proposed Phase II portion of the proposed project will be located on TMK(s): (3) 7-2-005:002, 003 & 007 and (3) 7-3-043:001. As the Phase II portion was not included in the original CDUP this office is requesting that the applicant submit for processing a Conservation District Use Application (CDUA) to apply for the proposed land uses.

1. The construction of camping facilities, access road repairs and maintenance, new water systems and other related park improvements are considered identified land uses within the Conservation District Resource and General Subzones pursuant to Hawaii Administrative Rules (HAR) §13-5-22, P-6 PUBLIC PURPOSE USES, (D-1) *Not for*

*profit land uses undertaken in support of a public service by an agency of the county, state, or federal government, or by an independent non-governmental entity, except that an independent non-governmental regulated public utility may be considered to be engaged in a public purpose use. Examples of public purpose uses may include but are not limited to public roads, marinas, harbors, airports, trails, water systems and other utilities, energy generation from renewable resources, communication systems, flood or erosion control projects, recreational facilities, community centers, and other public purpose uses, intended to benefit the public in accordance with public policy and the purpose of the Conservation District;*

2. Pursuant to HAR §13-5-40, Hearings, A public hearing will not be required; and
3. In conformance with Hawaii Revised Statutes (HRS) Chapter 343, as amended, and HRS Chapter 11-200 the applicant is preparing an Environmental Assessment (EA) to be submitted for this project;
4. As the site of the proposed land uses appear to be located within the County of Hawaii Special Management Area (SMA) the applicant will need to obtain a determination of SMA permitting requirements from the County of Hawaii Department of Planning as part of the CDUA review process.

Should you have any questions concerning this correspondence, please feel free to contact Alex J. Roy, M.Sc. of our Office of Conservation and Coastal Lands staff at 808-587-0316 or via email at [alex.j.roy@hawaii.gov](mailto:alex.j.roy@hawaii.gov)

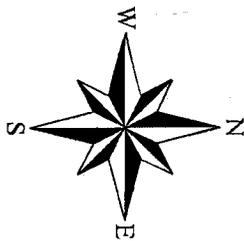
Sincerely,



Samuel J. Lemmo, Administrator  
*Office of Conservation and Coastal Lands*

CC: *HDLO*  
*State Parks*  
*Hawaii County Department of Planning*

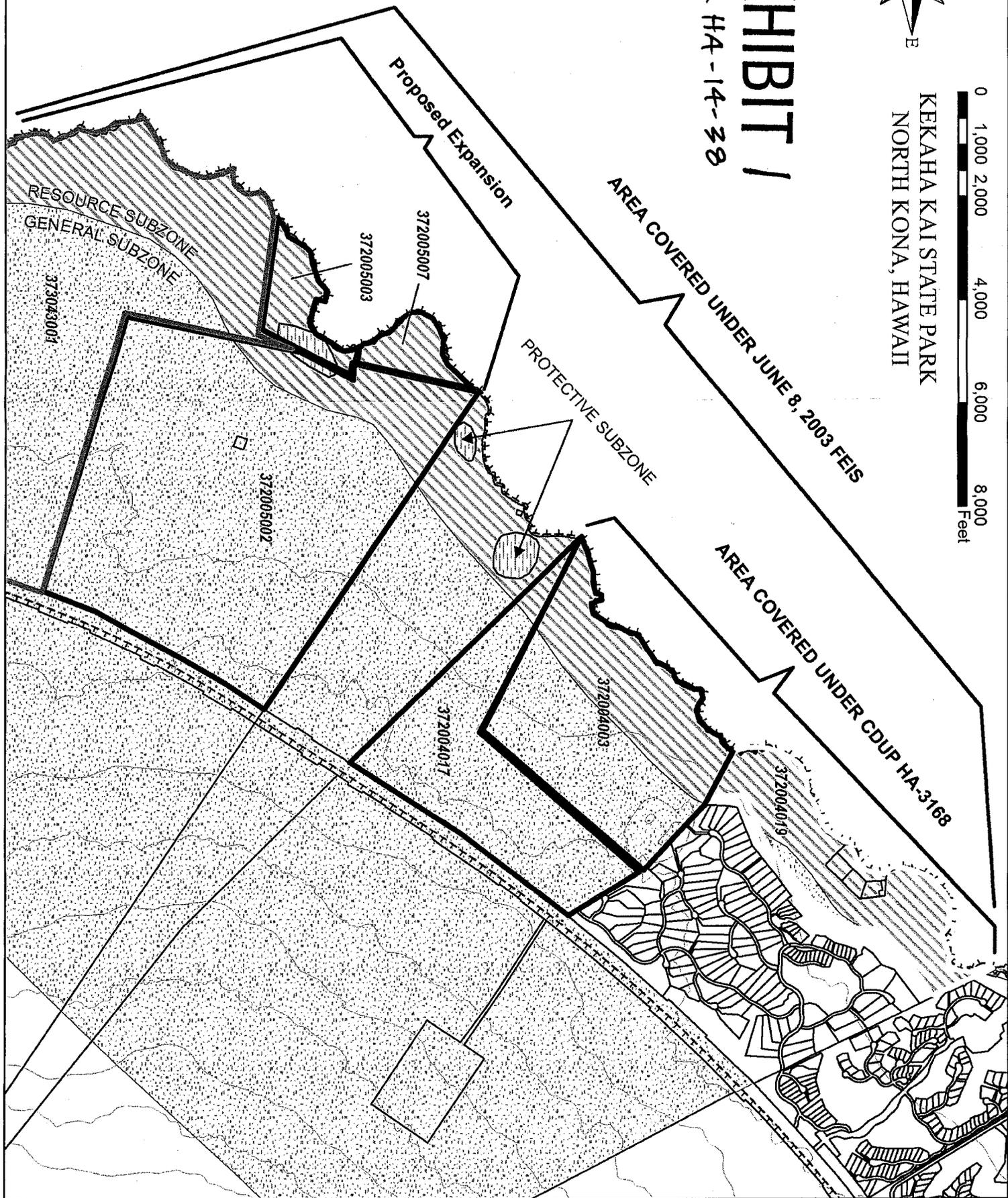
Attachment: *Exhibit 1 – Map of Project Area*



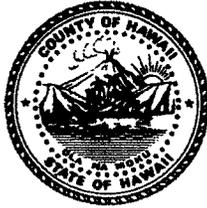
KEKAHA KAI STATE PARK  
NORTH KONA, HAWAII

# EXHIBIT I

COR HA-14-38



**William P. Kenoi**  
*Mayor*



**BJ Leithead Todd**  
*Director*

**John A. Dedeiros**  
*Deputy Director*

**County of Hawai'i**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
25 Aupuni Street • Hilo, Hawai'i 96720  
(808) 961-8083 • Fax (808) 961-8086  
<http://www.hawaiicounty.gov/environmental-management/>

September 19, 2013

Mr. Ron Terry  
Geometrician Associates  
P. O. Box 396  
Hilo, HI 96721

RE: Early Consultation for Environmental Assessment for Kekaha Kai State Park Phase II  
Improvements, North Kona  
TMKs: 7-2-05:02,03 & 07; 7-3-43: por. 01; 7-2-04: 03, 17 & 19

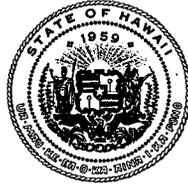
We have no comments to offer on the subject project.

Thank you for allowing us to review and comment.

Sincerely,

  
BJ Leithead Todd  
DIRECTOR

NEIL ABERCROMBIE  
GOVERNOR



**STATE OF HAWAII**  
**DEPARTMENT OF TRANSPORTATION**  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

GLENN M. OKIMOTO  
DIRECTOR

Deputy Directors  
JADE T. BUTAY  
FORD N. FUCHIGAMI  
RANDY GRUNE  
JADINE URASAKI

IN REPLY REFER TO:  
HWY-PS 2.5788

October 3, 2013

Mr. Ron Terry  
Geometrician Associates, LLC  
P. O. Box 396  
Hilo, Hawaii 96721

Dear Mr. Terry:

Subject: Early Consultation – Environmental Assessment  
Kekaha Kai State Park Phase II Improvements  
Hawaii, North Kona, TMK: (3) 7-2-005: 02, 03, 07; 7-3-043: por. 01; 7-2-04: 03,  
17, 19

Thank you for consulting with us regarding the draft environmental assessment that is being prepared for the Kekaha Kai State Park Phase II Improvements. It is our understanding these improvements will be in the Maniniowali (Kua Bay) and Mahaiula portions of the park. The scope of improvements include picnic tables, BBQ pits, outdoor shower, and related park facility improvements. The assessment will include an analysis of traffic impacts.

We request that the environmental assessment include a traffic assessment for our review. We recommend that at least three review copies of the draft environmental assessment (and traffic assessment) be provided to the Department of Transportation, Statewide Transportation Planning Office which will coordinate the review.

If you have any questions, contact Gary Ashikawa, Systems Program Manager, Highways Division, Planning Branch at (808) 587-6336. Please reference file number 2013-196.

Very truly yours,

A handwritten signature in black ink, appearing to read "Glenn M. Okimoto".

GLENN M. OKIMOTO, Ph.D.  
Director of Transportation

**From:** Oliveira, Darryl [mailto:doliveira@co.hawaii.hi.us]  
**Sent:** Friday, September 13, 2013 4:17 PM  
**To:** rterry@hawaii.rr.com  
**Subject:** Kekaha Kai Park Improvements

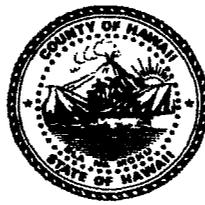
Good afternoon Ron,

Having received your letter regarding Early Consultation on Phase II improvements for Kekaha Kai Park, I wanted to inquire into the consideration of the installation of a Tsunami Warning Siren. Given the current usage and patronage of the park and with the planned improvements, the anticipated increase in usage, I would like to request consideration with installation of a warning siren if that has not been planned for. The nearest siren is located at NELHA over four (4) miles away. The effective range of a siren under ideal conditions is approximately 1/4<sup>th</sup> mile. Therefore, I feel it would be prudent to consider a siren at the park to provide beachgoers with notification in the event of a tsunami or other shoreline emergency. Please let me know if you have any questions and I apologize if this matter is already being addressed.

Thanks,

Darryl Oliveira, Administrator  
Hawaii County Civil Defense

William P. Kenoi  
Mayor



Duane Kanuha  
Director

Bobby Command  
Deputy Director

West Hawai'i Office  
74-5044 Ane Keohokalole Hwy  
Kailua-Kona, Hawai'i 96740  
Phone (808) 323-4770  
Fax (808) 327-3563

**County of Hawai'i**  
**PLANNING DEPARTMENT**

East Hawai'i Office  
101 Pauahi Street, Suite 3  
Hilo, Hawai'i 96720  
Phone (808) 961-8288  
Fax (808) 961-8742

October 8, 2013

Mr. Ron Terry  
Geometrician Associates LLC  
P.O. Box 396  
Hilo, HI 96721

Dear Mr. Terry:

**SUBJECT: Pre-Consultation on Environmental Assessment**  
**Land Owner: State of Hawai'i**  
**Applicant: Department of Land and Natural Resources, Division of State Parks**  
**Project: Kekaha Kai State Park Phase II Improvements**  
**TMK: 7-2-5:2, 3 & 7; 7-3-43: Por. 1; 7-2-4:3, 17 & 19, North Kona, Hawai'i**

This is in regards to your letter dated September 19, 2013 requesting our comments for an Environmental Assessment on the above referenced project.

SMA 03-013 for the development of the Kekaha Kai State Park Phase I improvements on TMK: 7-2-4:Por. of 3, 17 and 19 was approved by the Planning Commission at a November 7, 2003 public hearing.

The Department of Land and Natural Resources, Division of State Parks plans to implement Phase II of improvements to Kekaha Kai State Park. New proposed improvements would occur at the Manini'owali (Kua Bay) and Mahai'ula sections of the park. In summary, the improvements would consist of:

- Additional picnic tables and BBQ pits.
- Improvements to Mahaiula Access Road.
- New storage and water tank building at Mahaiula, adjacent to the restrooms.
- New outdoor shower, stairs and two picnic tables in conformance with the ADA at Maniniowali.
- Construction of related improvements to park facilities.

We have the following to offer for these parcels:

1. They all are in the Special Management Area and have frontage along the coastline.
2. Other land use designations are as follows:

<b>TMK</b>	<b>Acreage</b>	<b>State Land Use</b>	<b>LUPAG</b>	<b>County Zoning</b>
7-2-5:2	821.503	Conservation	Open/Conservation	Open
7-2-5:3	40	Conservation	Open/Conservation	Open
7-2-5:7	38.3	Conservation	Open/Conservation	Open
7-3-43:1	1,174.6	Conservation/ Urban	Open/Conservation/ Industrial	Open/General Industrial (MG-1a)
7-2-4:3	333.815	Conservation	Conservation	Open
7-2-4:17	353.423	Conservation	Open/Conservation	Open
7-2-4:19	153.05	Conservation	Open/Conservation	Open

3. The General Plan Land Use Pattern Allocation Guide (LUPAG) Map’s designation of Open allows for “Parks and other recreational areas, historic sites, and open shoreline areas”. For the Conservation areas, “Forest and water reserves, natural and scientific preserves, areas in active management for conservation purposes, areas to be kept in a largely natural state, with minimal facilities consistent with open space uses, such as picnic pavilions and comfort stations, and lands within the State Land Use Conservation District” are listed land uses. However, please include a discussion on how the proposed improvements will still be consistent with the policies, standards, and courses of action of the General Plan.
4. The Kona Community Development Plan was adopted by the County as Ordinance No. 08 131, effective September 25, 2008. A discussion on the proposed Phase II improvements as it relates to this plan should be included in the Environmental Assessment.
5. For parcel areas that are designated Conservation by the State Land Use Commission, there is no County zoning per se. Therefore, the Department of Land and Natural Resources (DLNR) has jurisdiction on any uses for these Conservation areas.
6. According to the Zoning Code Section 25-5-162(11), public parks are a permitted use in the Open district.

Mr. Ron Terry  
Geometrician Associates LLC  
October 8, 2013  
Page 3

7. Please include discussion on how the existing uses and structures of these approved permits would be impacted by the additional development:
  - a. SMA 325 on TMK: 7-3-43:1 which allowed for the expansion of Keauhou Airport Facilities.
  - b. SMA 438 on TMK: 7-2-4:3, 17 & 19 which allowed for access and park related improvements for Kekaha Kai State Park.
  - c. Variance No. 531 on TMK: 7-2-4:Por. of 1 which allowed for access to a proposed lot to be provided by a rough-graded jeep trail in lieu of a 16-foot wide pavement width.
8. Since Phase II includes additional improvements to the existing park; an amendment to Special Management Area Use Permit No. 438 would be required. However, as Phase II will also include development on four other noncontiguous parcels, additional information on the project will determine whether an amendment to SMA No. 438 or another Special Management Area Use Permit would be required.
9. A Shoreline Setback Variance Application may be required for any proposed improvements, uses or structures within the 40-foot shoreline setback area. This application must include a current certified shoreline survey.
10. Plan Approval is required for new structures and additions to existing structures in areas zoned General Industrial (MG-1) and Open.
11. Please consult with the National Park Service regarding the Ala Loa Trail and any other historic trails within the Ala Kahakai National Historic Trail corridor.
12. Please include discussion on how this proposed Phase II development will affect the approved Shoreline Public Access Plan submitted as Condition No. 7 of SMA 438.

Thank you for the opportunity to provide preliminary comments.

Please provide us with a copy of the Draft Environmental Assessment for our review and file.

Mr. Ron Terry  
Geometrician Associates LLC  
October 8, 2013  
Page 4

If you have questions, please contact Esther Imamura of this office at (808) 961-8139.

Sincerely,



 DUANE KANUHA  
Planning Director

ETI:cs

P:\Wpwin60\ETI\Eadraftpre-Consul\Terry Kekaha Kai State Park#2 Imps 7-2-5-2,3,7, Etc.Rtf

cc: Planning Department, Kona



**DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII**

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720

TELEPHONE (808) 961-8050 • FAX (808) 961-8657

October 7, 2013

Ron Terry  
Geometrician Associates, LLC  
P.O. Box 396  
Hilo, HI 96720

**PRE-ENVIRONMENTAL ASSESSMENT CONSULTATION  
KEKAHA KAI STATE PARK PHASE II IMPROVEMENTS  
TAX MAP KEY (3) 7-2-004-003, 017, 019; 7-2-005:002, 003, 007; 7-3-043:001 (PORTION)**

This is in response to your letter dated September 9, 2013.

Please be informed that there are no existing Department of Water Supply facilities within the project area. The nearest adequate point of connection is from an existing 12-inch waterline within Queen Kaahumanu Highway, approximately 3.5 miles from the subject parcels.

Should there be any questions, please contact Mr. Ryan Quitoriano of our Water Resources and Planning Branch at 961-8070, extension 256.

Sincerely yours,



Quirino Antonio, Jr., P.E.  
Manager-Chief Engineer

RQ:dfg

*...Water, Our Most Precious Resource... Ka Wai A Kāne...*

The Department of Water Supply is an Equal Opportunity provider and employer.



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

In reply, please refer to:  
File:  
13-175  
Kekaha Kai Park

September 13, 2013

Mr. Ron Terry, Principal  
Geometrician Associates, LLC  
P.O. Box 396  
Hilo, Hawaii 96721

Dear Mr. Terry:

**SUBJECT: Early Consultation for Environmental Assessment for Kekaha Kai State Park  
Phase II Improvements, North Kona, Island of Hawaii  
TMK's: (3) 7-2-005: 002, 003 & 007; 7-3-043: portion 01; 7-2-004: 003, 017 & 019**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your letter dated September 9, 2013. Thank you for allowing us to review and comment on the subject document. EPO recommends that you review the Standard Comments found on our website: <http://health.hawaii.gov/epo/home/landuse-planning-review-program/>.

You are required to adhere to all Standard Comments specifically applicable to this application.

EPO appreciates your work to create healthy, active, and sustainable communities.

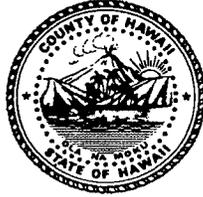
We wish to receive notice of the environmental assessment's availability when it is completed. We request a written response confirming receipt of this letter and any other letters you receive from DOH in regards to this submission. You may mail your response to: 919 Ala Moana Blvd., Ste. 312, Honolulu, Hawaii 96814. However, we would prefer an email submission to [epo@doh.hawaii.gov](mailto:epo@doh.hawaii.gov). We anticipate that our letter(s) and your response(s) will be included in the final document. If you have any questions, please contact me at (808) 586-4337.

Mahalo,

A handwritten signature in black ink, appearing to read "Laura Leialoha Phillips McIntyre".

Laura Leialoha Phillips McIntyre, AICP  
Manager, Environmental Planning Office

**William P. Kenoi**  
Mayor



**Harry S. Kubojiri**  
Police Chief

**Paul K. Ferreira**  
Deputy Police Chief

## **County of Hawai'i**

### **POLICE DEPARTMENT**

349 Kapi'olani Street • Hilo, Hawai'i 96720-3998  
(808) 935-3311 • Fax (808) 961-2389

September 18, 2013

Mr. Ron Terry, Principal  
Geometrician Associates, LLC.  
P.O. Box 396  
Hilo, Hawai'i 96721

Dear Mr. Terry:

RE: EARLY CONSULTATION FOR ENVIRONMENTAL ASSESSMENT FOR KEKAHA KAI  
STATE PARK PHASE II IMPROVEMENTS, NORTH KONA, ISLAND OF HAWAII, I,  
TMKS: (3<sup>RD</sup>.) 7-2-05: 02, 03 & 07; 7-3-43: POR. 01; 7-2-04: 03, 17 & 19

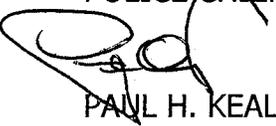
This responds to your letter dated September 9, 2013, regarding the environmental assessment for the above-referenced project.

We have no comments or objections to offer at this time.

If you have any questions, please feel free to contact Captain Randal M. Ishii, Commander of our Kona District, at 326-4646, extension 299.

Sincerely,

HARRY S. KUBOJIRI  
POLICE CHIEF

  
PAUL H. KEALOHA JR.  
ASSISTANT CHIEF  
AREA II OPERATIONS  
RS130623

RMI/dmv

William P. Kenoi  
Mayor

Walter K. M. Lau  
Managing Director



Warren H. W. Lee  
Director

Brandon A. K. Gonzalez  
Deputy Director

**County of Hawai'i**  
**DEPARTMENT OF PUBLIC WORKS**  
Aupuni Center  
101 Pauahi Street, Suite 7 · Hilo, Hawai'i 96720-4224  
(808) 961-8321 · Fax (808) 961-8630  
[www.co.hawaii.hi.us](http://www.co.hawaii.hi.us)

September 23, 2013

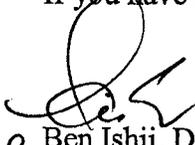
Ron Terry, Principal  
Geometrician Associates, LLC.  
P.O. Box 396  
Hilo, HI. 96720

**SUBJECT: Early Consultation for Environmental Assessment for Kekaha Kai State Park Phase II Improvements  
North Kona, Island of Hawaii  
TMKs: (3<sup>rd</sup>) 7-2-005:002, 003 & 007; 7-3-043: por. 001; 7-2-004: 003, 017, 019**

We reviewed the Early Consultation for Environmental Assessment dated September 09, 2013 and have the following comments:

In 2008, the Federal Emergency Management Agency (FEMA) issued a Hurricane Study for Hawai'i County. In terms of potential risk to life and property, the more protective Base Flood Elevations and Special Flood Hazard Areas from FEMA's hurricane study, were incorporated onto FEMA's July 2011, Preliminary Digital Flood Insurance Rate Maps (Preliminary DFIRMs). Until FEMA's Preliminary DFIRMs become effective, the County will continue using FEMA's current effective Flood Insurance Rate Maps and Flood Insurance Study for Hawai'i County. We advise all coastal property owners to review FEMA's Preliminary DFIRMs and design/construct as appropriate. The Preliminary DFIRMs can be reviewed at the State of Hawai'i, Department of Land and Natural Resources' website: <http://gis.hawaiiinfip.org/fhat/>.

If you have any questions, please contact Kiran Emler of our Kona office at (808)323-4851.

  
Ben Ishii, Division Chief  
Engineering Division

KE  
Copy:--ENG-HILO/KONA

**ENVIRONMENTAL ASSESSMENT  
KEKAHA KAI STATE PARK PHASE II IMPROVEMENTS**

State of Hawai‘i  
Department of Land and Natural Resources  
Division of State Parks

**Historic Property Reports/Requests  
for Determination of No Historic Properties Affected  
and SHPD Correspondence**

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213-008 G

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



RECEIVED  
JUL 25 2014  
Okahara and Associates, Inc.  
HILO OFFICE

WILLIAM J. AHLA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
ESTHER KIA'AINA  
FIRST DEPUTY  
WILLIAM M. TAM  
DEPUTY DIRECTOR - WATER  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
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LAND  
STATE PARKS

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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July 15, 2013

TO: Nicky Thompson, Acting Administrator, Historic Preservation Division  
THRU: Theresa Donham, Archaeology Branch Chief  
FROM: Daniel Quinn, State Parks Administrator  
SUBJECT: §6E-8, HRS, Compliance - Request for Determination of "No Historic Properties Affected" for Park Road Improvements, Mahai'ula Section, Kekaha Kai State Park Ahupua'a of Kaulana, North Kona, Island of Hawai'i TMK: (3) 7-2-05: 003

The Division of State Parks proposes to upgrade the access road and parking area at the Mahai'ula Section of Kekaha Kai State Park, North Kona, Hawai'i Island. Kekaha Kai State Park, formerly known as Kona Coast State Park, is a 1,642.5-acre park situated on the west (*makai*) side of Queen Ka'ahumanu Highway (Hwy. 19) and about 2.6 miles north of Keahole Airport (Figures 1 and 2). This project will entail improvements to the existing entry road toward the shoreline, as well as the construction of three new additional parking areas at the intersection of the entry road with the road/trail to the neighboring *ahupua'a* of Makalawena.

In accordance with HAR 13-275-3 and 13-275-5(b)(2) we are requesting a "no historic properties affected" determination for this project and concurrence to proceed. We believe that the probability of encountering historic properties within the project area is low, based on a recent pedestrian survey of 100% of the project area, historic accounts, previous archaeological studies in the region, and the history of ground disturbance within the project area.

**Project Area**

The project area is located in *makai* portion of the Mahai'ula Section of Kekaha Kai State Park (SP) in the *ahupua'a* of Kaulana, district of North Kona. The southern park boundary follows the Kaulana-'Ohiki boundary at the *mauka* end but then angles back towards Mahai'ula, encompassing only a very small portion of the *makai* extent of Kaulana. The Department of Transportation, Airports Division retained a portion of the coastline at Kaulana and Mahai'ula for the flight path to the Keahole Airport which accounts for this configuration. The Mahai'ula Section is delineated by Queen Ka'ahumanu Highway to the east, the shoreline to the west, and the boundary with the *ahupua'a* of Makalawena to the north. The Maniniowali Section of Kekaha Kai SP is located to the north of Makalawena (Fig. 2). The Makalawena property separating the park into two sections is owned by Kamehameha Schools. The project area is within Tax Map Key 7-2-05: 002 and por. 003 (Fig. 3).



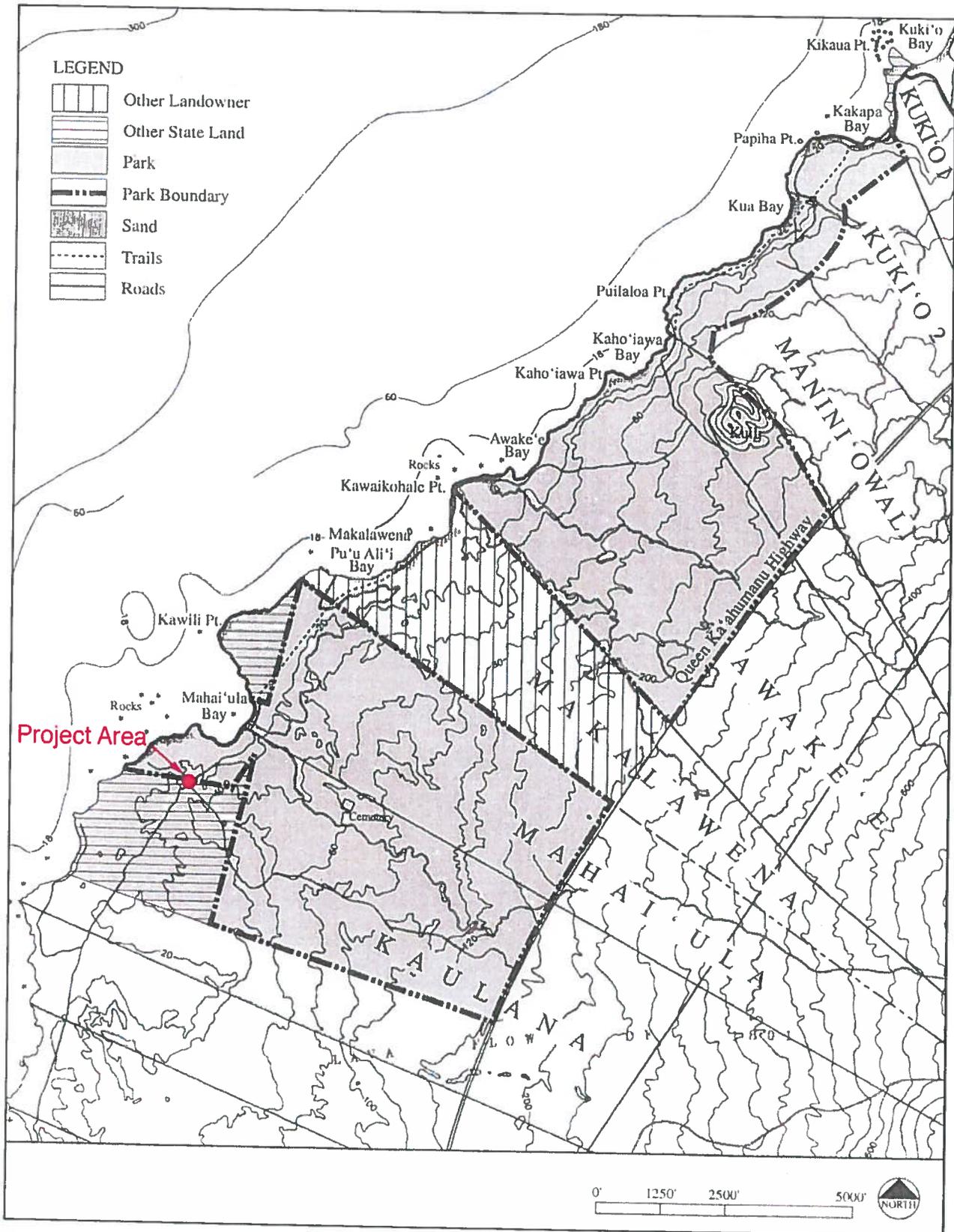


FIG. 2. Map of Kekaha Kai State Park with the Mahai'ula Section to the south encompassing the *ahupua'a* of Kaulana and Mahai'ula. DOT Airports retained the hatched portions of the coastline in the *ahupua'a* of Kaulana and Mahai'ula.

Much of the Mahai'ula Section consists of the 1801 Hu'ehu'e Flow from Mt. Hualālai. This *pāhoehoe* lava flow was devastating, destroying fishponds and coastal settlements, as well as trails and undoubtedly upland features. The project area is relatively flat to gently sloping *pāhoehoe* lava. Soil development in this region is almost non-existent. However, sand, gravel, and boulder beaches have formed in pockets along the coastline. There are two nicely developed coralline sand beaches in the park - the crescent beach along Mahai'ula Bay and Ka'elehuluhulu just south of Mahai'ula. The two beaches are separated by a small expanse of *pāhoehoe* lava. Coral reef and a shallow bench of submerged lava flows fronts the whole of the project area just offshore.

Due to the recent nature of the lava flows, the vegetation in the area is very limited and includes native and introduced landscaping plants. The flows contain very sparse pioneer vegetation communities, dominated by exotic fountain grass. A narrow band of strand vegetation exists along the shoreline at the back of the coralline sand beach which composes Mahai'ula Bay, and in the area just back of Ka'elehuluhulu Beach, just south of Mahai'ula. These strips, separated by a point of *pāhoehoe* lava, contain *kiawe* (*Prosopis pallida*), beach heliotrope (*Tournefortia argentea*), *milo* (*Thespesia populnea*), *kou* (*Cordia subcordata*), *naupaka* (*Scaevola sericea* Vahl) and *pohuehue* (*Ipomoea pes-caprae*), with *kiawe* being the dominant species. In addition, coconut groves are situated at both ends of Mahai'ula Bay and associated with the historic occupation of the area. A native sedge famous for use in woven mats, *makaloa* (*Cyperus Laevigatus*), grows within and around the margin of the ponds at Ka'elehuluhulu Beach.

The climate of the area is characterized as hot and dry. Rainfall in this region averages less than 30 inches per year, although some fresh water makes its way to the shoreline from the uplands by flowing underground through lava tubes.

An important natural feature of the coastal area in this region are the anchialine pools. These slightly brackish pools are fed by underground streams and provide a valuable source of fresh water to this region. These pools contain important biological and cultural resources. They support native species such as 'ōpae'ula (*Halocaridina rubra*) and provide habitat for the endangered black necked stilt (*ae'o*, *Himantopus mexicanus knudseni*). The anchialine pools would have been an important source of drinking and irrigation water in this dry and arid region.

### Project Description

The park entry road for the Mahai'ula Section runs from Ka'ahumanu Highway to a small parking area at Ka'elehuluhulu to the south of Mahi'ula Bay. This unimproved road over the 1801 *pāhoehoe* flow was initially constructed in the 1980s by the previous landowner for access to the shoreline. The entry road intersects a 4 wheel-drive road that runs parallel along the coastline from Keahole to Makalawena. The section of 4-WD road in the park is used by vehicles for park maintenance and by park users accessing Mahai'ula Bay and Makalawena on foot. Most of these park users park their vehicles at the intersection of the two roads.

Improvements are proposed in 3 locations at the intersection of these roads to improve and expand parking for park visitors (Figures 4 and 5). The parking areas will be improved with grading and gravel fill but no paving. The project will also include spot grading of the existing entry road. NOTE: the road is shown in the older alignment in Figure 3.



FIG. 3. Tax Map Key showing the park boundaries for the Mahai'ula Section of Kekaha Kai State Park and the approximate project area.  
 NOTE: The current alignment of the park entry road is not shown on this map. The "burial lot" is a privately owned parcel within the park.

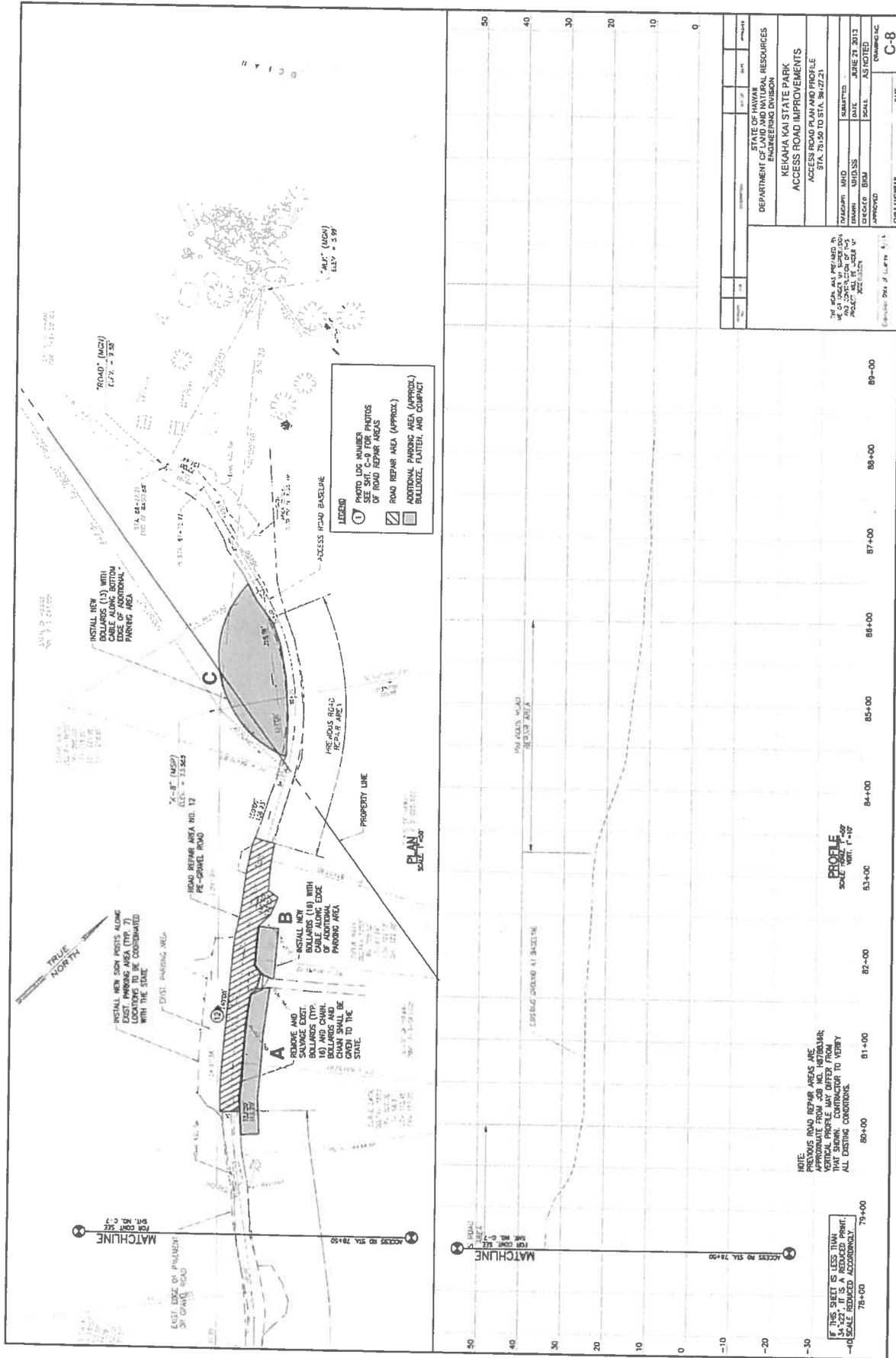


FIG. 4. Construction plans for the parking improvements along the park entry road to Mahai'ula.



FIG. 5. Existing parking, park facilities, and proposed construction areas along the Mahai'ula park entry road.

- 1) For the road improvements, the current road way will be graded in sections, spot filled with gravel and compacted (Photo 1).
- 2) For additional parking, the first parking area (A) is located on the north side of the entry road and on the east side of the gate and road/trail to Makalawena. This area measures 170 feet (51 meters) in length (E-W) by 20 feet (6 meters) in width (N-S). This portion of the project area and the former surface of the 1801 *pāhoehoe* lava flow have been previously disturbed by bulldozing in association with road construction and/or road maintenance. The area will be graded, filled with gravel, and compacted (Photo 2).
- 3) For additional parking, the second area (B) is located on the north side of the entry road and on the west side of the gate and road/trail the Makalawena. This area measures 60 feet (20 meters) in length (E-W) by 20 feet (6 meters) in width (N-S). This portion of the project area and the former surface of the 1801 *pāhoehoe* lava flow have been previously disturbed by bulldozing in association with road construction and/or maintenance. The area will be graded, filled with gravel, and compacted (Photo 3).
- 4) For additional parking, the third area (C) is located 260 feet to the west of the gate across the Makalawena road/trail on the south side of the entry road and east of the existing restrooms. This area measures 200 feet (60 meters) in length (NE-SW) by 65 feet (20 meters) in width. This portion of the project area and the former surface of the 1801 *pāhoehoe* lava flow have been previously disturbed by bulldozing in association with road construction and/or maintenance. This area will be graded, filled with gravel, and compacted (Photo 4).

### Historical Background

#### *Kekaha wai'ole o na Kona*

Waterless Kekaha of the Kona district

Kekaha in Kona, Hawai'i, is known for its scarcity of water but is dearly loved by its inhabitants [Pukui 1983, #1716].

The earliest historical account of this area was made in 1794 by Captain Vancouver who described the Kekaha area in his journal as follows:

... the adjacent shores were uninteresting, being chiefly composed of volcanic matter, and producing only a few detached groves of cocoa nut trees, with the appearance of little cultivation, and very few inhabitants [Vancouver 1798, Vol. 3: 62].

The coconut trees seen by Vancouver were likely clustered around the anchialine pools found along this shoreline where habitation was centered. While Vancouver noted little cultivation, the arid nature of the area would have precluded the growing of crops such as *kalo* (taro). Sweet potatoes and other crops raised in lava flows were often cultivated in mulched pits which would not have been easily visible from a passing ship. Further evidence for this fact comes from Handy who relates:

Wherever a little soil could be heaped together along the dry lava coast of North Kona, a few sweet potatoes were planted by fisherman at such places as Honokohau, Mahaiula, Makalawena, Kaupulehu, Kiholo, Keawaiiki and Kapalaoa [Handy 1940:163]



PHOTO 1  
Existing parking along the south side of the Mahai'ula entry road. View to the SW.



PHOTO 2  
Area A on the north side of the Mahai'ula entry road and to the east of the gate and road/trail to Makalawena  
View to the W (*makai*).



PHOTO 3

Area B on the north side of the Mahai'ula entry road and to the west of the gate and road/trail to Makalawena. View to the NE.



PHOTO 4

Area C on the south side of the Mahi'ula entry road and west (*makai*) of the intersection with the road/trail to Makalawena. View to the W with restrooms and parking lot in the background.

John Papa I'i relates a voyage he took as a young boy (circa 1812) in a ship bound for Kailua along this shoreline:

... The next day the ship arrived outside of Kaeleluluhulu, where the fleet for *aku* fishing had been since the early morning hours. The sustenance of those lands was fish.

... Soon the fishing canoes from Kawaihae, the Kaha Lands and Ooma, drew close to the ship to trade for the *pa'i'ai* (hard poi) carried on board, and shortly a great quantity of *aku* lay silvery-hued on the deck. The fishes were cut into pieces and mashed; and all those on board fell to and ate, the women by themselves. [I'i 1959:109-110]

The missionary Reverend William Ellis travelled along this coastline in 1823, and described coastal settlements at Kapalaoa, Wainanali'i, and Kīholo. His description is the most detailed early account of this region, but he does not convey any information about the project area between Kīholo and Kailua-Kona.

The Hawaiian historian Samuel Kamakau recounts events associated with this lava flow:

Another important event which occurred in the fourth year of Kamehameha's rule was the lava flow which started at Hu'ehu'e in North Kona and flowed to Mahai'ula, Ka'upulehua [sic], and Kiholo. The people believed that this earth-consuming flame came because of Pele's desire for *awa* fish from the fishponds of Kiholo and Ka'upulehu and *aku* fish from Ka'eleluluhulu; or because of her jealousy of Kamehameha's assuming wealth and honor for himself and giving her only those things which were worthless; or because of his refusing her the tabu breadfruit of Kameha'ikana which grew in the uplands of Hu'ehu'e where the flow started.

The great fishpond known as Pa'aiea, was formerly located between Ka'eleluluhulu and 'O'oma, south of Keahole Point. This pond is reputed to have been 3 miles long and 1.5 miles wide. The fishpond is reported to be completely filled in by the 1801 lava flow. The small pond presently existing at the back of the sand beach at Ka'eleluluhulu is, in fact, a remnant of the great Pa'aiea Fishpond, according to John Ka'elemakule, a resident of Mahai'ula in the late 19<sup>th</sup>/early 20<sup>th</sup> century:

... In the church where Mr. Thurston held the prayer service [at Makalawena], long *koa* benches were placed along the walls, and in the center of the church, the *makaloa* sedge had been spread on the floor. The *makaloa* was obtained from what remained of the famous pond that was covered by the eruption. It was the pond Paaiea, a portion of which remains at Kaeleluluhulu to this day. This is what remains of the great pond that was several miles long, but is now covered by the stone plain that spreads across Kekaha [Ka'elemakule 1928:4].

The shoreline at Kaulana and Mahai'ula contains evidence of tsunami damage. This phenomenon was recorded in the early nineteenth century for this area by the missionary Cochran Forbes:

On the 7<sup>th</sup>, [November, 1837] about 7 clock at night the sea at this place receded a number of feet, leaving the shore dry far below low water mark. The phenomenon produced great [sic] excitement among the natives & fish. The cause was unknown as we had no earthquake nor any sensible cause. The evening was perfectly calm & pleasant. The moon was in her first quarter. At Kekaha where the shore is low the return of the sea, tho' very gentle swelled far above high water mark and swept away some houses, tho' no lives were lost. At Hila the return of the sea was very violent and rose high above high water mark and did great damage as many of the people there lived on the shore. Eleven or twelve

souls were suddenly swept into eternity and multitudes of others carried, by the receding waves far, from land but effected a return & some were picked up by the boat of a whaleship lying at anchor. [Forbes 1984:59]

Additional evidence for tsunami impacting this area comes from Kelly (1973) who relates that all the houses in the village of Makalawena, just north of Mahai'ula, were wiped out in the devastating tsunami of 1946. There is no firsthand account of the effect of that tsunami on Mahai'ula but apparently, the houses at the northern end of the bay survived with little or no damage, as they still stand today.

During the Mahele, four house lot claims were registered in Kaulana, including three at Ka'elehuluhulu and one at "Kaulana-kai". In Mahai'ula, two claims were registered, one of which was for land at Keawehala at the northern end of Mahai'ula Bay (Maly 1998). None of these land claims at Kaulana or Mahai'ula were awarded. The reason for this is unknown, but the claims do indicate that a small community made up of several families inhabited the shoreline area of this section of the park in the middle of the nineteenth century. Both of these *ahupua'a* became government lands (Indices of Awards). This is not surprising considering that the area contained very limited resources. Roughly half of the land area of Kaulana was covered by the 1801 lava flow, making it even less desirable.

An 1882 map of the region by J.S. Emerson, (State Survey Office Reg. Map No. 1280) indicates a house at the northern end of Mahai'ula Bay belonging to Ka'elemakule. The Emerson map also indicates that the 1801 lava flow was composed of two separate episodes, an earlier "smooth" flow and a later flow of "very rough" *pāhoehoe*.

J. Ka'elemakule, Jr. purchased the land around Mahai'ula Bay as well as a separate inland burial lot from the Territory of Hawaii on May 27, 1903 for \$123.00. The transaction was recorded as Land Grant No. 4723. The forty-acre shoreline parcel as well as the one-acre burial lot were surveyed by the government at that time and the survey indicates that the corners of both properties were marked by four *ahu* on each parcel (Land Grant files, Land Management Division, State of Hawaii). Two buildings are plotted on the survey map at the north end of the bay, along with the name "Keawehala" which may be a place name associated with that area. At the south end of the bay, the name "Lae o Umi" appears to denote a coastal location (examination in the field reveals that a finger of lava extends into the ocean at the southern end of Mahai'ula Beach - this is quite likely the point referred to in the survey). The large 40-acre parcel straddles the boundary of Mahai'ula and Kaulana, with the bulk of the land situated in Kaulana. The burial lot is also located in Kaulana. It appears that the Ka'elemakule family was a tenant of the land at Mahai'ula from at least the mid-nineteenth. John Ka'elemakule Jr.'s father was born in 1854 and raised at Mahai'ula by his *hanai* parents Kaaikaula and Poke (Maly 1998).

Several accounts published in the Hawaiian language newspaper Ka Hōkū o Hawai'i convey rich information about the Kekaha region in general and about specific locations within the project area. J.W.K.I. Kihe wrote about Ka'elehuluhulu in 1914:

Ka'ele-huluhulu (Splintered or frayed outer hull of a canoe)

It is just a small place which is called Ka'elehuluhulu, but the fame of this landing is great. There is a place to enter the ocean here with a channel, and in the middle of this channel which the canoes use to enter, is a mound of *pahoehoe* called Ka'elehuluhulu.

There is water to the inland and seaward of this stone, and if one goes *aku* fishing even at dawn, this is the exit one must depart from. If the sea water was shallow, that is at low tide: all in the canoe would leap out to bear the canoe above this *pahoehoe* mound and place it in the ocean, then they get back into the canoe and travel away. If when they return to this place, the tide is low, they bear the canoe upland of the stone and place it in the water, and then paddle to the canoe landing. It is because of this continual hauling of the canoes [over the *pāhoehoe*], that the hulls become rough or frayed in texture, and so "the rough-frayed hull" came to be named [Kihe and Wise 1914].

John Ka'elemakule shared his life at Mahai'ula in the late nineteenth and early twentieth century in a series of articles written for Ka Hōkū o Hawai'i. He richly conveys many aspects of life at that time at Mahai'ula, emphasizing the importance of fishing. Ka'elemakule indicates that there were temporary house sites on stone platforms along the shoreline, an area which was formerly shaded by very large *kou* trees. He also relates the following regarding a petroglyph field and a sacred stone at Mahai'ula Bay:

There is a fine broad place on the *pahoehoe*, about two miles from the village, along the trail that ascends to the uplands (*alanui pii uka*), that one can see many of the names of the old people written upon the *pahoehoe*. The names and letters are etched in the *pahoehoe*. In several of the names that I saw written there, was the letter "Z", which is the first letter of the name like "Zeawihela" and "Zaauomoana". This is a letter which was not entered in the mother language of our land. We begin at the "A" and go to the "W", so how did the old people get this letter "Z"? [August 20, 1929: 3, translated by Kepā Maly]

There in the middle of the bay and canoe landing of Mahai'ula is a stone in the water. It stands just a few fathoms out from the shore. When the tide is out, you can walk out to and get on the stone. The ancient name by which this stone was known is "Pohakuolama". This stone looks like a block on which women weave hats. It is round from top to bottom, two people can encircle it, and it is 5 feet high. It is said in the legend that the stone is the body of a woman, and it is a stone which causes the increase or abundance of fish for the fishermen of this land, Mahaiula. For three months, this female stone dwells in a period of *kapu* (restriction), a period of menstruation. This is in the months of May, June, and July. During the time of defilement, the fishermen of old were also forbidden from taking offerings to the stone with which to ask for the increase of fish. When this female stone, in the bay and canoe landing of Mahaiula, dwelled in her period of menstruation, the water appeared yellowish-red (*halena melemele ula*) in shallow waters to about two fathoms depth. But when one looked into the water, it could not be seen. The yellow-red remained in the bay of Mahaiula for the three months mentioned above, and it was so for all the years of my youth. Perhaps it is the same, even at this time.

At the time when her menstruation ended, that was the time that she would be purified, the defilement of the period ended. It was at that time also, that the yellow-red would disappear and the sea water of Mahaiula became clear once again. Then once again, the fishermen of Mahaiula would take offerings to her asking that she would cause the fish to increase. [August 22, 1929- translated by Kepā Maly]

The smaller of the two homes at Mahai'ula was built by John Ka'elemakule in 1880 with lumber shipped from Honolulu. This house, which his foster mother named Kalahikiola, replaced an earlier *pili* thatched home in the same location (Ka Hōkū o Hawai'i, July 9, 16, August 6, 1929 - translated by Kepā Maly). This house is just south of the two-story Magoon house built early in this century. Ka'elemakule also wrote that both his foster parents, Kaaikaula and Poke, and his birth mother and her husband, Keakaonalii and Maianu, were buried in the cave called Kolomikimiki in Kaulana. This one-acre cemetery remains a private inholding within the park (refer to Fig. 3).

John Reinecke recorded several archaeological features during his cursory archaeological survey of this coastline in 1930. Reinecke's observations are important as they represent the last recorded observations prior to the large tsunamis of this century which apparently caused a great deal of disturbance to the near shore area. He noted concrete salt pans and house sites at the northern end of Kaulana near the beach "at the edge of the flow", evidence that salt manufacturing was taking place. This industry may explain the Ka'elemakule purchase of land encompassing the lava flow in Kaulana, as well as his house site in Mahai'ula. Reinecke recorded four modern houses plus the ruins of another, as well as what he described as a modern stone and concrete platform, suggesting (as the earlier unawarded land claims had) that there was a small settlement at Mahai'ula early in this century. Reinecke used J. Ka'elemakule as an informant who told him of a *heiau* "at the spot Kaeleluluhulu, on the beach. It is a fishing *heiau* called Hale o Hiu". He also reported the petroglyphs "on the pahoehoe about 1.5 miles from Mahai'ula". Reinecke did not relocate either of these sites.

With regard to the trail between the former Magoon estate and Makalawena, George Magoon had the following to say:

The Magoons continued to access Mahai'ula by boat or from Hu'e'hu'e by foot and donkey until the late 1940s or early 1950s, when the trail down through Ka'upulehu to Awake'e was modified for jeep use. For awhile, the Magoons would drive to Makalawena, then make the last leg of the trip to Mahai'ula by boat. Eventually, Porto [Almodober] and his "compad," Alfredo, built a road by hand, across the lava to Mahai'ula. This road parallels, and in some places obliterates, an older aa paved trail. Today the Magoon family enjoys a paved access from the Queen Kaahumanu Highway. [Maly 1998]

A tour company began bringing tourists down to Ka'eleluluhulu beach in 1977. Restrooms, shelters, and a snack bar were built on the leased land, many of which are still standing when the State purchased the property in 1995. The company's owner, Ivar Kaipo, constructed a paved road from the highway down to the shoreline of the Ka'eleluluhulu parcel in 1979 (Clark 1985:117). This road presently serves as the park entry road to the Mahai'ula Section of the park.

### Previous Archaeological Investigations

Archaeological surveys in the Mahai'ula Bay area were conducted as early as 1906, with a more recent archaeological reconnaissance survey of the Mahai'ula Section of the park having been conducted in 1997 (Carpenter, Major, and Yent 1998). John F.G. Stokes, in his 1906-07 island-wide survey of *heiau* sites, recorded two archaeological sites in the Mahai'ula Section of the park. One site is a fishing *ko'a* called Haleohui and the other is an unnamed structure near Ka'eleluluhulu (Stokes 1991).

The Bishop Museum also conducted an archaeological survey of the area under the guidance of John Reinecke in 1930. While in the Kaulana and Mahai'ula area, Reinecke observed a total of seven archaeological site areas, and discussed two others (Reinecke 1930):

**Site 90.** A complex of 6 house platforms, concrete salt pans, walled pools along the beach, one dwelling site, 6 or 7 terraced enclosures, and 4 good *papamū*.

- Site 91.** A complex consisting of a high walled pen, 3 house platforms, one with two natural shelters inside, a walled floor of *'ili'ili*, one *papamū*, and 2 platforms (one of lava and one of modern concrete).
- Site 92.** A modern house in ruins, a wall, and a *papamū*.
- Site 93.** Three house sites, one being modern, and a series of shelter caves.
- Site 94.** A house site in line with 3 present houses, pool and wells by a clump of coco palms, and an additional house site located past the coco palms.
- Site 95.** Five house sites, a walled platform, paths running along the coast, with graves and shelters being *mauka*.
- Site 96.** Several old platforms on the sand.

In 1970, Francis Ching completed an archaeological survey within a 23-mile long by 2000 foot-wide area for the construction of the Queen Ka'ahumanu Highway. He recorded 9 features in Mahai'ula and 5 in Kaulana, including 6 *ahu*, 2 C-shape shelters, 2 trails, 3 dwelling caves, and one disturbed burial cave (feature 1184). These features are located along the highway, approximately 2,500 meters *mauka* of Mahai'ula Bay (Ching 1971).

Ching included an inventory of fishponds for the Kekaha region as an appendix to his 1970 survey. Of interest are two ponds recorded as being destroyed by the 1801 lava flow, the previously mentioned Pa'aiea Fishpond, reputed to be the largest on the island, and Kaulana Fishpond, about which he wrote the following:

The fishpond of Kaulana. Like Paaiea, was also destroyed by the Hualalai flow of 1801. The makai portion of Kaulana ahupua'a, in which this fishpond was located, has been almost completely covered by the lava. A few sites are noted for this area. [Ching 1971: Appendix 4]

In 1973, William Kikuchi inventoried the fishponds of Hawai'i Island and recorded what he called a remnant of Kaulana Fishpond, near the parking lot at Ka'elehuluhulu. This pond is also noted as potentially being a remnant of Pa'aiea Fishpond.

During the 1997 survey by State Parks, a total of 71 archaeological sites and site complexes were recorded, along with a total of 364 features (Carpenter, Major, and Yent 1998). Some of these sites had been previously recorded by Reinecke (1930) and Ching (1971). The majority of sites in Kaulana are located within 200 meters of the shoreline and the most numerous type of sites found are petroglyphs and *papamū* (Table 1). Many of the petroglyphs are Hawaiian names etched into the *pāhoehoe* surface of the 1801 lava flow. While much of the settlement of Kaulana appears to have been abandoned by the end of the 19<sup>th</sup> Century, activities such as salt manufacture continued into the 20<sup>th</sup> Century. There is also evidence that the recreational activities in the 20<sup>th</sup> Century created sites and impacted some earlier sites.

TABLE 1  
Formal Feature Type Frequency, *Ahupua'a* of Kaulana

Petroglyph	156	Enclosure	2
<i>Papamū</i>	22	Burial platform	2
<i>Ahu</i>	11	C-shaped shelter	1
Wall	7	Excavated / cleared pool	1
Platform	5	Walled pond	1
Cleared / paved area	5	Paved trail	1
U-shaped shelter	1	Historic salt pan complex	1
Worn foot/horse trail	3	Mortared stone foundation	1
Shipwreck remnant	3	Sinkhole shelter	1

Nine (9) archaeological sites are located in the project vicinity (Fig. 6 and Table 2). The petroglyphs and *papamū* are believed to be significant for the potential to yield information about the history of the area, especially after the 1801 lava flow, and also for their traditional cultural significance to native Hawaiians. Further research may identify descendants of those who inscribed them and the cultural activities associated with creating these petroglyphs. The two ponds by the parking lot are significant because of their association with the former fishpond that existed along this shoreline before the 1801 lava flow. Habitation features are limited in the project vicinity but significant for their potential to yield information with further research.

TABLE 2  
Archaeological Sites Inventoried in the Vicinity of the Project Area<sup>1</sup>

Site #	Site Type	Location	Potential Impacts	Significance
30	Petroglyph & <i>papamū</i>	On <i>pāhoehoe</i> rise to N of entry road; across entry road from Area C.	Low due to raised elevation; entry road creates buffer.	D, E
31 (Reinecke's Site 90)	Habitation site with low, partially paved platforms, midden, and 4 <i>papamū</i>	Approximately 20m west of Site 30 on <i>makai</i> side of the same <i>pāhoehoe</i> rise; in <i>kiawe</i> thicket.	Low due to raised elevation and vegetation cover; entry road creates buffer.	C, D
34	Petroglyphs	Approximately 25m SE of Site 31 on same <i>pāhoehoe</i> rise.	Low due to raised elevation; entry road creates buffer.	D, E
64	Petroglyphs & <i>papamū</i>	On S slope of <i>pāhoehoe</i> on which Site 31 is located.	Low due to raised elevation; entry road creates buffer.	D, E
51	Anchialine pool	S side of parking lot and <i>makai</i> of restrooms.	None, parking lot and restrooms create buffer	D
52	Walled anchialine pool ( <i>Pa'aiea Fishpond</i> )	W ( <i>makai</i> ) side of the parking lot.	None; parking lot creates buffer.	A, B, D, E
53	Walls, possible platforms	W ( <i>makai</i> ) of restrooms and S of pond (Site 51); <i>kiawe</i> thicket.	Low due to distance from project area and vegetation cover.	D
54	Concrete salt pans	Near the shoreline and about 40m north of the S property line.	Low due to distance from project area.	C, D

Significance Criteria:

A – Association with events that have made an important contribution to broad patterns of history.

B – Association with famous people.

C – An excellent example of a site type.

D – Have yielded or likely to yield information important for research on prehistory or history.

E – Traditional cultural significance to an ethnic group.

<sup>1</sup> Compiled from Carpenter, Major, and Yent 1998.

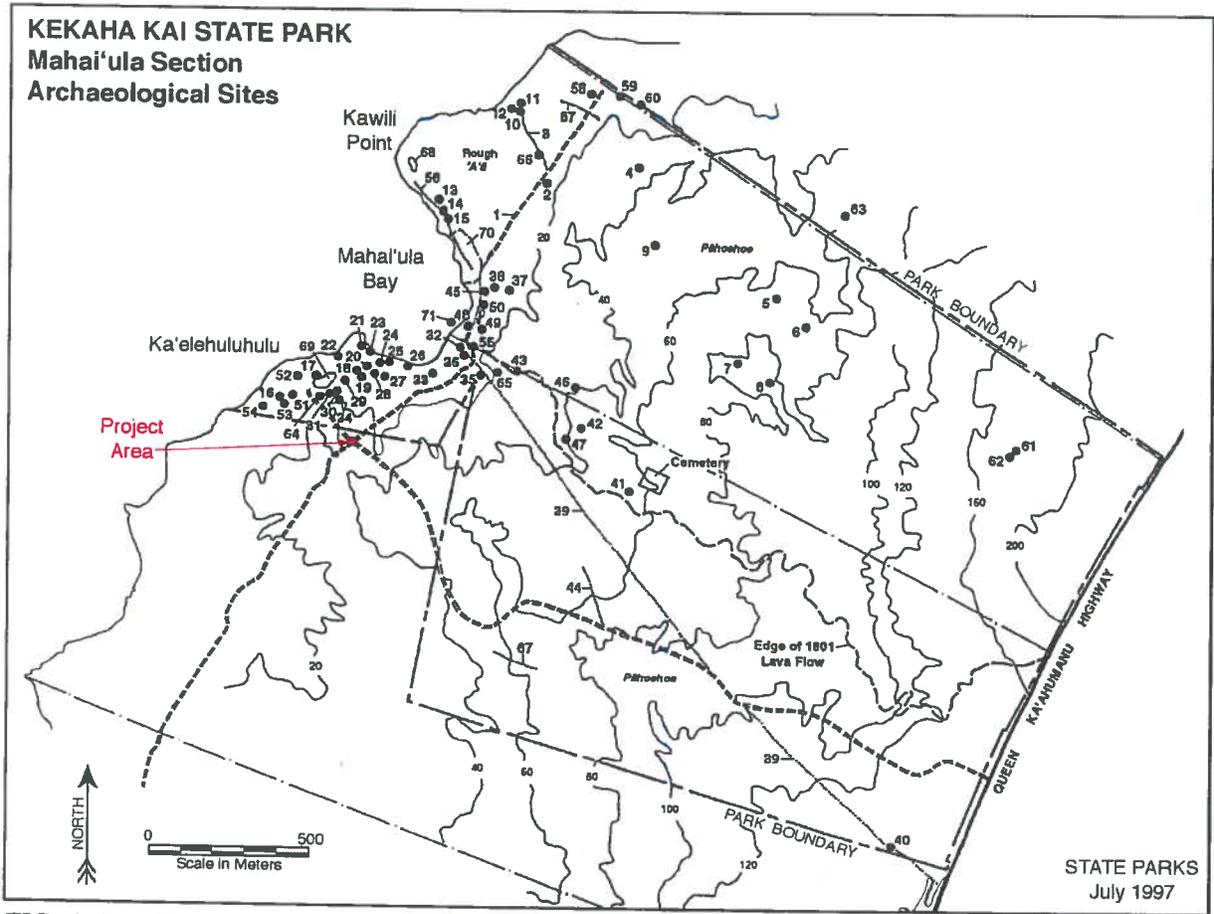


FIG. 6. Location of archaeological sites in the vicinity of the project area based on the 1997 survey conducted by State Parks archaeologists (Carpenter, Major, and Yent 1998: 29).



## Project Area Inspection and Consultation

State Parks Archaeologist Tracy Tam Sing and Johnny Himalaya, intern with the State Historic Preservation Division, inspected the project area on June 19, 2013. A 100% pedestrian survey of the project area was conducted. No historic properties, including historic structures or archaeological sites/ features, were observed in the project area where the new, expanded parking lots will be created. The project area was previously bulldozed as part of the construction of the entry roads and existing parking areas which disturbed the surface of the 1801 *pāhoehoe* lava flow. The areas selected for improved parking correspond to the previously disturbed areas and therefore, no further impact to the 1801 lava flow is anticipated as part of this project (refer to Fig. 5). The site inspection also determined that the previously identified archaeological sites in the vicinity are buffered by roads, parking lots, elevation differences and vegetation and therefore, should not be impacted by this project (Table 2).

On July 3, 2013, lineal descendant Nicole Lui of the Ka'elemakule family, was notified of the proposed improvements to the park entry road and construction of the new parking areas. After consultation with the Ka'elemakule family, she informed State Parks that the family was pleased to know of the improvements, and concurs with the proposed project activities.

### Conclusion and Request for Determination and Concurrence to Proceed

We believe there will be “no historic properties affected” by the construction of the proposed entry road improvements, as well as, the construction of three new additional parking areas (A, B, & C) near the intersection of the entry road and the road/trail to Mahai'ula Bay and Makalawena within Kekaha Kai State Park. All archaeological and historical evidence to date indicates that the likelihood of encountering archaeological surface or subsurface features and deposits within the project area, while indeed possible, is slim to none.

As a precautionary measure during the initial grading phase within the project area, the State Parks archaeologist will inspect the work. We do not, however, expect historic properties to be present based on past ground disturbance in the project area. On the remote chance that cultural deposits, artifacts, or human remains are uncovered by the ground disturbing activity in this previously disturbed 1801 *pāhoehoe* lava flow, the contractor will be instructed to stop all work in the vicinity of the find and State Parks will respond via the appropriate means under either HAR 13-274-12 or HAR 13-300-40.

The State Parks archaeologist will also work with the contractor on delineating staging areas and areas permitted for the movement of machinery in the park. The known historic properties in the vicinity will be pointed out and the contractor will be instructed to keep all machinery and stockpiling of materials to previously disturbed areas, such as the area *mauka* of the restrooms. The location of the sites does not indicate that fencing will be required around the sites during the construction.

We thank you in advance for your review of our proposed determination of “no historic properties affected” and our request for concurrence to proceed with the road improvements and construction of additional parking areas at the Mahai'ula Section of Kekaha Kai State Park. If you have any questions please contact Tracy Tam Sing, Hawai'i Island Parks Archaeologist, at (808) 313-0858 or Tracy.L.TamSing@hawaii.gov.

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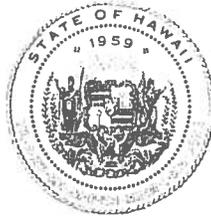
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NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

WILLIAM J. AHL, JR.  
CHAIRPERSON  
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FIRST DEPUTY

WILLIAM M. TAM  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAPU O WA'AI AND RESERVE COMMISSION  
LAND  
STATE PARKS

August 2, 2013

MEMORANDUM

To: Dan Quinn  
Division of State Parks  
PO BOX 621  
Honolulu, HI 96809

LOG NO: 2013.4276  
DOC NO: 1308MV03  
Archaeology

FROM: Mike Vitousek, Lead Archaeologist Hawaii Island Section

Handwritten signature of Mike Vitousek in blue ink.

SUBJECT: Chapter 6E-8 and Historic Preservation Review -  
Request for Letter of Determination  
Parking and Roadway Improvements within Kekaha Kai State Park  
Kaulana Ahupua'a, North Kona District, Island of Hawai'i  
TMK (3) 7-2-005:003 (portion)

Thank you for the opportunity to review the subject project that was received by our office on July 19, 2013. According to the project description, this project involves the grading and resurfacing of the existing access road as well as the creation of three new parking areas. These areas are identified as A, B, and C. A is 20ft. by 170 ft., B is 20 ft. by 60 ft., and C is 65ft. by 200ft. These areas are depicted on figure 5 of this submittal. A review of our records indicates that this area was subjected to an archaeological reconnaissance survey by State Parks archaeologists (Carpenter, Major, and Yent 1998), and no historic properties were identified in the current project area. According to the submittal, this project area was recently subjected to a 100% pedestrian survey by State Parks archaeologist Tracy Tam Sing, and again no historic properties were recorded. Therefore State Parks has requested SHPD concurrence with a determination of no historic properties affected. Given the absence of historic sites from the project area, SHPD concurs with the determination that **no historic properties will be affected** by the proposed project.

However, SHPD noticed that the locations of sites in the vicinity of the project area were presented with temporary site numbers and not State Inventory of Historic Places Numbers. In the future, please use SIHP numbers to describe sites if possible. If no SIHP numbers have been assigned, please request new SIHP numbers for these sites so that they can be included in the statewide inventory of historic properties. Finally, in the event that historic resources, including human skeletal remains, structural remains, sand deposits, midden deposits, or lava tubes are identified during construction activities, please cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division at (808) 933-7653.

Please contact Mike Vitousek at (808) 652-1510 or [Michael.Vitousek@hawaii.gov](mailto:Michael.Vitousek@hawaii.gov) for any questions or concerns regarding this letter.

CC: [Tracy.L.TamSing@hawaii.gov](mailto:Tracy.L.TamSing@hawaii.gov)

213-008 C

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII

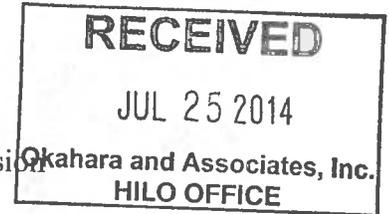


STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

March 17, 2014

WILLIAM J. AILA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
  
ESTHER KIA'AINA  
FIRST DEPUTY  
  
WILLIAM M. TAM  
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ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS



TO: Alan S. Downer, Administrator, Historic Preservation Division  
ATTN: Mike Vitousek, Lead Archaeologist Hawaii Island Section  
FROM: Daniel Quinn, State Parks Administrator  
Subject: §6E-8, HRS, Compliance – Revised Request for Determination of “No Historic Properties Affected” for Park Walkway and Shower Improvements, Manini‘ōwali Section, Kekaha Kai State Park Ahupua‘a of Manini‘ōwali, and Kūki‘o 2, North Kona, Island of Hawai‘i TMK: (3) 7-2-004: 009

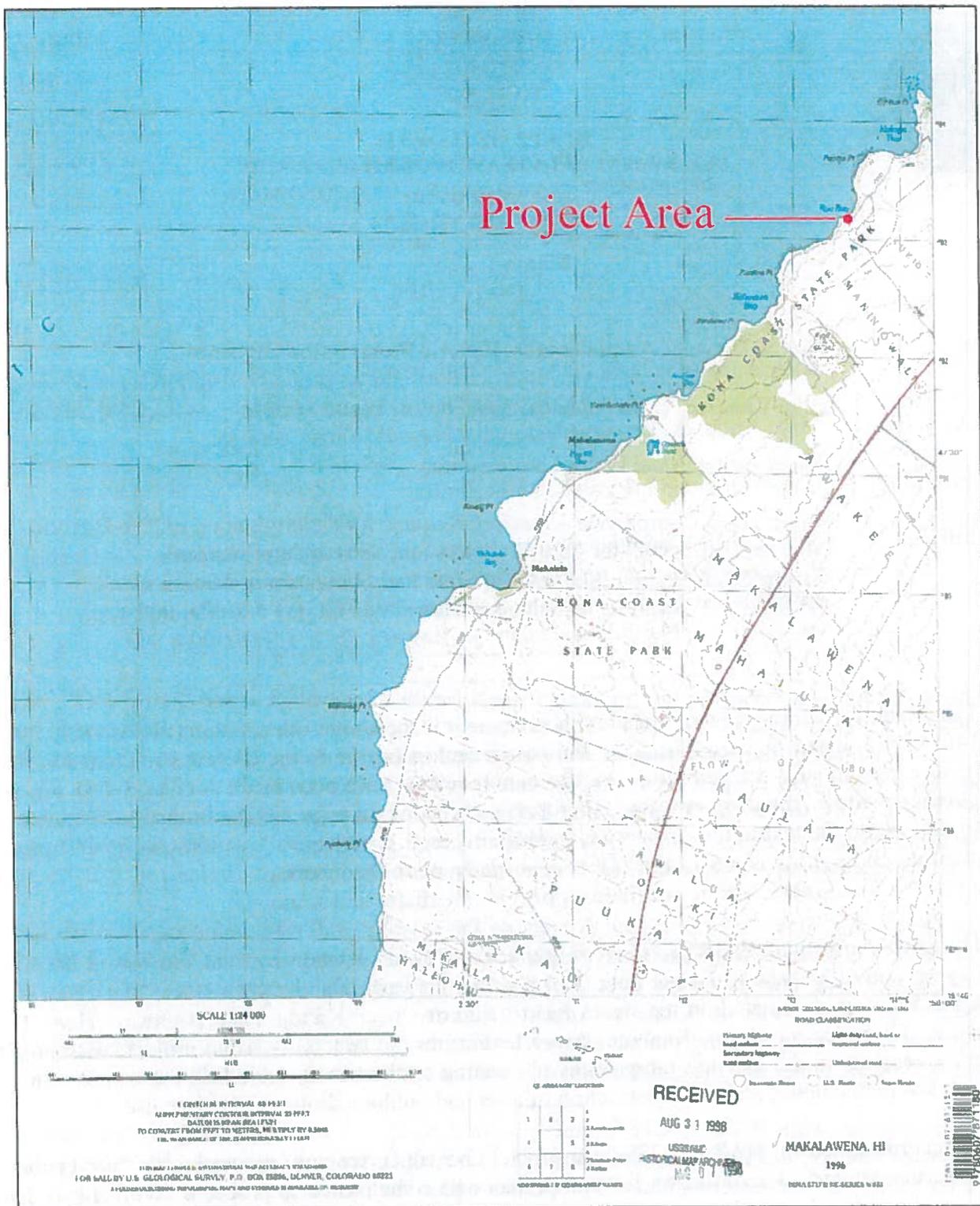
Thank you for your review of our previous request for the above-titled action (SHPD DOC. NO: 1401MV22) dated January 29, 2014. This document incorporates the revisions requested in that review, specifically the **reduction of the construction buffer from 10 feet to 5 feet on the northern side of the project area**. Appropriate revisions have been made to Fig. 5 (p. 8), Fig. 9 (p. 18) and to the text in the “Construction Buffers” section on page 19. Additionally, this memo clarifies, through revisions to the “Oversight/Inadvertent Discoveries” section (pp. 19-20) that **all heavy machinery will be confined to previously disturbed areas**.

The Division of State Parks proposes to upgrade the existing walkway, and showers at the Kua Bay section of Kekaha Kai State Park, North Kona, Hawai‘i Island. Kekaha Kai State Park is a 1,642.5-acre park situated on the west (*makai*) side of Queen Ka‘ahumanu Highway (Hwy. 19) about 5.2 miles north of Keahole Airport (Figures 1 and 2). This project will entail improvements to the existing ramp/walkway leading to the beach, including the installation of two new picnic tables and the construction of a second outdoor shower for public use.

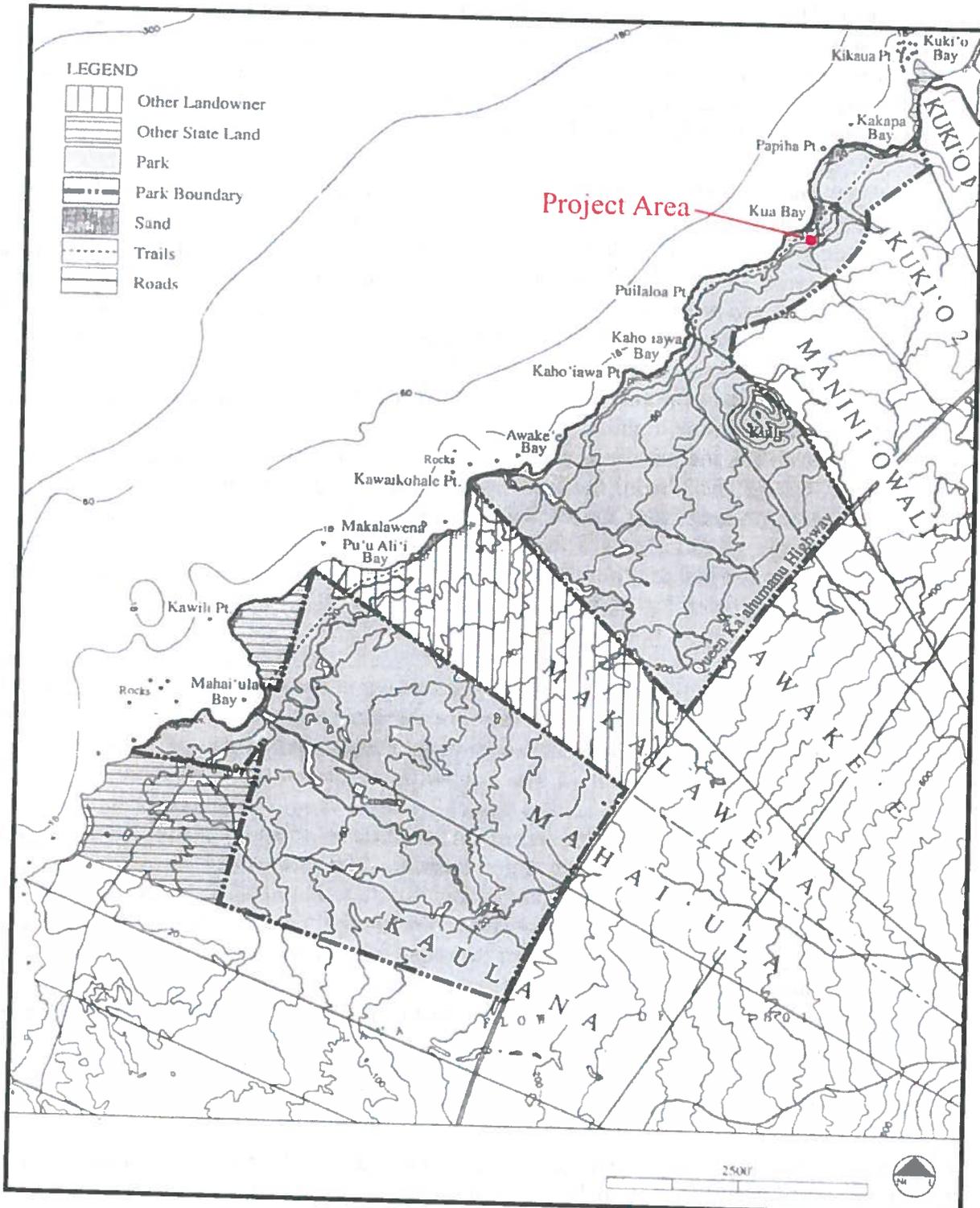
In accordance with HAR 13-275-3 and 13-275-5(b)(2) we are requesting a “no historic properties affeted” determination for this project and concurrence to proceed. We believe that the probability of encountering historic properties within the project area is near zero, based on a recent pedestrian survey of 100% of the project area, historic accounts, previous archaeological studies in the region, and the history of ground disturbance within the project area.

**Project Area**

The project area is located in the *makai* portion of the Manini‘ōwali Section of Kekaha Kai State Park (SP) in the *ahupua‘a* of Manini‘ōwali and Kūki‘o 2, which includes a coastal strip 1000 feet wide paralleling the shoreline, backed by the private development of Kūki‘o (Fig. 1 and 2).



**FIG. 1. Location of the project at the northern portion of Kekaha Kai State Park (here indicated by the former name of Kona Coast SP) in the *ahupua'a* of Manini'owali and Kūki'o 2. The park entry road from HWY. 19 runs *makai* and leads to Kua Bay (USGS 1996, Makalawena Quad).**



**FIG. 2.** Map of Kekaha Kai State Park with the Manini'owali section to the north encompassing the ahupua'a of Awake'e, Manini'owali and Kūki'o 2.

Contiguous with this coastal strip is all of the *ahupua'a* of Awake'e *makai* of Queen Ka'ahumanu Highway. The Manini'ōwali (Kua Bay) Section is delineated by the Queen Ka'ahumanu Highway and the private residential development of Kūki'o to the east, the shoreline to the west, the boundary with the *ahupua'a* of Kūki'o 1 to the north, and the *ahupua'a* of Makalawena to the south. The discontinuous Mahai'ula Section of Kekaha Kai State Park is located to the south of Makalawena (Fig. 1 and 2).

The Makalawena property separating the park into two sections is owned by Kamehameha Schools. The Project area is within Tax Map Key (3) 7-2-05:009 (Fig. 3). Much of the Manini'ōwali section of the park consists of basalt lava having erupted from Mt. Hualālai. "Most of these were erupted 3,000 - 5,000 years ago. Older lavas are found at the southern edge of Awake'e *ahupua'a*, where there is a remnant of a 5,000 - 10,000 year old flow, and at Pu'u Kuili, where the cinder cone and the lavas immediately *makai* of it are more than 10,000 years old" (Dye et al. 2002:3). The project area is relatively flat, with gently sloping *pāhoehoe* and 'a'ā lavas. Soil development in this region is relatively non-existent. A large cinder cone named Pu'u Kuili is located in the middle of the Kua Bay section of the park along the border of the *ahupua'a* of Awake'e and Manini'ōwali. Donham notes this area as being cinder land, which "exhibits soil development from the crest to the lower slopes of the Puu Kuili cinder cone. Elevation within this soil zone ranges from 10 ft to 342 ft, within a relatively short distance of 490 m. The upper slopes of Pu'u Kuili (above 200 ft) are quite steep and are subject to considerable erosion, which has deposited a relatively thick mantel of reddish-brown soil along the west-facing lower slopes" (Donham 1987:5).

However, sand, gravel, and boulder beaches have formed in pockets along the coastline within the Manini'ōwali Section of the park. Kua Bay itself is a nicely developed sand beach with aqua blue colored water. This beach fronts the whole of the project area. Just offshore, coral reef can be found to the north and to the south of Kua Bay, with the interior of the bay being sand.

Due to the recent nature of the lava flows, which left little to no soil deposits, the vegetation in the area is very limited and includes native and introduced landscaping plants. The lava flows in the area contain very sparse pioneer vegetation communities, dominated by exotic fountain grass. A narrow band of strand vegetation exists along the shoreline at the back of the sand beach, which composes the Manini'ōwali Section of the park. Vegetation found in these areas includes: *kiawe* (*Prosopis pallida*), beach heliotrope (*Tournefortia argentea*), *milo* (*Thespesia populnea*), *kou* (*Cordia subcordata*), *naupaka* (*Scaevola sericea*), *niu* (*Cocos nucifera*) and *pohuehue* (*Ipomoea pes-caprae*), with *kiawe* being the dominant species. A native sedge famous for its use in woven mats, *makaloa* (*Cyperus Laevigatus*), grows within and around the margin of the anchialine pond at Kua Bay. This pond was noted as being partially filled in by a bulldozer in the mid-late 1990's (Dye et. al. 2002:9).

The climate of the area is characterized as being hot and dry, with little to no rainfall. Rainfall in this region averages less than 30 inches per year, although some fresh water makes its way to the shoreline from the uplands by flowing through underground through lava tubes. Dye stated, "there are no steams in the project area, but springs are found at places along the coast, most notably at Laekikaua, just north of the project area, where the water is potable" (Springer 1992, as referenced in Dye et. al. 2002:9).



FIG. 3. Tax Map Key (3) 7-2-05: 009, showing the northern boundaries for the Manini'owali section of Kekaha Kai State Park and the approximate project area outlined in red. NOTE: The current alignment of the park entry road is not shown on this map.

Important natural features of the coastal area in this region are the anchialine pools/ ponds. These pools/ponds can be found in three distinct areas within the Kua Bay Section of the park. Dye stated that “the largest of these is at the south end of Awake‘e, where a cluster of about 35 ponds is found in an ‘a‘ā flow. At Manini‘ōwali (Kua Bay) is a small, brackish pond,” and “a small, wash-basin sized pond at the toe of the ‘a‘ā flow at Kākapa” (Dye et. al. 2002:9). These slightly brackish pools are fed by underground streams and provide a valuable source of fresh water to this region. These pools contain important biological and cultural resources. They support native species such as the ‘ōpae‘ula (*Halocaridina rubra*) and provide a habitat for the endangered black-necked stilt, *ae‘o* (*Himantopus mexicanus knudseni*). These anchialine pools would have been an important source of drinking and irrigation water in this dry and arid region.

## **Project Description**

The park entry road for the Manini‘ōwali Section runs *makai* from Ka‘ahumanu Highway towards the shoreline. The road then turns towards the north, heading inland from the shoreline to a small parking lot at Kua Bay. This paved road was constructed in late 2005, and leads to a round-about, where there is a paved parking lot, comfort station, and an outdoor shower.

Improvements are proposed in one location on the *makai* side of the round-about along the existing walkway to the beach. This portion of the project area has been previously disturbed by bulldozing and grading associated with the previous construction of the current concrete walkway, outdoor shower, and a stone retaining wall. Improvements to this area will include the addition of a new outdoor shower, two new ADA picnic tables, and the construction of a new stairway (Figures 4 and 5).

- 1) For the outdoor shower, improvements will include the construction of a 12 ft x 12 ft x 4 inch thick concrete slab, water piping, a 7 ft high pipe column with grab bars, and 4 showerheads. See Photo 1 for its current location.
- 2) For the ADA Picnic tables, improvements will include the construction of two new 7.5 ft x 5.5 ft wood or Trex plastic picnic tables on two 16 ft x 12 ft x 4 inch concrete slabs. See Photo 2 for its current location.
- 3) For the new stairway, improvements will include the demolition of the existing stone/ concrete ramp, and the construction of an 11 ft x 8 ft concrete step area with landings and handrails (over the existing demolished ramp). See Photos 3 & 4 for its current location.

## **Historical Background**

### *Kekaha waiole o na Kona*

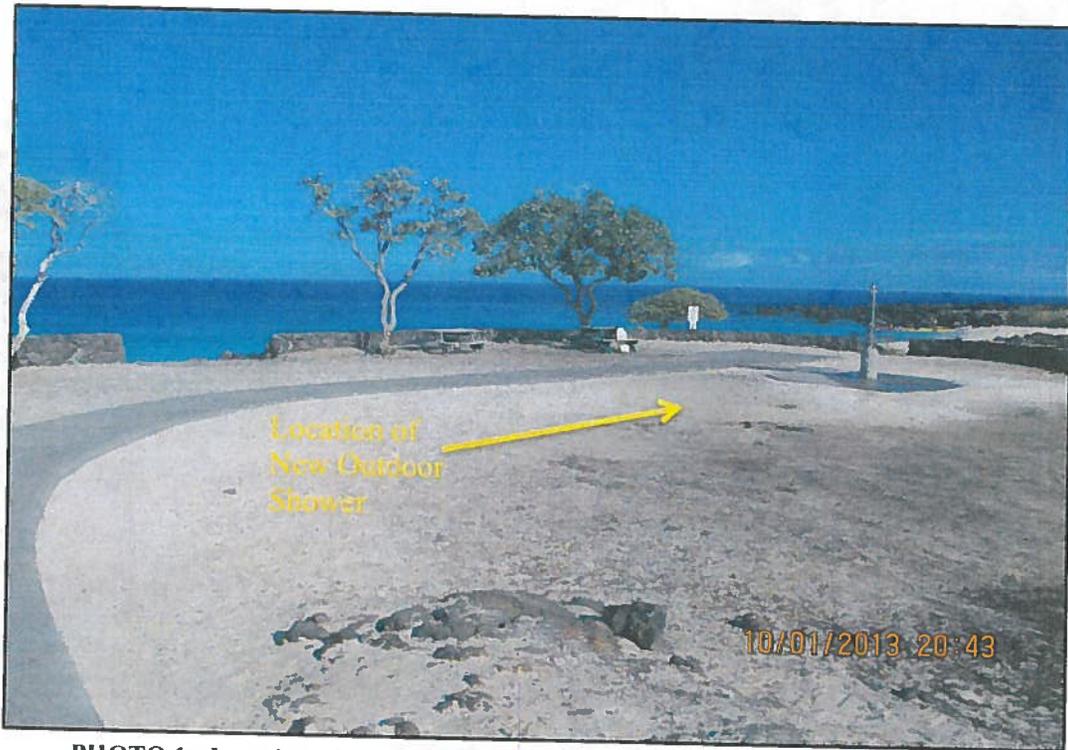
Waterless Kekaha of the Kona district

Kekaha in Kona, Hawaii, is known for its scarcity of water but is dearly loved by its inhabitants [Pukui 1983, #1716].

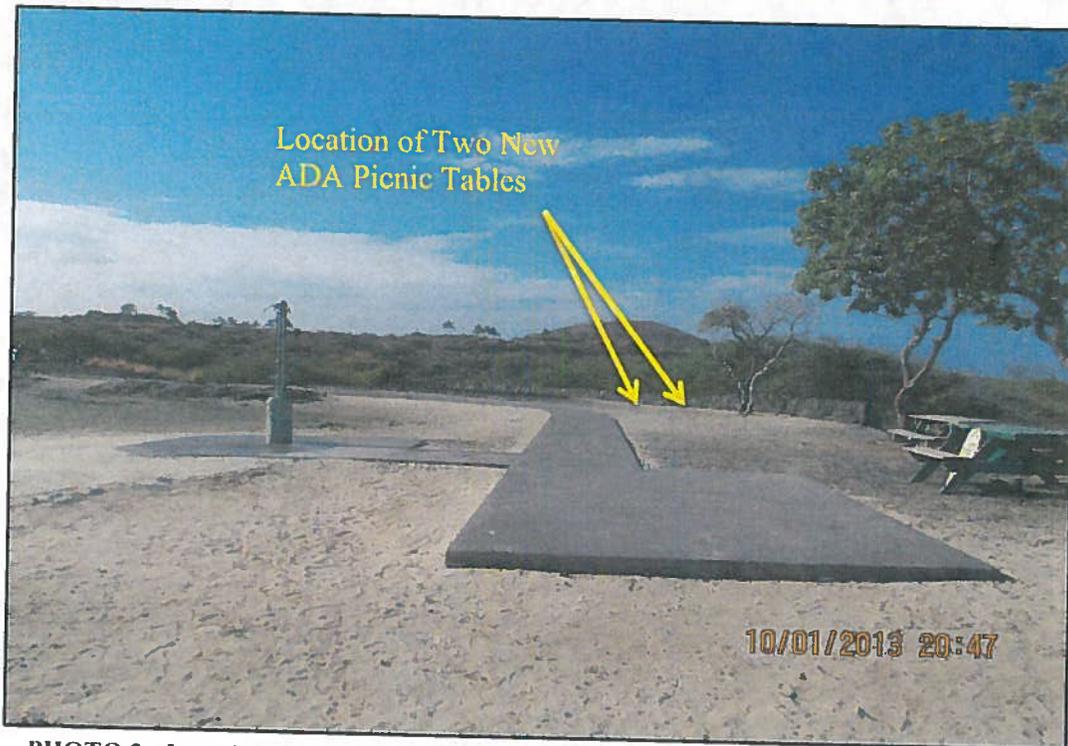


FIG. 4. Existing walkway, Park facilities, and proposed construction area highlighted in yellow.





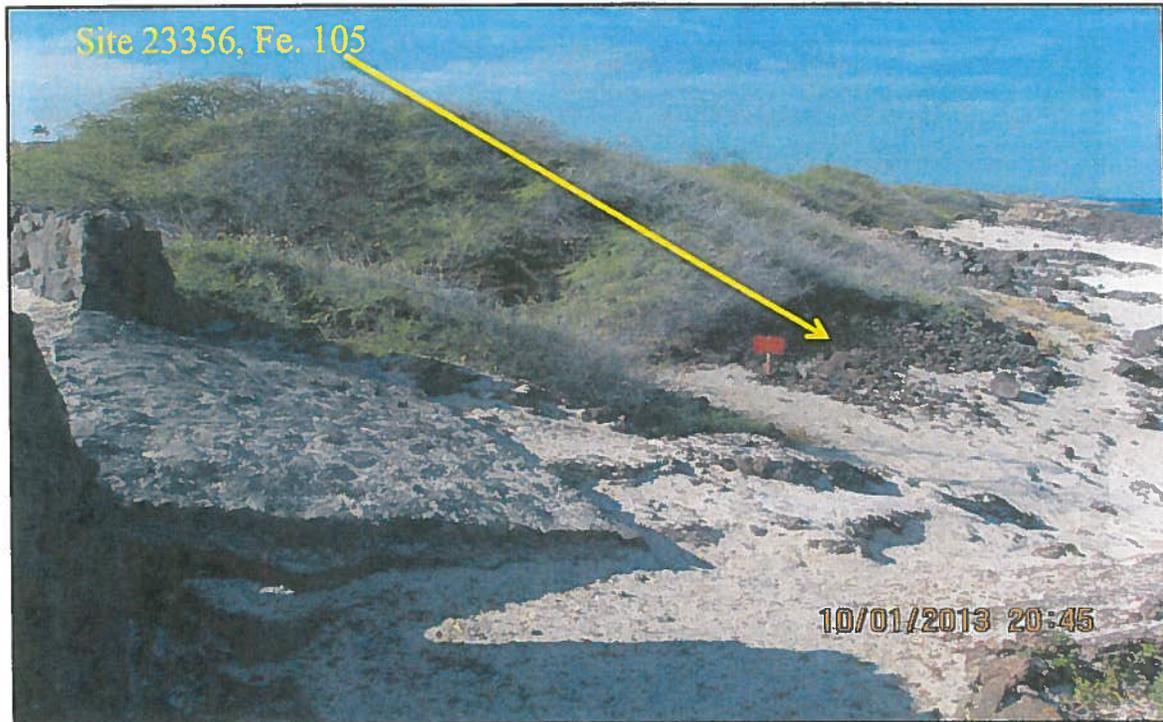
**PHOTO 1:** Location of the new outdoor shower on the *mauka* side of the existing walkway, view to the NW.



**PHOTO 2:** Location of the two new ADA picnic tables on the *makai* side of the walkway, view to the S.



**PHOTO 3:** Existing stone/ concrete ramp to be demolished and new stairway to be constructed in its place, view to the E.



**PHOTO 4:** Existing stone/ concrete ramp to be demolished, and new stairway to be constructed in its place, view to the S. NOTE: SIHP Site 23356, Feature 105 in the background.

Captain Vancouver composed the earliest written historical account of the Kekaha Kai region in 1794. An excerpt from his journal reads:

... the adjacent shores were uninteresting, being chiefly composed of volcanic matter, and producing only a few detached groves of cocoa nut trees, with the appearance of little cultivation, and very few inhabitants [Vancouver 1801, Vol. 3: 62].

The coconut trees seen by Vancouver were likely clustered around the anchialine pools found along this shoreline, where habitation was centered. While Vancouver noted little cultivation, the arid nature of the area would have precluded the growing of crops such as *kalo* (taro). Sweet potatoes and other crops raised in lava flows were often cultivated in mulched pits which would not have been easily visible from a passing ship. Handy corroborated this evidence:

Wherever a little soil could be heaped together along the dry lava coast of North Kona, a few sweet potatoes were planted by fisherman at such places as Honokohau, Mahaiula, Makalawena, Kaupulehu, Kiholo, Keawaiki and Kapalaoa [Handy 1940:163].

John Papa Ii related a voyage he took as a young boy (circa 1812) in a ship bound for Kailua along this shoreline:

... the next day the ship arrived outside of Kaelehuluhulu, where the fleet for aku fishing had been since the early morning hours. The sustenance of those lands was fish.

... soon the fishing canoes from Kawaihae, the Kaha Lands and Ooma, drew close to the ship to trade for the pa'i'ai (hard poi) carried on board, and shortly a great quantity of aku lay silvery-hued on the deck. The fishes were cut into pieces and mashed; and all those on board fell to and ate, the women by themselves. [Ii 1959:109-110]

The missionary Reverend William Ellis travelled along this coastline in 1823, and described coastal settlements at Kapalaoa, Wainanalii, and Kiholo. His description is the most detailed early account of this region, but he did not convey any information about the project area between Kiholo and Kailua-Kona.

The shoreline at Kua Bay contains evidence of tsunami damage. This phenomenon was recorded in the early nineteenth century by the missionary Cochran Forbes:

On the 7<sup>th</sup>. [November, 1837] about 7 ocl<sup>k</sup> at night the sea at this place receded a number of feet, leaving the shore dry far below low water mark. The phenomenon produced greate [sic] excitement among the natives & fish. The cause was unknown as we had no earthquake nor any sensible cause. The evening was perfectly calm & pleasant. The moon was in her first quarter. At Kekaha where the shore is low the return of the sea, tho' very gentle swelled far above high water mark and swept away some houses, tho'

no lives were lost. At Hilo the return of the sea was very violent and rose high above high water mark and did great damage as many of the people there lived on the shore. Eleven or twelve souls were suddenly swept into eternity and multitudes of others carried, by the receding waves far, from land but effected a return & some were picked up by the boat of a whaleship lying at anchor [Forbes 1984:59].

Kelly (1973), provided additional evidence relating to the tsunami damage in this area, and stated that all the houses in the village of Makalawena, just south of Kua Bay, were wiped out in the devastating tsunami of 1946. There is no firsthand account of the effect of that tsunami on Kua Bay but apparently, the houses at Mahai'ula, just south of Makalawena, survived with little or no damage and are still standing today (Carpenter, Major, Yent 1998:11).

### **Previous Archaeological Investigations**

Archaeological surveys in the Manini'ōwali/Kūki'o 2 *Ahupua'a* were conducted as early as 1930, with a more recent archaeological inventory survey of the area being conducted by T. S. Dye & Colleagues in 2002 (Dye et al. 2002). The most recent inventory survey area encompassed all proposed development areas in the northern parcel of Kekaha Kai State Park. This survey included the areas of Awake'e, Kahoi'awa, Kua and Kakapa Bays.

Previous archaeological work in the Manini'ōwali/Kūki'o 2 area included the initial survey by Reinecke (1930), a limited survey and excavation by Cordy (1981), a cursory survey by Soehren (1982a,b), and a site inspection by Cordy (1986). A series of archaeological surveys were initiated about 15 years ago, as several subsequent landowners anticipated developing luxury homesites in this area. A reconnaissance survey of the Manini'ōwali/Kūki'o 2 area *makai* of the highway was conducted by Thegn Ladefoged in 1989. An inventory survey of the private parcel *mauka* of the park area in Manini'ōwali was conducted by the Bishop Museum (Pantaleo et al. 1992) as a follow-up to a large reconnaissance survey which encompassed the coastal area as well (Sinoto and Pantaleo 1990). The development of this area for luxury homes is currently ongoing in the area of Manini'ōwali/Kūki'o 2, which is located directly inland to the east of the State Parks parcel. Archaeological data recovery work on the privately owned *mauka* parcel, presently under development by W. B. Manini'ōwali, was performed by T. S. Dye & Colleagues in 2001. The coastal area of Awake'e was the subject of a through archaeological reconnaissance survey in 1987 (Donham 1987). All of the above work is summarized in detail in the archaeological inventory survey prepared for State Parks (Dye et al. 2002).

SIHP Site Number 50-10-18-23356 is located in the vicinity of the project area. This coastal habitation complex consists of nine feature clusters (A-I) as well as a number of outlying features behind the crescent of Manini'ōwali (Kua Bay), including over 300 total features. Site 23356 feature cluster E consists of 15 individual features, including features 92-105, along with newly discovered feature 335, all of which are located in the project vicinity (Figures 6 and 7, and Table 1). Eight habitation features comprise of the majority of the features within cluster E, and are significant for their potential to yield information with further research. The well along with five pit quarry features contained within cluster E are significant as well, as they possess an excellent example of a site type.



**TABLE 1:  
Archaeological Sites Recorded in the Vicinity of the Project Area<sup>1</sup>**

Site No. 23356 Feature #	Site Type	Location	Potential Impacts	Significance
92	Cave Habitation	On 'a'ā lava, east of entry road, 27 m to the S of the project area.	Low due to distance from project area.	D, E
93	Cave Habitation	On 'a'ā lava, east of entry road, 36 m to the S of the project area.	Low due to distance from project area.	D, E
94	Overhang Shelter Habitation	On 'a'ā lava, east of entry road, 27 m to the SW of the project area.	Low due to distance from project area.	D, E
95	C-Shape Enclosure Habitation	On 'a'ā lava, east of entry road, 30 m to the SW of the project area.	Low due to distance from project area.	C, D, E
96	Pit Quarry	On 'a'ā lava, east of entry road, 22.5 m to the SW of the project area.	Low due to distance from project area.	C, D, E
97	Pit Quarry	On 'a'ā lava, east of entry road, 24 m to the SW of the project area.	Low due to distance from project area.	C, D, E
98	Pit Quarry?	On 'a'ā lava, east of entry road, 21 m to the SW of the project area.	Low due to distance from project area.	C, D, E
99	Pit Quarry?	On 'a'ā lava, east of entry road, 19.5 m to the SW of the project area.	Low due to distance from project area.	C, D, E
100	Overhang Shelter Habitation	On 'a'ā lava, east of entry road, 18 m to the SW of the project area.	Low due to distance from project area, and vegetation cover.	D, E
101	Pit Quarry?	On 'a'ā lava, east of entry road, 29 m to the SW of the project area.	Low due to distance from project area.	C, D, E
102	Enclosure Well?	On the edge of "a'ā lava and the sand beach, 30 m to the W of the project area.	Low due to distance from project area, and vegetation cover.	C, D, E
103	Terrace Habitation	On the edge of "a'ā lava and the sand beach, 31 m to the W of the project area.	Low due to distance from project area, and vegetation cover.	C, D, E
104	Enclosure Habitation	Back of sandy beach, 24 m to the W of project area.	Low due to distance from project area.	C, D, E
105	Platform Habitation	Back of sandy beach, 9.5 m to the W of project area.	High due to distance from project area.	C, D, E
335	Terrace Unknown?	On 'a'ā lava, 4 m N/ NW of project area.	High due to distance from project area.	D, E

Significance Criteria:

- <sup>1</sup> A - Association with events that have made an important contribution to broad patterns of history.  
 B - Association with famous people.  
 C - An excellent example of a site type.  
 D - Have yielded or likely to yield information important for research on prehistory or history.  
 E - Traditional cultural significance to an ethnic group.

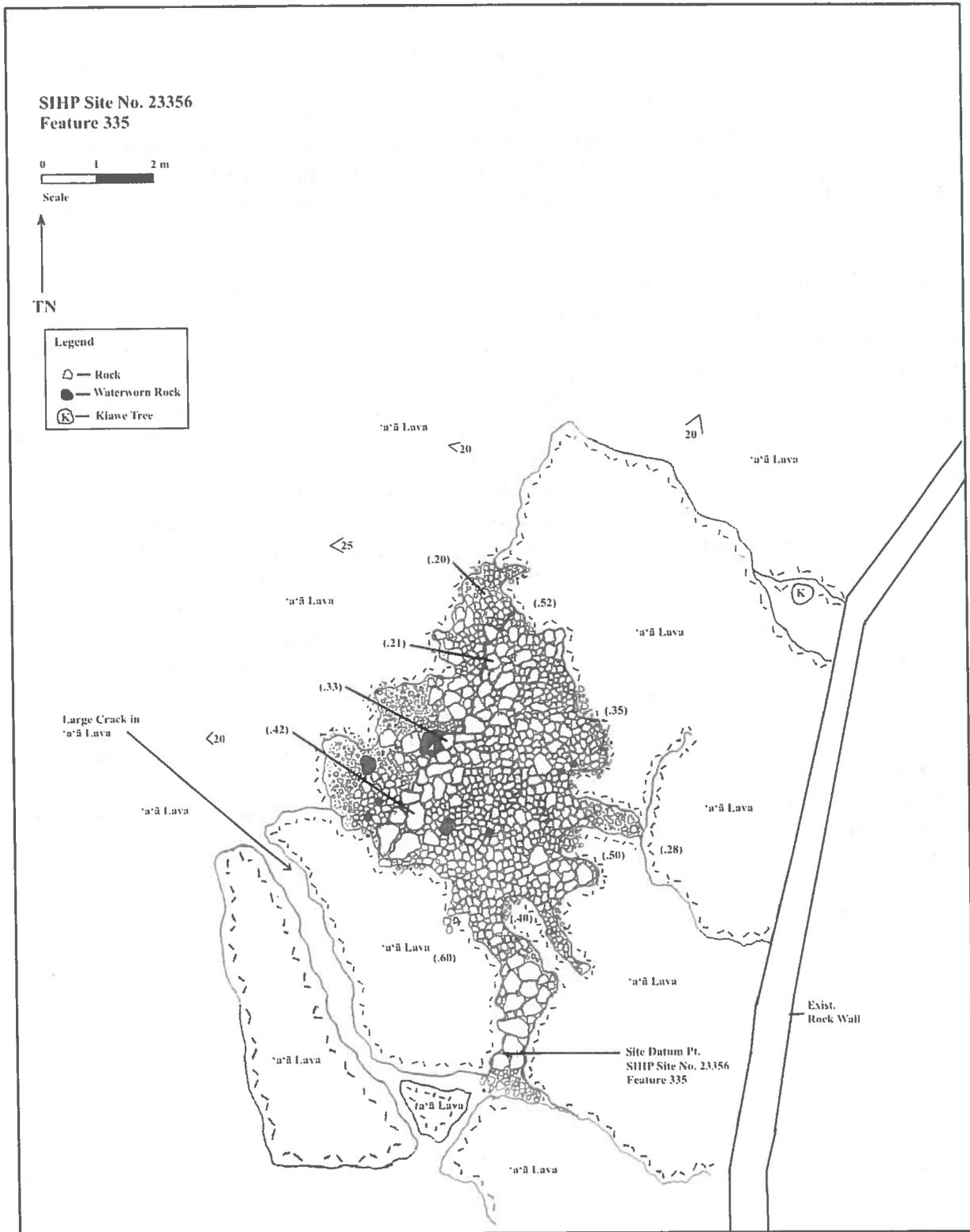
Compiled from Dye et. al. 2002.

## Project Area Inspection

State Parks archaeologists Tracy Tam Sing and Alan Carpenter inspected the project area on October 7, 2013. A 100% pedestrian survey of the project area was conducted. During the survey, SIHP Site 23356 Features 92-105 were located near the project area. Also a newly discovered feature, 335, was located 4m to the north of the existing ramp of the project area (Fig. 6).

**Site 23356 Feature 335** is a terrace (Fig. 8, Photos 5 and 6). This terrace is located on an 'a'ā lava shelf overlooking the sand beach of Kua Bay. It is situated 8m to the NE of Feature 105, and 2m to the west of the modern retaining stone wall of the project area (Fig. 9). This terrace is constructed from small to large cobbles of localized 'a'ā basalt. The front face of the terrace faces the beach towards the NW. This terrace appears to have been built up in a small natural swale of the lava. The front face of the terrace is one to two courses in height, measures 5.3m in length SW-NE by 1.0m in width E-W, and has an average height of 33cm. Much of the front face of the terrace is collapsed to the NW. The interior of the terrace is filled in with small to large 'a'ā lava cobbles, and is fairly flat and level, with a few small to large waterworn cobbles scattered about. The interior measurements of the terrace are 7.8m in length N-S by 3.0m in width NW-SE. The rear portion of the terrace appears to have been constructed to fill in large lava cracks, which are located in the southern and eastern area of the feature. The terrace is presently in fair condition. Its function is unknown. Feature 335 is significant as it may have the potential to yield important information in regards to the prehistory or history of Hawai'i. It may also be of traditional cultural significance to an ethnic group.

The project area was previously bulldozed, filled in, and leveled during prior park improvements involving the existing retaining concrete/stone wall and outdoor shower (Fig. 4). The location of the proposed improvements addressed within this letter directly corresponds to the previously disturbed areas. Therefore, no further impact to the lava within the project area is anticipated.



**FIG. 8. Map of SIHP Site 50-10-18-23356 Feature 335, a terrace. NOTE: Modern wall of previous park improvement project to the east of the feature.**



**PHOTO 5: SIHP Site 50-10-18-23356 Feature 335, front face of terrace, view to the east.**



**PHOTO 6: SIHP Site 50-10-18-23356 Feature 335, overall terrace, view to the north.**

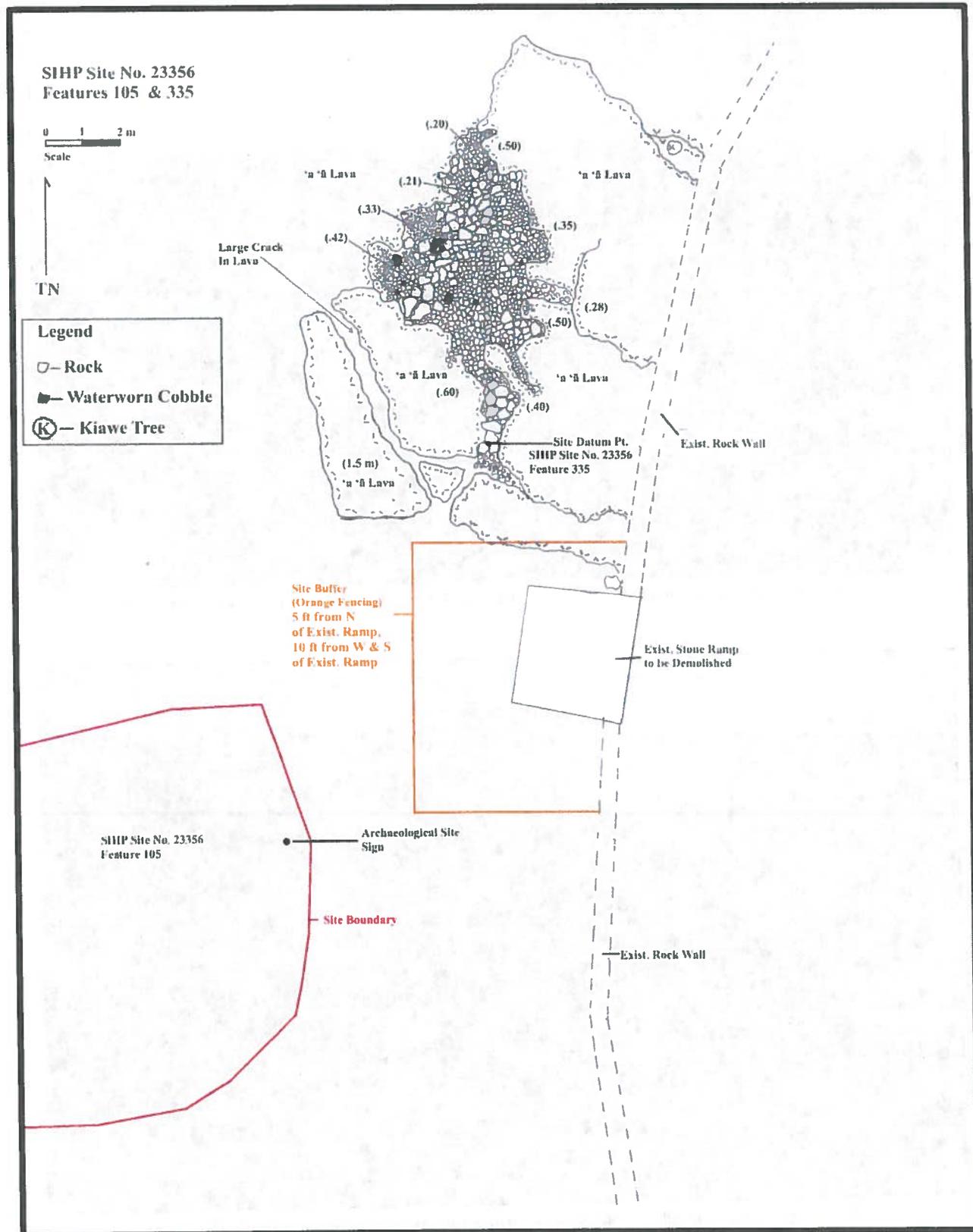


FIG. 9: SIHP Site 23356 Features 105 and 335, with site buffer (orange fencing) highlighted in orange.  
 NOTE: Buffer will be placed 5 ft from the N, and 10 ft from the S, & W edges of the existing ramp.

## Construction Buffers

The site inspection determined that the previously identified archaeological Site 23356 Feature 105, and newly discovered feature, 335, are located near the project area. Features 92-104 are buffered by the existing stone wall, and natural topography (Figure 6).

In State Parks' 2004 Archaeological Preservation Plan for previous improvements in the Kua Bay area of Kekaha Kai State Park, all archaeological sites and features within or near construction activities were flagged, and site buffers consisting of orange fencing were placed at the limits of construction activities (Carpenter 2004). A similar methodology, illustrated in Figure 9, will be used to provide Site 23356, Features 105 and 335 with the maximum protective buffer given the construction requirements and circumstances. Since the construction will essentially be confined to the existing stone/concrete ramp, which leads to the beach, there is no need to completely fence around all features and feature clusters, but simply around the construction limits of the ramp, which is approximately 5 ft (1.5 m) to the N, and 10 ft (3 m) to the S, and W of the existing ramp (Figure 9).

Orange fencing will be provided by the construction crew. This buffer is to be put in place by the construction crew under the supervision of the State Parks archaeologist prior to the demolition of the ramp. It is to stay in place until the demolition of the ramp has been completed, at which time it may be taken down if required for construction of the replacement stairway.

It is important to remember that the improvements to be constructed are minimal, and have been specifically planned to minimize their impact on the natural environment of the park. Therefore, the construction buffers should be no larger than necessary to adequately facilitate construction work. The placement of fencing barriers completely around archaeological features would, in fact, impact the natural landscape (through the chiseling out of lava for stake placement, etc.). In addition, this would also visually mar the landscape for park visitors, who will continue to utilize the park during the construction phase. These types of buffers may also draw unnecessary attention to archaeological features prior to and during construction activities. The Division of State Parks would like to keep these types of impacts to a minimum.

## Oversight/Inadvertent Discoveries

Given the previous construction disturbance to the area and the limited scope of the project, we do not anticipate any impacts to known archaeological features through this undertaking. While formal archaeological monitoring during construction is not being proposed, some oversight by the State Parks Archaeologist is warranted to ensure that all work is confined to the project area and ground disturbing activities are restricted to previously disturbed areas.

The State Parks archaeologist will work with the contractor on delineating staging areas and areas permitted for the movement of machinery in the park. The known historic properties in the vicinity will be pointed out to the contractor who will be instructed to keep all machinery and stockpiling of materials to previously disturbed areas, such as the area *mauka* of the existing retaining wall. If heavy equipment is used to remove the ramp all equipment will be instructed to stay to the east of the ramp/ retaining wall on previously disturbed ground and reach out with its extension arm to remove all ramp debris, and stockpile it on previously disturbed ground.

A State Parks archaeologist will be on-site prior to and during the demolition of the existing ramp, and during the construction phase of the stairway. This participation will convey the sensitive nature of cultural and landscape features to the construction crew, assure compliance with the established buffers and other aspects of the construction, and help to minimize ancillary damage to natural landscape features. The vast majority of the project area has been previously disturbed and filled in.

These facts do not preclude the inadvertent discovery of previously un-located features, including burials, however, the possibility is very unlikely. In the event that subsurface features, cultural deposits, or human remains are discovered during construction activities, all procedures outlined in HAR 13-274-12 or HAR 13-300-40 relating to inadvertent discoveries will be followed. This obligation shall be conveyed to the construction crew prior to the commencement of work activities by the State Parks archaeologist.

### **Consultation**

On November 21, 2013, consultation in regards to the project was held with members of *Hui Laulima o Kekaha Kai* at Kua Bay. Christine Bean, Bobby Camara, Hannah Kihalani Springer, and Nicole Lui were consulted with. All of the aforementioned individuals have extensive ties to the area. The input of these knowledgeable persons has been valuable throughout the planning process of the proposed project. Those consulted concur with the proposed project activities, and were pleased to know of the improvements and protective measures pertaining to the archaeological features and the landscape within the project area.

### **Conclusion, Request for Determination and Concurrence to Proceed**

The Division of State Parks Archaeology Program believes that there will be “no historic properties affected” by the construction of the proposed park improvements, which include a new outdoor shower, two new ADA picnic tables, and a new stairway to the beach. All archaeological and historical evidence to date indicates that the likelihood of encountering archaeological surface and subsurface features and deposits within the project area, while indeed possible, is slim to none.

As a precautionary measure prior to and during the demolition of the existing ramp, and during the construction phase of the stairway, the State Parks archaeologist will assist the construction crew with the installation of the construction limit buffers and will observe all work conducted. We do not, however, expect historic properties to be present based on past ground disturbance in the project area. On the remote chance that subsurface features, cultural deposits, or human remains are uncovered by ground disturbing activities, the contractor will be instructed to stop all work in the vicinity of the find and State Parks will respond via the appropriate means under either HAR 13-274-12 or HAR 13-300-40.

We thank you in advance for your review of our revised determination of “no historic properties affected” and our request for concurrence to proceed with the proposed park improvements at the Kua Bay Section of Kekaha Kai State Park. If you have any questions please contact Tracy Tam Sing, Hawai‘i Island Parks Archaeologist, at (808) 313-0858 or [Tracy.l.tamsing@hawaii.gov](mailto:Tracy.l.tamsing@hawaii.gov).

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NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

WILLIAM J. AILA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCES MANAGEMENT

JESSE K. SOU'KI  
FIRST DEPUTY

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DEPUTY DIRECTOR - WATER

WATER RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCES MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

April 19, 2014

MEMORANDUM

To: Dan Quinn  
Division of State Parks  
PO BOX 621  
Honolulu, HI 96809

LOG NO: 2014.1589  
DOC NO: 1404MV12  
Archaeology

FROM: Mike Vitousek, Lead Archaeologist Hawaii Island Section

Handwritten signature of Mike Vitousek in blue ink.

SUBJECT: **Chapter 6E-8 and Historic Preservation Review -  
Revised Request for Letter of Determination  
Walkway and Shower Improvements Manini'owali Section of Kekaha Kai State Park  
Manini'owali and Kukio 2 Ahupua'a, North Kona District, Island of Hawai'i  
TMK (3) 7-2-004:009 (portion)**

Thank you for the opportunity to review the subject project that was originally received by our office on January 16, 2014. According to the project description, this project involves the construction of a new shower, two new ADA compliant picnic tables, demolition of the existing ramp to the beach and construction of a new stairway.

A review of our records indicates that this area was subjected to an archaeological inventory survey by Dye et al. (2002). This AIS recorded multiple features of SIHP 50-10-18-23356 in the vicinity of this project area. In addition, a previously unrecorded feature of SIHP 23356, a terrace designated feature 335, was identified during the identification phase of this project review. The construction of the shower and picnic tables will take place within a previously disturbed area that is unlikely to contain historic resources. In contrast, the construction of the stairs will extend from the previously disturbed area into the undisturbed location that contains features of SIHP 23356. In order to avoid these sites during construction State Parks proposes to erect temporary protective fencing around the project area rather than around the sites.

In our previous review, SHPD requested that the that the buffer from construction is reduced from 10 feet to five feet on the northern side of the project area to protect the newly identified feature 335 of SIHP 23356. We also request that all heavy machinery is confined to the previously disturbed areas in order to reduce impacts on any potential subsurface deposits in the beach sand (LOG NO: 2014.0214, DOC NO: 1401MV22). The requested revisions to the project have been adequately addressed, and we now believe that that **no historic properties will be affected** by the proposed project. We agree that the project should be supervised by State Parks archaeologists and any inadvertent discoveries will follow the guidelines of either HAR 13-284-12 or HAR 13-300-40.

Please contact Mike Vitousek at (808) 652-1510 or [Michael.Vitousek@hawaii.gov](mailto:Michael.Vitousek@hawaii.gov) for any questions or concerns regarding this letter.

CC: [Tracy.L.TamSing@hawaii.gov](mailto:Tracy.L.TamSing@hawaii.gov)

213-008E

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

May 13, 2014

TO: Alan Downer, Administrator  
Historic Preservation Division

ATTN: Mike Vitousek, Lead Archaeologist Hawaii Island Section

FROM: Daniel Quinn, State Parks Administrator

SUBJECT: §6E-8, HRS, Compliance - Request for Determination of "No Historic Properties Affected" for Park Improvements, Mahai'ula Section, Kekaha Kai State Park  
Ahupua'a of Kaulana, North Kona, Island of Hawai'i TMK: (3) 7-2-05: 003

RECEIVED

JUL 25 2014

Okahara and Associates, Inc.  
HILO OFFICE

The Division of State Parks proposes park improvements to include the construction of a new storage/water tank building, a new ADA picnic table with a concrete pad/ walkway, 2 new BBQ pits, and will also include the refurbishment of (3) existing BBQ pits at the Mahai'ula Section of Kekaha Kai State Park, North Kona, Hawai'i Island. The 60' x 20' storage/water tank building will be constructed between the two existing comfort stations in the parking lot near the *makai* end of the park entry road. The construction of the new ADA picnic table, a 12' x 16' concrete pad/ walkway, 2 new BBQ pits along with the refurbishment of the 3 existing BBQ pits will occur along the beach fronting the parking lot.

In accordance with §13-275-3 and §13-275-5(b)(2), HAR, we are requesting a "no historic properties affected" determination for this project and concurrence to proceed. We believe that the probability of encountering historic properties within the project area is low based on a recent pedestrian survey of 100% of the project area, historic accounts, previous archaeological studies in the region, the history of ground disturbance within the project area, and recent archaeological testing.

### Project Area

Kekaha Kai State Park, formerly known as Kona Coast State Park, is a 1,642.5-acre park situated on the west (*makai*) side of Queen Ka'ahumanu Highway (Hwy. 19) and about 2.6 miles north of Keahole Airport (Figures 1 and 2). The project area is located in *makai* portion of the Mahai'ula Section of Kekaha Kai State Park (SP) in the *ahupua'a* of Kaulana, district of North Kona. The southern park boundary follows the Kaulana-'Ohiki boundary at the *mauka* end, but then angles back towards Mahai'ula, encompassing only a very small portion of the *makai* extent of Kaulana. The Department of Transportation Airports Division retained a portion of the coastline at Kaulana and Mahai'ula for the flight path to the Keahole Airport, which accounts for this configuration. The Mahai'ula Section of the park is delineated by Queen Ka'ahumanu Highway

to the east, the shoreline to the west, and the *ahupua'a* boundary of Makalawena to the north. The Manini'ōwali Section of Kekaha Kai State Park is located to the north of Makalawena. The Makalawena property separating the park into two sections is owned by Kamehameha Schools. The project area is within Tax Map Key (3) 7-2-05: 002 and por. 003 (Fig. 3).



FIG. 1. Location of the project area at the southern boundary of the park in the *ahupua'a* of Kaulana. The park entry road from Hwy. 19 runs *makai* leading to the gravel parking lot at Mahai'ula Bay (USGS 1996, Makalawena Quad.).

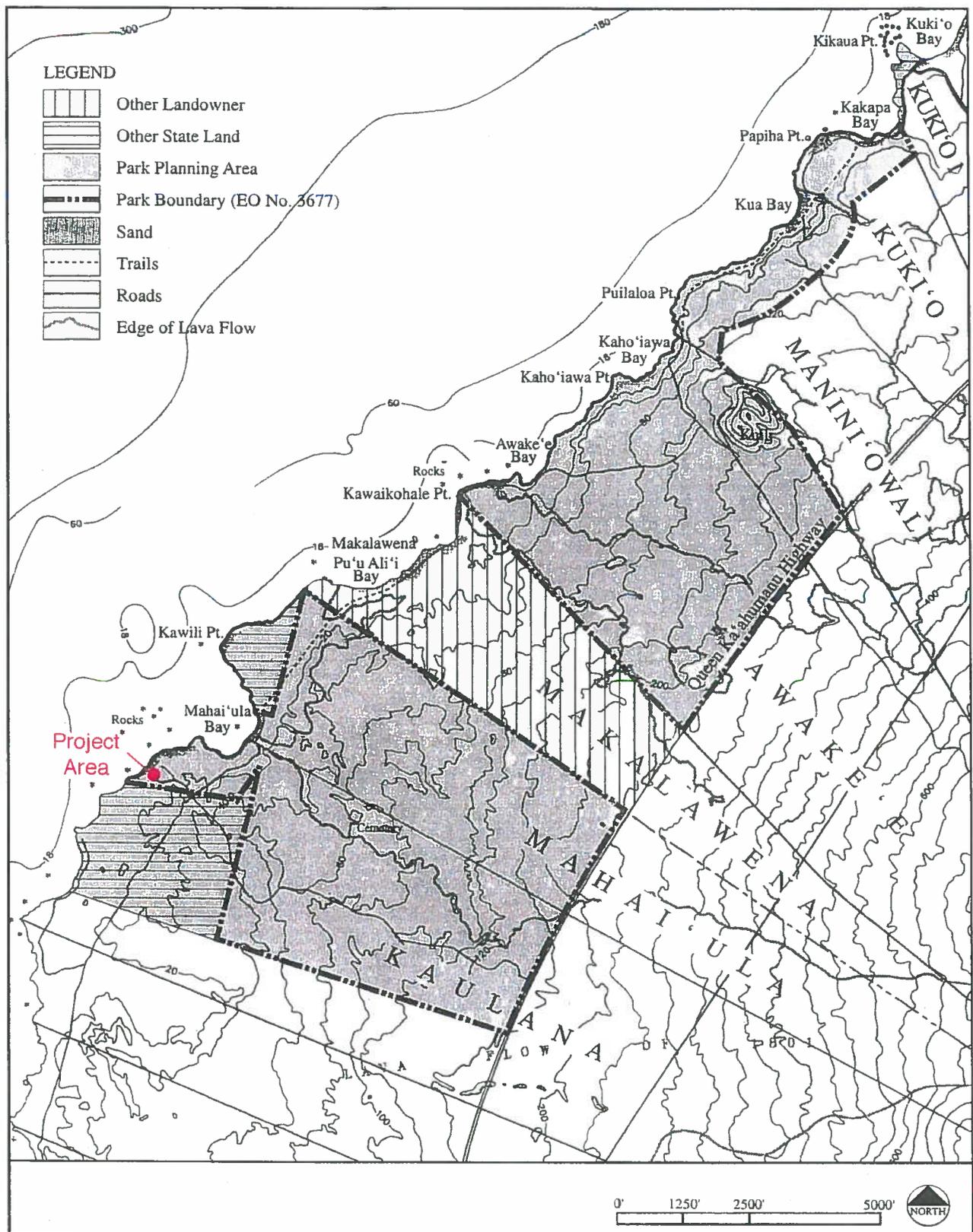


FIG. 2. Map of Kekaha Kai State Park with the Mahai'ula Section to the south and encompassing the *ahupua'a* of Kaulana and Mahai'ula. DOT Airports retained the hatched portions of the coastline in the *ahupua'a* of Kaulana and Mahai'ula.



Much of the Mahai'ula Section consists of the 1801 Hu'ehu'e Flow from Mt. Hualālai. This *pāhoehoe* lava flow was devastating, destroying fishponds and coastal settlements, as well as trails and undoubtedly upland features. The project area is relatively flat to gently sloping *pāhoehoe* lava. Soil development in this region is almost non-existent. However, sand, gravel, and boulder beaches have formed in pockets along the coastline. There are two nicely developed coralline sand beaches in the park - the crescent beach along Mahai'ula Bay and Ka'elehuluhulu just south of Mahai'ula. The two beaches are separated by a small expanse of *pāhoehoe* lava. Coral reef and a shallow bench of submerged lava flows front the whole of the project area just offshore.

Due to the recent nature of the lava flows, the vegetation in the area is very limited including native and introduced landscaping plants. The lava flows contain very sparse pioneer vegetation communities, dominated by exotic fountain grass. A narrow band of strand vegetation exists along the shoreline at the back of the coralline sand beach which composes Mahai'ula Bay, and in the area behind Ka'elehuluhulu Beach, just south of Mahai'ula. These vegetated strips, separated by a point of *pāhoehoe* lava, contain *kiawe* (*Prosopis pallida*), beach heliotrope (*Tournefortia argentea*), *milo* (*Thespesia populnea*), *kou* (*Cordia subcordata*), *naupaka* (*Scaevola sericea*) and *pōhuehue* (*Ipomoea pes-caprae*), with *kiawe* being the dominant species. In addition, coconut groves are situated at both ends of Mahai'ula Bay, and are associated with the historic occupation of the area. A native sedge famous for use in woven mats, known in Hawaiian as *makaloa* (*Cyperus laevigatus*), grows within and around the margin of the ponds at Ka'elehuluhulu Beach.

The climate of the area is characterized as being hot and dry. Rainfall in this region averages less than 30 inches per year, although some fresh water makes its way to the shoreline from the uplands by flowing underground through lava tubes.

An important natural feature of the coastal area in this region are the anchialine pools. These slightly brackish pools are fed by underground streams and provide a valuable source of fresh water to this region. These pools contain important biological and cultural resources. They support native species such as 'ōpae'ula (*Halocaridina rubra*) and provide habitat for the endangered black necked stilt (*ae'o*, *Himantopus mexicanus knudseni*). The anchialine pools would have been an important source of drinking and irrigation water in this dry and arid region.

### **Project Description**

The park entry road for the Mahai'ula Section of Kekaha Kai State Park runs *makai* from the Queen Ka'ahumanu Highway (Hwy. 19) to a small gravel parking area at Ka'elehuluhulu to the south of Mahai'ula Bay. This unimproved entry road tranverses over the 1801 *pāhoehoe* flow from Mt. Hualālai, and was initially constructed in the 1980s by the previous landowner for access to the shoreline. The entry road intersects a 4 wheel-drive road that runs parallel along the coastline from Keāhole to Makalawena, and then heads to the west, towards the beach and gravel parking lot. The section of 4-WD road in the park is used by vehicles for park maintenance and by park users accessing Mahai'ula Bay and Makalawena on foot. Most of these park users park their vehicles at the intersection of the two roads, and at the end of the road at the small gravel parking area at Ka'elehuluhulu.

Improvements are proposed at the end of the park entry road and the adjacent beach area. The new storage/water tank building is proposed between the two existing comfort stations locations. The new ADA picnic table, concrete pad/ walkway, and 2 new BBQ pits are along the beach fronting the parking lot to the west (Figures 4 and 5). The three existing BBQ pits proposed for refurbishment are located on the beach fronting the parking lot to the north (Figures 4 and 5). The project will also include spot repairing of four broken/missing segments of hand rails and the repainting all hand rails in the area.

- 1) For the new storage/water tank building, the area between the existing men's and women's comfort station buildings will be filled with gravel, compacted, and a concrete pad will be poured for the building's foundation. The northern side of the new building will be used for a 2,000-gallon water tank and the southern side will be used for storage (Photo 1).
- 2) For the new ADA compliant picnic table, concrete pad/walk way, and new BBQ pit, the area to the west of the existing ADA picnic table will be formed, filled with gravel (only to the extent of the pads edge), compacted, and a concrete pad will be poured for the picnic table. An ADA concrete walkway, approximately 1m wide by 4 inches thick, will be poured leading from the existing walkway to the southeast, to the new pad. The new BBQ pit will be installed next to the ADA pad to the north (Photos 2-4 ).
- 3) For the refurbishment of the three existing BBQ pits, this will include the replacement of deteriorated grills, and the patching of any damaged rock facing (Photos 5 and 6). All three existing BBQ pits are located on the beach fronting the parking lot to the north.

All work, with the exception of the new ADA picnic table, will occur in previously disturbed areas. Excavation for the storage/water tank structure will be within the 1801 lava flow that was previously disturbed when the comfort stations were constructed. The majority of the new ADA picnic table, concrete pad, and walkway will also be placed on top of the 1801 lava flow, with portions of it being covered by shallow beach sand. Precautions will be taken to avoid any impacts to the anchialine pond located *makai* of the comfort station.

## Historical Background

### *Kekaha waiole o na Kona*

Waterless Kekaha of the Kona district

Kekaha in Kona, Hawai'i, is known for its scarcity of water but is dearly loved by its inhabitants (Pukui 1983, #1716).

The earliest historical account of this area was made in 1794 by Captain Vancouver who described the Kekaha area in his journal as follows:

... the adjacent shores were uninteresting, being chiefly composed of volcanic matter, and producing only a few detached groves of cocoa nut trees, with the appearance of little cultivation, and very few inhabitants. (Vancouver 1798, Vol. 3: 62)

The coconut trees seen by Vancouver were likely clustered around the anchialine pools found along this shoreline where habitation was centered. While Vancouver noted little cultivation, the arid nature of the area would have precluded the growing of crops such as *kalo* (taro).

Sweet potatoes *'uala* and other crops raised in lava flows were often cultivated in mulched pits, which would not have been easily visible from a passing ship. Further evidence for this fact comes from Handy who relates:

Wherever a little soil could be heaped together along the dry lava coast of North Kona, a few sweet potatoes were planted by fisherman at such places as Honokohau, Mahaiula, Makalawena, Kaupulehu, Kiholo, Keawaiki and Kapalaoa. (Handy 1940:163)

John Papa Ii relates a voyage he took as a young boy (circa 1812) in a ship bound for Kailua along this shoreline:

. . . The next day the ship arrived outside of Kaeleluluhulu, where the fleet for *aku* fishing had been since the early morning hours. The sustenance of those lands was fish.

. . . Soon the fishing canoes from Kawaihae, the Kaha Lands and Ooma, drew close to the ship to trade for the *pa'i'ai* (hard poi) carried on board, and shortly a great quantity of *aku* lay silvery-hued on the deck. The fishes were cut into pieces and mashed; and all those on board fell to and ate, the women by themselves. (Ii 1959:109-110)

The missionary Reverend William Ellis travelled along this coastline in 1823, and described coastal settlements at Kapalaoa, Wainanali'i, and Kīhōlo. His description is the most detailed early account of this region, but he does not convey any information about the project area between Kīhōlo and Kailua-Kona.

The Hawaiian historian Samuel Kamakau recounts events associated with this lava flow:

Another important event which occurred in the fourth year of Kamehameha's rule was the lava flow which started at Hu'ehu'e in North Kona and flowed to Mahai'ula, Ka'upulehua [sic], and Kiholo. The people believed that this earth-consuming flame came because of Pele's desire for *awa* fish from the fishponds of Kiholo and Ka'upulehu and *aku* fish from Ka'eleluluhulu; or because of her jealousy of Kamehameha's assuming wealth and honor for himself and giving her only those things which were worthless; or because of his refusing her the tabu breadfruit of Kameha'ikana which grew in the uplands of Huehue where the flow started.

The great fishpond known as Pa'aiea, was formerly located between Ka'eleluluhulu and 'O'oma, south of Keāhole Point. This pond is reputed to have been 3 miles long and 1.5 miles wide. This fishpond was also reported to be completely filled in by the 1801 lava flow. The small pond presently existing at the back of the sand beach at Ka'eleluluhulu is, in fact, a remnant of the great Pa'aiea Fishpond, according to John Ka'elemakule, a resident of Mahai'ula in the late 19<sup>th</sup>/early 20<sup>th</sup> century:

... In the church where Mr. Thurston held the prayer service [at Makalawena], long *koa* benches were placed along the walls, and in the center of the church, the *makaloa* sedge had been spread on the floor. The *makaloa* was obtained from what remained of the famous pond that was covered by the eruption. It was the pond Pa'aiea, a portion of which remains at Ka'eleluluhulu to this day. This is what remains of the great pond that was several miles long, but is now covered by the stone plain that spreads across Kekaha (Ka'elemakule 1928:4).

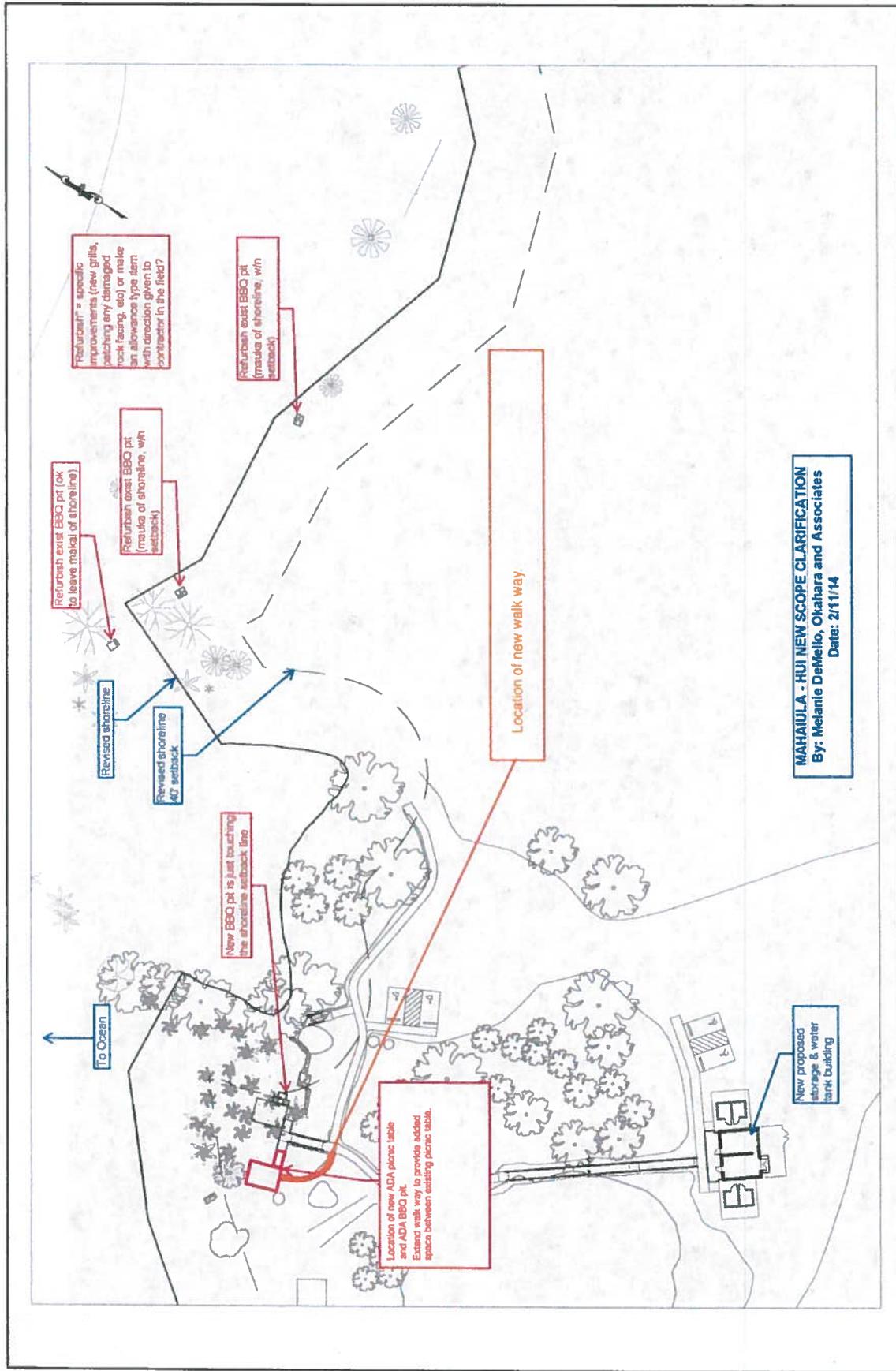


FIG. 4. Construction plans showing the locations of a new storage/water tank building, new ADA picnic table, concrete pad, walkway, 2 new BBQ pits, and the refurbishment of 3 existing BBQ pits. at Mahai'ula.



FIG. 5. Aerial photo showing the existing comfort station, parking lot, park facilities, and proposed locations for a new storage/water tank building, new ADA picnic table, concrete pad, walkway, 2 new BBQ pits, and the refurbishment of 3 existing BBQ pits.



PHOTO 1. Proposed location of new storage/water tank building to be built between the existing comfort station buildings as shown. View is to the west (*makai*).

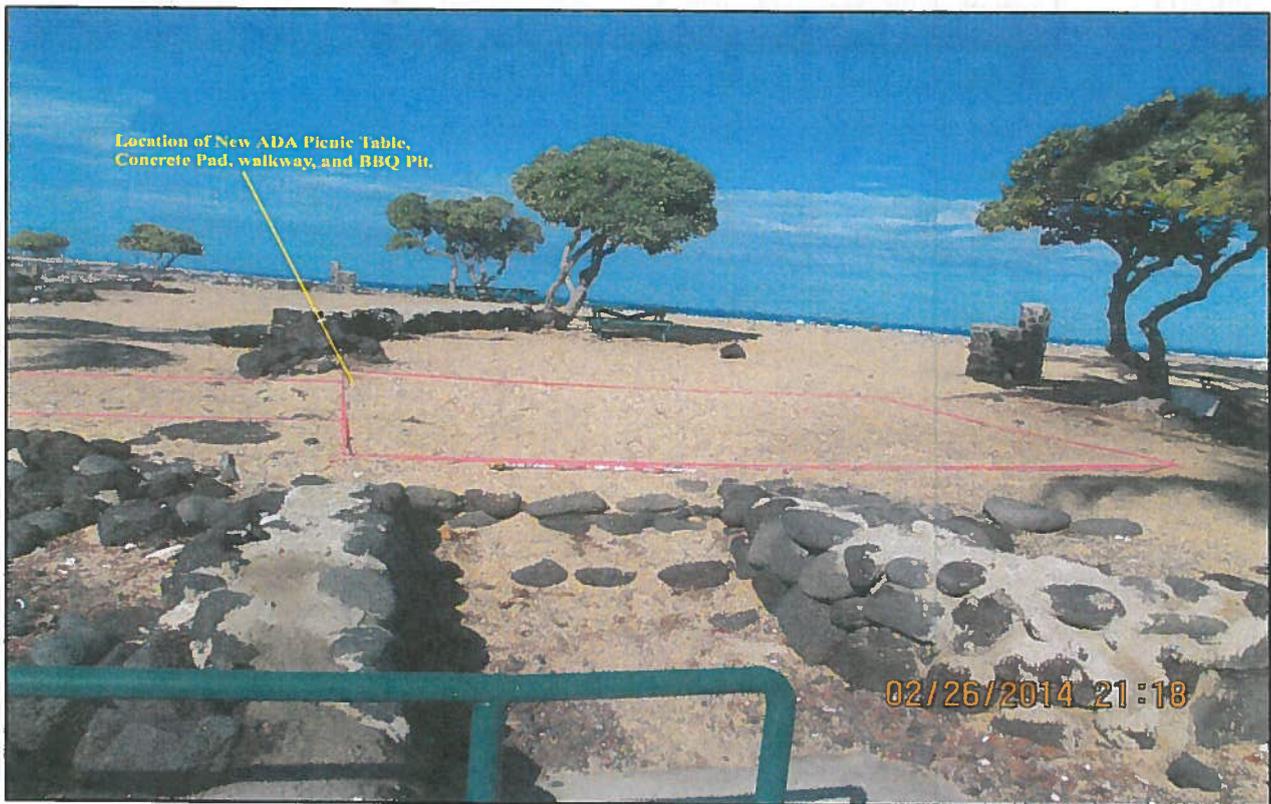


PHOTO 2. The proposed location of the new ADA picnic table, concrete pad, walkway, and a new BBQ pit highlighted in pink. View is to the west (*makai*).



PHOTO 3. Location of the new ADA picnic table, concrete pad, walkway, and a new BBQ pit highlighted in pink. View is to the southwest (*mauka*).

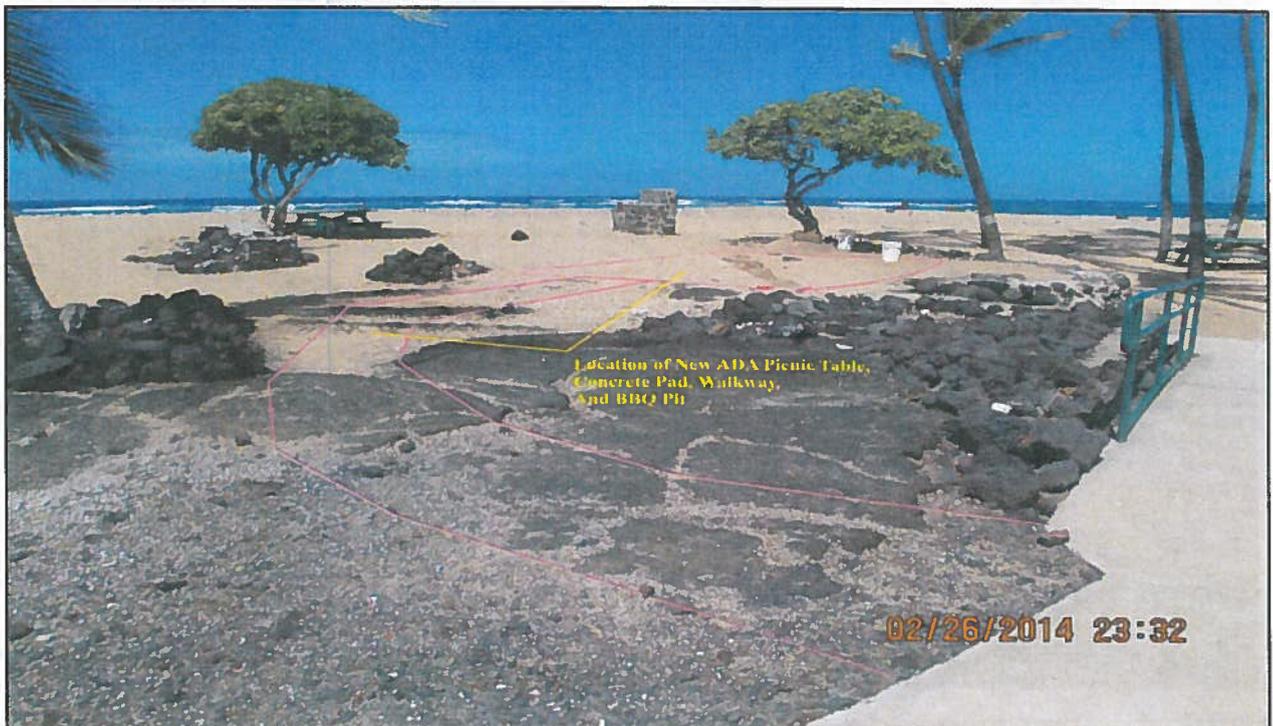


PHOTO 4. Location of the new ADA picnic table, concrete pad, walkway, and a new BBQ pit highlighted in pink, with the location of the walkway in the foreground. View is to the west (*makai*).

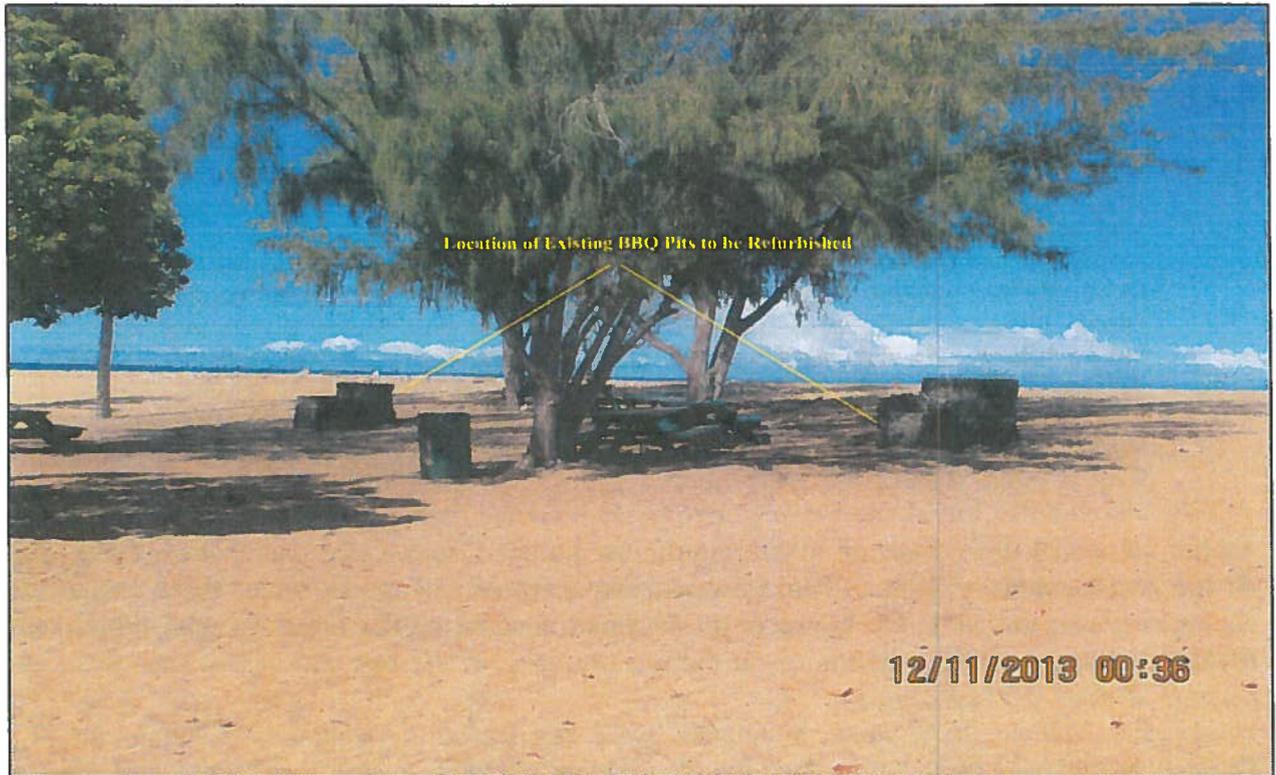


PHOTO 5. Location of 2 of the existing BBQ pits on the beach which to be refurbished. View is to the west (*makai*).

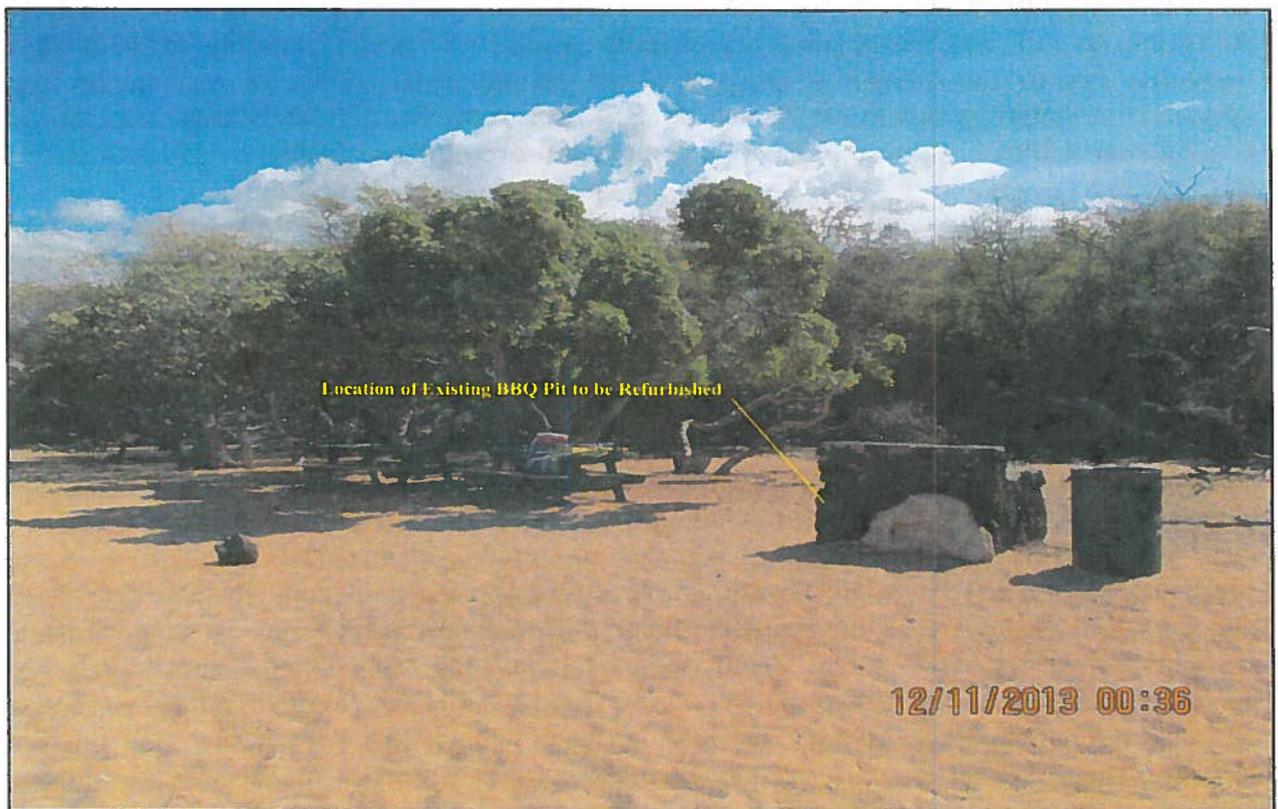


PHOTO 6. Location of the third existing BBQ pit on the beach to be refurbished. View is to the northeast (*mauka*).

The shoreline at Kaulana and Mahai‘ula contains evidence of tsunami damage. This phenomenon was recorded in the early 19<sup>th</sup> century for this area by the missionary Cochran Forbes:

On the 7<sup>th</sup>, [November, 1837] about 7 clock at night the sea at this place receded a number of feet, leaving the shore dry far below low water mark. The phenomenon produced great [sic] excitement among the natives & fish. The cause was unknown as we had no earthquake nor any sensible cause. The evening was perfectly calm & pleasant. The moon was in her first quarter. At Kekaha where the shore is low the return of the sea, tho' very gentle swelled far above high water mark and swept away some houses, tho' no lives were lost. At Hila the return of the sea was very violent and rose high above high water mark and did great damage as many of the people there lived on the shore. Eleven or twelve souls were suddenly swept into eternity and multitudes of others carried, by the receding waves far, from land but effected a return & some were picked up by the boat of a whaleship lying at anchor. (Forbes 1984:59)

Additional evidence for tsunami impacting this area comes from Kelly (1973) who relates that all the houses in the village of Makalawena, just north of Mahai‘ula, were wiped out in the devastating tsunami of 1946. There is no firsthand account of the effect of that tsunami on Mahai‘ula but apparently, the houses at the northern end of the bay survived with little or no damage, as they still stand today.

During the Māhele, four house lot claims were registered in Kaulana, including three at Ka‘elehuluhulu and one at “Kaulana-kai”. In Mahai‘ula, two claims were registered, one of which was for land at Keawehala at the northern end of Mahai‘ula Bay (Maly 1998). None of these land claims at Kaulana or Mahai‘ula were awarded. The reason for this is unknown, but the claims do indicate that a small community made up of several families inhabited the shoreline area of this section of the park in the middle of the 19<sup>th</sup> century. Both of these *ahupua‘a* became government lands (Indices of Awards). This is not surprising, considering that the area contained very limited resources. Roughly half of the land area of Kaulana was covered by the 1801 lava flow, making it even less desirable.

An 1882 map of the region by J.S. Emerson, (State Survey Office Reg. Map No. 1280) indicates a house at the northern end of Mahai‘ula Bay belonging to Ka‘elemakule. The Emerson map also indicates that the 1801 lava flow was composed of two separate episodes, an earlier “smooth” flow and a later flow of “very rough” *pāhoehoe* (1882).

J. Ka‘elemakule, Jr. purchased the land around Mahai‘ula Bay as well as a separate inland burial lot from the Territory of Hawai‘i on May 27, 1903 for \$123.00. The transaction was recorded as Land Grant No. 4723. The 40-acre shoreline parcel, as well as the one-acre burial lot, were surveyed by the government at that time and the survey indicates that the corners of both properties were marked by four *ahu* on each parcel (Land Grant files, Land Management Division, State of Hawai‘i). Two buildings are plotted on the survey map at the north end of the bay, along with the name “Keawehala,” which may be a place name associated with that area. At the south end of the bay, the name “Lae o Umi” appears to denote a coastal location (examination in the field reveals that a finger of lava extends into the ocean at the southern end of Mahai‘ula Beach - this is quite likely the point referred to in the survey). The large 40-acre parcel straddles the boundary of Mahai‘ula and Kaulana, with the bulk of the land situated in Kaulana. The burial lot is also located in Kaulana. It appears that the Ka‘elemakule family was a tenant of the land at Mahai‘ula from at least the

mid-nineteenth century. John Ka'elemakule Jr.'s father was born in 1854 and raised at Mahai'ula by his *hānai* parents Kaaikaula and Poke (Maly 1998).

Several accounts published in the Hawaiian language newspaper *Ka Hōkū o Hawai'i* convey rich information about the Kekaha region in general and about specific locations within the project area. J.W.K.I. Kihe wrote about Ka'elehuluhulu in 1914:

Ka'ele-huluhulu (Splintered or frayed outer hull of a canoe)

It is just a small place which is called Ka'elehuluhulu, but the fame of this landing is great. There is a place to enter the ocean here with a channel, and in the middle of this channel which the canoes use to enter, is a mound of *pahoehoe* called Ka'elehuluhulu. There is water to the inland and seaward of this stone, and if one goes *aku* fishing even at dawn, this is the exit one must depart from. If the sea water was shallow, that is at low tide; all in the canoe would leap out to bear the canoe above this *pahoehoe* mound and place it in the ocean, then they get back into the canoe and travel away. If when they return to this place, the tide is low, they bear the canoe upland of the stone and place it in the water, and then paddle to the canoe landing. It is because of this continual hauling of the canoes [over the *pāhoehoe*], that the hulls become rough or frayed in texture, and so "the rough-frayed hull" came to be named. (Kihe and Wise 1914)

John Ka'elemakule shared his life at Mahai'ula in the late 19<sup>th</sup> and early 20<sup>th</sup> century in a series of articles written for *Ka Hōkū o Hawai'i*. He richly conveys many aspects of life during that time at Mahai'ula, emphasizing the importance of fishing. Ka'elemakule indicates that there were temporary house sites on stone platforms along the shoreline, an area which was formerly shaded by very large *kou* trees. He also relates the following regarding a petroglyph field and a sacred stone at Mahai'ula Bay:

There is a fine broad place on the *pahoehoe*, about two miles from the village, along the trail that ascends to the uplands (*alanui pii uka*), that one can see many of the names of the old people written upon the *pahoehoe*. The names and letters are etched in the *pahoehoe*. In several of the names that I saw written there, was the letter "Z", which is the first letter of the name like "Zeawihela" and "Zaauomoana". This is a letter which was not entered in the mother language of our land. We begin at the "A" and go to the "W", so how did the old people get this letter "Z"? (August 20, 1929: 3, translated by Kepā Maly)

There in the middle of the bay and canoe landing of Mahai'ula is a stone in the water. It stands just a few fathoms out from the shore. When the tide is out, you can walk out to and get on the stone. The ancient name by which this stone was known is "Pohakuolama". This stone looks like a block on which women weave hats. It is round from top to bottom, two people can encircle it, and it is 5 feet high. It is said in the legend that the stone is the body of a woman, and it is a stone which causes the increase or abundance of fish for the fishermen of this land, Mahai'ula. For three months, this female stone dwells in a period of *kapu* (restriction), a period of menstruation. This is in the months of May, June, and July. During the time of defilement, the fishermen of old were also forbidden from taking offerings to the stone with which to ask for the increase of fish. When this female stone, in the bay and canoe landing of Mahai'ula, dwelled in her period of menstruation, the water appeared yellowish-red (*halena melemele ula*) in shallow waters to about two fathoms depth. But when one looked into the water, it could not be seen. The yellow-red remained in the bay of Mahai'ula for the three months mentioned above, and it was so for all the years of my youth. Perhaps it is the same, even at this time.

At the time when her menstruation ended, that was the time that she would be purified, the defilement of the period ended. It was at that time also, that the yellow-red would disappear and the sea water of Mahai'ula became clear once again. Then once again, the fishermen of

Mahaiula would take offerings to her asking that she would cause the fish to increase. (August 22, 1929; translated by Kepā Maly)

The smaller of the two homes at Mahai‘ula was built by John Ka‘elemakule in 1880 with lumber shipped from Honolulu. This house, which his foster mother named Kalahikiola, replaced an earlier *pili* thatched home in the same location (*Ka Hōkū o Hawai‘i*, July 9, 16, August 6, 1929 - translated by Kepā Maly). This house is just south of the two-story Magoon house built early in this century. Ka‘elemakule also wrote that both his foster parents, Kaaikaula and Poke, and his birth mother and her husband, Keakaonalii and Maianu, were buried at the cave called Kolomikimiki in Kaulana. This one-acre cemetery remains a private inholding within the park (refer to Fig. 3).

John Reinecke recorded several archaeological features during his cursory archaeological survey of the Kona coastline in 1930. Reinecke's observations are important as they represent the last recorded observations prior to the large tsunami of this century which apparently caused a great deal of disturbance to the near shore area. He noted concrete salt pans and house sites at the northern end of Kaulana near the beach “at the edge of the flow,” evidence that salt manufacturing was taking place. This industry may explain the Ka‘elemakule purchase of land encompassing the lava flow in Kaulana, as well as his house site in Mahai‘ula. Reinecke recorded four modern houses plus the ruins of another, as well as what he described as a modern stone and concrete platform, suggesting (as the earlier unawarded land claims had) that there was a small settlement at Mahai‘ula early in this century. Reinecke used J. Ka‘elemakule as an informant who told him of a *heiau* “at the spot Ka‘elehuluhulu, on the beach. It is a fishing *heiau* called “Hale o Hiu.” He also reported the petroglyphs as being located “on the pahoehoe about 1.5 miles from Mahaiula”. Reinecke did not relocate either of these sites.

With regard to the trail between the former Magoon estate and Makalawena, George Magoon had the following to say:

The Magoons continued to access Mahai‘ula by boat or from Huehue by foot and donkey until the late 1940s or early 1950s, when the trail down through Ka‘upulehu to Awakee was modified for jeep use. For awhile, the Magoons would drive to Makalawena, then make the last leg of the trip to Mahai‘ula by boat. Eventually, Porto [Almodober] and his “compad,” Alfredo, built a road by hand, across the lava to Mahai‘ula. This road parallels, and in some places obliterates, an older aa paved trail. Today the Magoon family enjoys a paved access from the Queen Kaahumanu Highway. (Maly 1998)

A tour company began bringing tourists down to Ka‘elehuluhulu beach in 1977. Restrooms, shelters, and a snack bar were built on the leased land, many of which were still standing when the State purchased the property in 1995. The company's owner, Ivar Kaipo, constructed a paved road from the highway down to the shoreline of the Ka‘elehuluhulu parcel in 1979 (Clark 1985:117). This road presently serves as the park access road to the Mahai‘ula Section of the park.

## Previous Archaeological Investigations

Archaeological surveys in the Mahai'ula Bay area were conducted as early as 1906, with a more recent archaeological reconnaissance survey of the Mahai'ula Section of the park having been conducted in 1997 (Carpenter, Major, and Yent 1998). John F.G. Stokes, in his 1906-07 island-wide survey of *heiau* sites, recorded two archaeological sites in the Mahai'ula Section of the park. One site is a fishing *ko'a* called Haleohui and the other is an unnamed structure near Ka'elehuluhulu (Stokes 1991).

The Bishop Museum also conducted an archaeological survey of the area under the guidance of John Reinecke in 1930. While in the Kaulana and Mahai'ula area, Reinecke observed a total of seven archaeological site areas, and discussed two others (Reinecke 1930):

- Site 90.** A complex of 6 house platforms, concrete salt pans, walled pools along the beach, one dwelling site, 6 or 7 terraced enclosures, and 4 good *papamū*.
- Site 91.** A complex consisting of a high walled pen, 3 house platforms, one with two natural shelters inside, a walled floor of 'ili'ili, one *papamū*, and 2 platforms (one of lava and one of modern concrete).
- Site 92.** A modern house in ruins, a wall, and a *papamū*.
- Site 93.** Three house sites, one being modern, and a series of shelter caves.
- Site 94.** A house site in line with 3 present houses, pool and wells by a clump of coco palms, and an additional house site located past the coco palms.
- Site 95.** Five house sites, a walled platform, paths running along the coast, with graves and shelters being *mauka*.
- Site 96.** Several old platforms on the sand.

In 1970, Francis Ching completed an archaeological survey within a 23-mile long by 2,000 foot-wide area for the construction of the Queen Ka'ahumanu Highway. He recorded 9 features in Mahai'ula and 5 in Kaulana, including 6 *ahu*, 2 C-shape shelters, 2 trails, 3 dwelling caves, and one disturbed burial cave (feature 1184). These features are located along the highway, approximately 2,500 meters *mauka* of Mahai'ula Bay (Ching 1971). Ching also included an inventory of fishponds for the Kekaha region as an appendix to his 1970 survey. Of interest are two ponds recorded as being destroyed by the 1801 lava flow, the previously mentioned Pa'aiea Fishpond, reputed to be the largest on the island, and Kaulana Fishpond, about which he wrote the following:

The fishpond of Kaulana. Like Paaiea, was also destroyed by the Hualalai flow of 1801. The *makai* portion of Kaulana ahupuaa, in which this fishpond was located, has been almost completely covered by the lava. A few sites are noted for this area. (Ching 1971: Appendix 4)

In 1973, William Kikuchi inventoried the fishponds of Hawai'i Island, and recorded what he called a remnant of Kaulana Fishpond, near the parking lot at Ka'elehuluhulu. This pond is also noted as potentially being a remnant of Pa'aiea Fishpond.

During the 1997 survey by State Parks, a total of 71 archaeological sites and site complexes were recorded, along with a total of 364 features (Carpenter, Major, and Yent 1998). Some of these sites had been previously recorded by Reinecke (1930) and Ching (1971). The majority of sites in Kaulana are located within 200 meters of the shoreline, and the most numerous type of sites found are petroglyphs and *papamū* (Table 1). Many of the petroglyphs are Hawaiian names

etched into the *pāhoehoe* surface of the 1801 lava flow. While much of the settlement of Kaulana appears to have been abandoned by the end of the 19<sup>th</sup> century, activities such as salt manufacture continued on into the 20<sup>th</sup> Century. There is also evidence that the recreational activities in the 20<sup>th</sup> Century created sites and impacted some earlier sites.

**TABLE 1**  
Formal Feature Type Frequency, Ahupua‘a of Kaulana

Site Type	Number	Site Type	Number
Petroglyph	156	Enclosure	2
<i>Papamū</i>	22	Burial Platform	2
<i>Ahu</i>	11	C-Shaped Shelter	1
Wall	7	Excavated/ Cleared Pool	1
Platform	5	Walled Pond	1
Cleared/ Paved Area	5	Paved Trail	1
U-Shaped Shelter	1	Historic Salt Pan Complex	1
Worn Foot/ Horse Trail	3	Mortared Stone Foundation	1
Shipwreck Remnant	3	Sinkhole Shelter	1

Eight (8) archaeological sites are located in the project vicinity (Figures 6 & 7, and Table 2). The petroglyphs and *papamū* are believed to be significant for the potential to yield information about the history of the area, especially after the 1801 lava flow, and also for their traditional cultural significance to native Hawaiians. Further research may identify descendants of those who inscribed them and the cultural activities associated with creating these petroglyphs. The two ponds by the parking lot are significant because of their association with the former fishpond that existed along this shoreline before the 1801 lava flow. Habitation features are limited in the project vicinity, but are significant for their potential to yield information with further research.

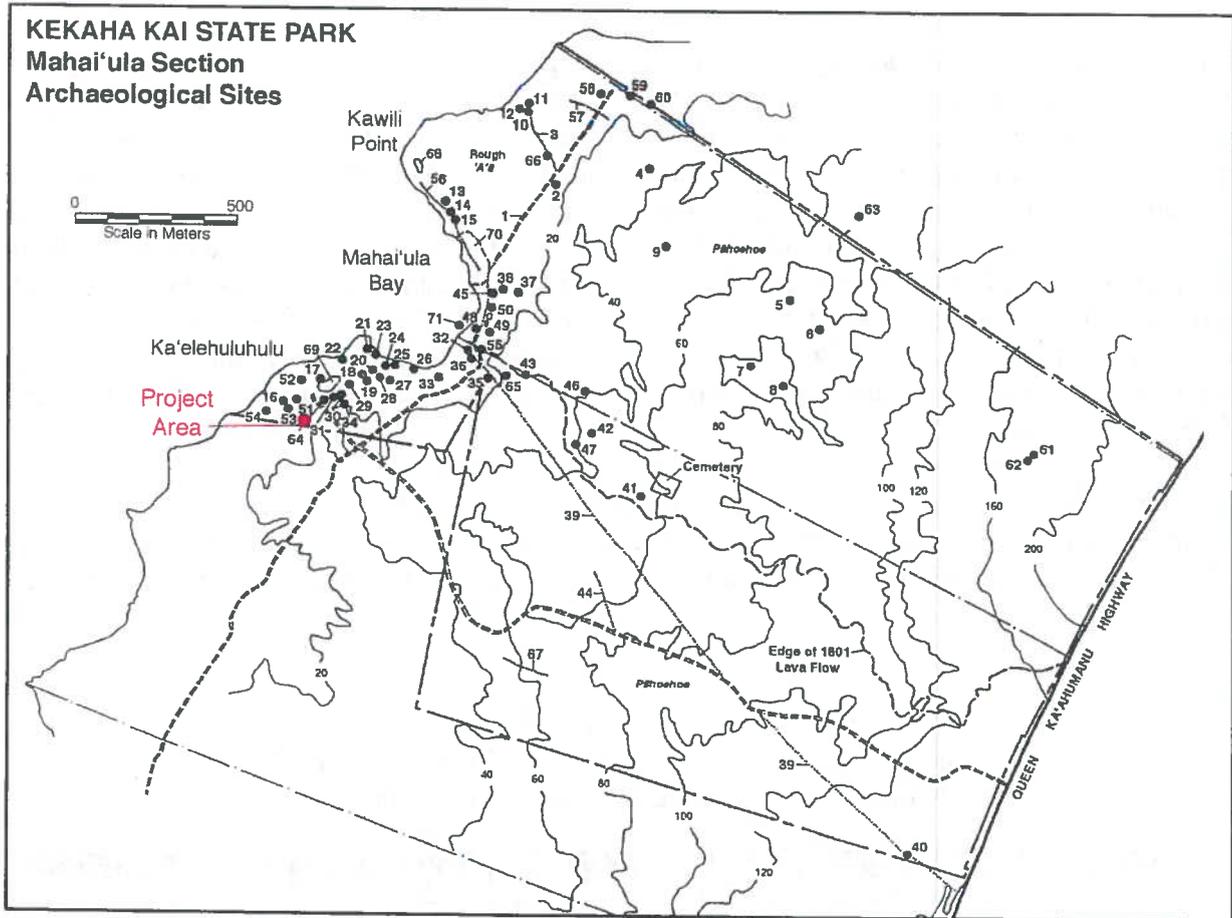


FIG. 6. Location of archaeological sites in the vicinity of the project area based on the 1997 survey conducted by State Parks (Carpenter, Major, and Yent 1998: 29).



FIG. 7. Aerial photo showing locations of the proposed park improvements in relationship to the archaeological sites in the vicinity.

## Project Area Inspection

Hawai'i State Parks Archaeologist, Tracy Tam Sing, inspected the project area on August 8, 2013. A 100% pedestrian survey of the project area was conducted. No historic properties, including historic structures or archaeological sites/features, were observed in the areas of proposed State Park improvements. The areas of the three existing BBQ pits on the beach were also surveyed, and no historic properties were found to be near them. A portion of the project area, located between the existing comfort stations, was previously disturbed during bulldozing activities associated with the construction of the comfort stations and the parking lot, thereby disturbing the surface of the 1801, *pāhoehoe* lava flow. This area was also filled in and compacted with gravel. The BBQ pits selected for refurbishment will remain in their existing locations, therefore, no further impact to the beach is anticipated as part of this project (refer to Photos 5 and 6, and Figure 7).

The site inspection also determined that the previously identified archaeological sites in the vicinity of the current project area are buffered by concrete sidewalks, parking lots, elevation differences, and vegetation. Therefore, no archaeological sites should be impacted by this project (refer to Table 2).

**TABLE 2**  
Archaeological Sites Inventoried in the Vicinity of the Project Area  
(Compiled from Carpenter, Major, and Yent 1998)

Site #	Site Type	Location	Potential Impacts	Significance
30	Petroglyph & <i>Papamū</i>	On <i>pāhoehoe</i> rise NE of project area.	Low, due to distance from project area.	D, E
31 (Reinecke's Site 90)	Habitation site with low, partially paved platforms, midden, and 4 <i>Papamū</i>	Approximately 20m west of Site 30, in <i>Kiawe</i> thicket.	Low, due to distance from project area.	C, D
34	Petroglyphs	Approximately 25m SE of Site 31, on same <i>pāhoehoe</i> rise.	Low, due to distance from project area.	D, E
64	Petroglyphs & <i>Papamū</i>	Approximately 20m SW of Site 30, on same <i>pāhoehoe</i> rise.	Low, due to distance from project area.	D, E
51	Anchialine Pool	S side of parking lot and <i>makai</i> of restrooms.	Low, due to sidewalk buffer and vegetation.	D
52	Walled Anchialine Pool ( <i>Pa'āiea</i> Fishpond)	W <i>makai</i> side of parking lot.	Low, due to vegetation.	A, B, D, E
53	Walls, Possible Platforms	W <i>makai</i> of restrooms and S of pond (Site 51); <i>kiawe</i> thicket.	Low, due to distance and vegetation cover.	D
54	Concrete Salt Pans	Near the shoreline, about 40m north of the S property line.	Low, due to distance from project area.	C, D

### Significance Criteria:

- A – Association with events that have made an important contribution to broad patterns of history.
- B – Association with famous people.
- C – An excellent example of a site type.
- D – Have yielded or likely to yield information for research on prehistory or history.
- E – Traditional cultural significance to an ethnic group.

### Archaeological Testing Results

Through consultation with SHPD, it was recommended that sub-surface testing be conducted in the location of the new ADA picnic table, concrete pad, walkway and BBQ pit. This area was recommended for testing due to the projects location on the sand beach, as the sand dune in this area may have the potential for yielding sub-surface cultural features, cultural deposits, and burials.

Testing was conducted by State Parks Archaeologists Tracy Tam Sing and Alan Carpenter on March 5, 2014. Sub-surface testing consisted of one stratigraphic trench (ST #1) and three shovel probes (SP 1-3). All four excavations were placed in the location of the new ADA picnic table concrete pad and walkway, located 6.5 m to the west of the existing ADA picnic table. These four locations were selected based upon their likelihood of yielding potential sub-surface archaeological information and cultural materials (Figure 8). All trenches and shovel probes were hand excavated by natural stratigraphic layers in 10 cm levels to approximately 50 cm below surface (B/S), or until bedrock was exposed. All excavated soil was sieved through 1/8" mesh screen in order to determine the absence/presence of cultural/historic materials. Soil samples were taken from each layer of ST #1, in order to record the stratigraphic configuration of the soil. Shovel Probes 1 through 3 (SP 1-3) yielded the same Layer I as ST #1, and terminated upon exposure of bedrock from the 1801 lava flow. No soil samples were taken from shovel probes 1-3. One representative wall from ST #1 was scraped and cleaned using a hand trowel, and was profiled/ drafted to scale. Soil colors and textures were described using the Munsell soil colors along with U.S. Soil Conservation terminology. All excavations were photographed and backfilled.

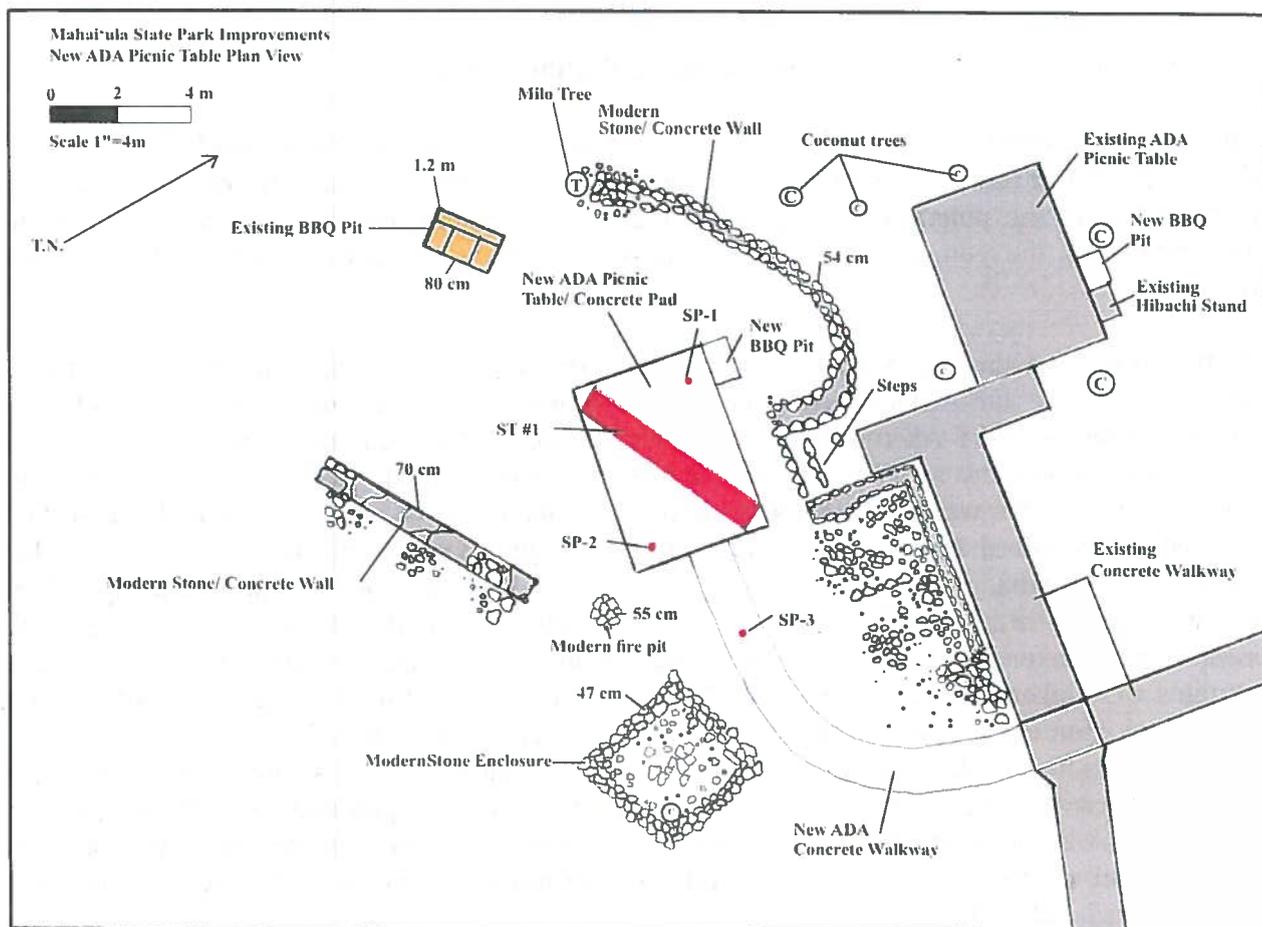


FIG. 8. Plan view showing the locations of Strat Trench #1 (ST #1), and Shovel Probes 1-3 (SP 1-3) in relation to the new ADA picnic table, concrete pad, walkway, and 2 new BBQ Pits.

### Stratigraphic Trench #1

Stratigraphic Trench #1 (ST #1) was a 5 m long by 50 cm wide trench, and was oriented to  $312^{\circ}$  true north. This trench was positioned diagonally within the proposed area for the new ADA picnic table and concrete pad (Figure 8). It was hand excavated by natural stratigraphic layers in 10 cm levels to a depth of 20 cm B/S, until bedrock from the 1801 lava flow was exposed. Locally, the ground is relatively level and exposed *pāhoehoe* outcropping was evident in the immediate area just south of the trench. The surface of the unit, being sand, was fairly flat, level, and contained no vegetation or cultural material (Photo 8).

#### ST #1, Layer I (0-10 cm B/S)

In ST #1, a layer of loose dry sand was exposed on the surface Layer I, and ranged from 0 cm (surface) to 10 cm below surface (B/S). Layer I, is described as 10YR 6/4 (light yellowish brown) in color; fine to med. grain coralline sand; dry consistency, loose; moist consistency, loose; wet consistency, non-sticky; plasticity, non-plastic; no roots or pores; with a abrupt, smooth boundary (Table 3). Modern cultural material recovered from Layer I included: brown beer bottle glass fragments, cigarette butts, 1 Plastic bottle cap, 1 Beer bottle cap, 1 Lead fishing weight, 1 *Opihi* shell *Cellana sandwicensis* and Goat scat. Modern cultural material recovered from Layer I appears to reflect 20<sup>th</sup> century use of the area for recreational activities. Layer I

terminated at 2-10 cm B/S, at the point where bedrock from the 1801 lava flow was encountered, and Layer II in the western portion of the trench.

### ST #1, Layer II (10-20 cm B/S)

A second cultural layer, Layer II, was also present in ST #1, and ended on bedrock from the 1801 lava flow (Photo 9). Layer II, begins at 10 cm B/S, and was observed in a crack in the lava, ending at 20 cm B/S on bedrock. This layer was clearly distinguishable from Layer I by differences in soil color and texture. Layer II, is described as 10YR 4/2 (dark grayish brown) in color; fine to med. grain coralline/ basalt sandy loam; dry consistency, loose; moist consistency, loose; wet consistency, non-sticky; plasticity, non-plastic; no roots or pores; with a abrupt, wavy boundary (Table 3).

No cultural material was observed in Layer II. Small fragments of naturally occurring beach shell were observed in the cracks of the lava at the bottom of the Layer II. Natural marine shell observed from Layer II included fragments of: Violet-mouth Jewel Box (*Chama iostoma*), *Opihi* (*Cellana sandwicensis*), Keyhole Limpet (*Fissurellidae*), Top Shell (*Trochidae*), *Pipipi* (*Nerita picea*), Spotted Stromb (*Strombus Maculatus*), Calf Cowrie (*Cypraea vitellus*), Rough Periwinkle (*Littoraria scabra*), and Sea Urchin (*echinoderm*). The southern wall of the test trench was profiled, refer to Photo 10 and Figure 8 for descriptions.

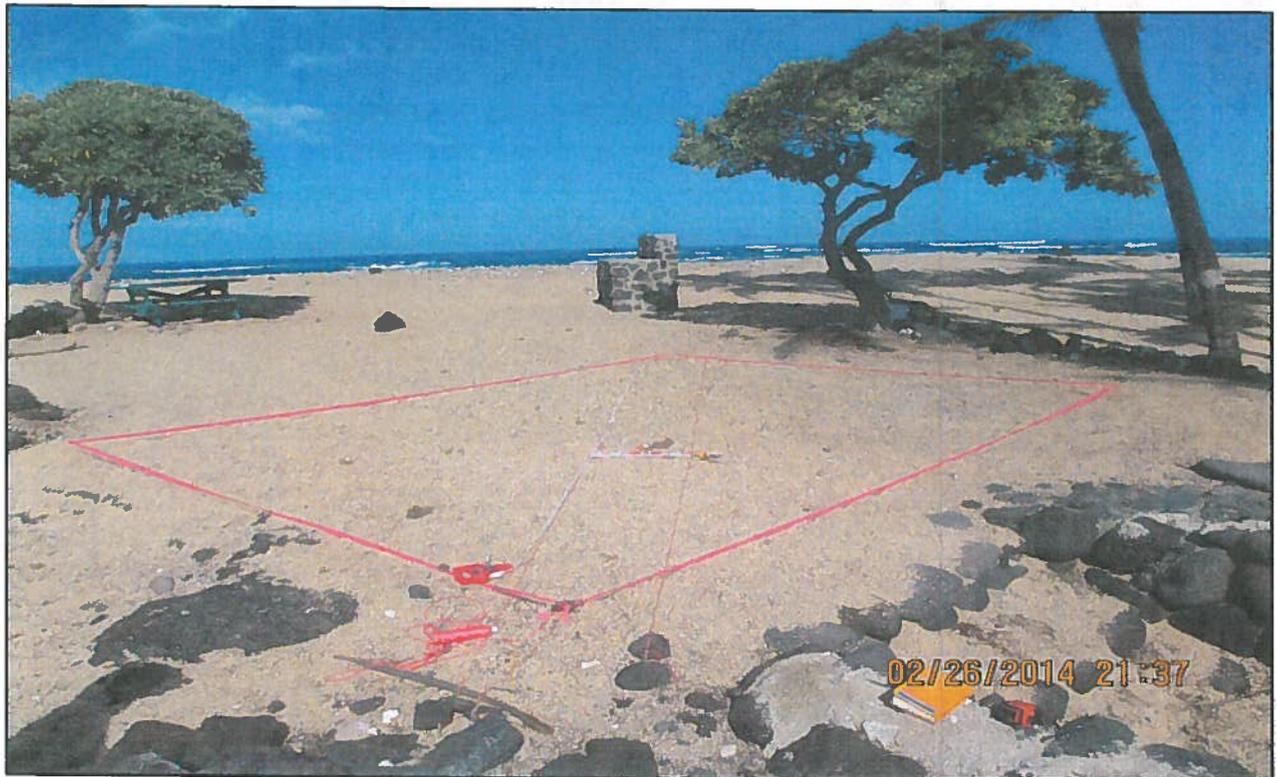


PHOTO. 8. Surface photo of Stratigraphic Trench #1 (ST #1) within the location of the new ADA concrete pad outlined in pink. View to the west.

**TABLE 3**

Soil Description of Layers I and II for Stratigraphic Trench #1, and Shovel Probes 1-3.

Unit	Layer	Depth (Below Surface)	Soil Description	Cultural Assemblage
ST #1	I	0-10 cm Level I	10YR 6/4 (light yellowish brown) sand; dry, loose; fine to med. grain coralline sand grain; non-sticky, non-plastic; no roots or pores; abrupt, smooth boundary.	Modern Bottle glass frag. Cigarette butts 1 Plastic bottle cap 1 Beer bottle cap 1 Lead fishing weight 1 <i>opihi</i> shell Goat scat
ST #1	II	10-20 cm Level I	10YR 4/2 (dark grayish brown) coarse sandy loam; moist, loose; med. coralline sand grain, with fine to med. gravel; non-sticky, non-plastic; no roots or pores, abrupt, wavy boundary	None Natural Marine Shell
ST #1	BOE	20 cm	1801 <i>pāhoehoe</i> bedrock	N/A
SP 1	I	0-2 cm Level I	10YR 6/4 (light yellowish brown) sand; dry, loose; fine to med. grain coralline sand grain; non-sticky, non-plastic; no roots or pores; abrupt, wavy boundary.	None
SP 1	BOE	2 cm	1801 <i>pāhoehoe</i> bedrock	N/A
SP 2	I	0-5 cm Level I	10YR 6/4 (light yellowish brown) sand; dry, loose; fine to med. grain coralline sand grain; non-sticky, non-plastic; no roots or pores; abrupt, wavy boundary.	None
SP 2	BOE	5 cm	1801 <i>pāhoehoe</i> bedrock	N/A
SP 3	I	0-50 cm Level I	10YR 6/4 (light yellowish brown) sand; dry, loose; fine to med. grain coralline sand grain; non-sticky, non-plastic; 20% sm. rootlets, no pores; abrupt, wavy boundary.	None
SP 3	BOE	50 cm	1801 <i>pāhoehoe</i> bedrock	N/A

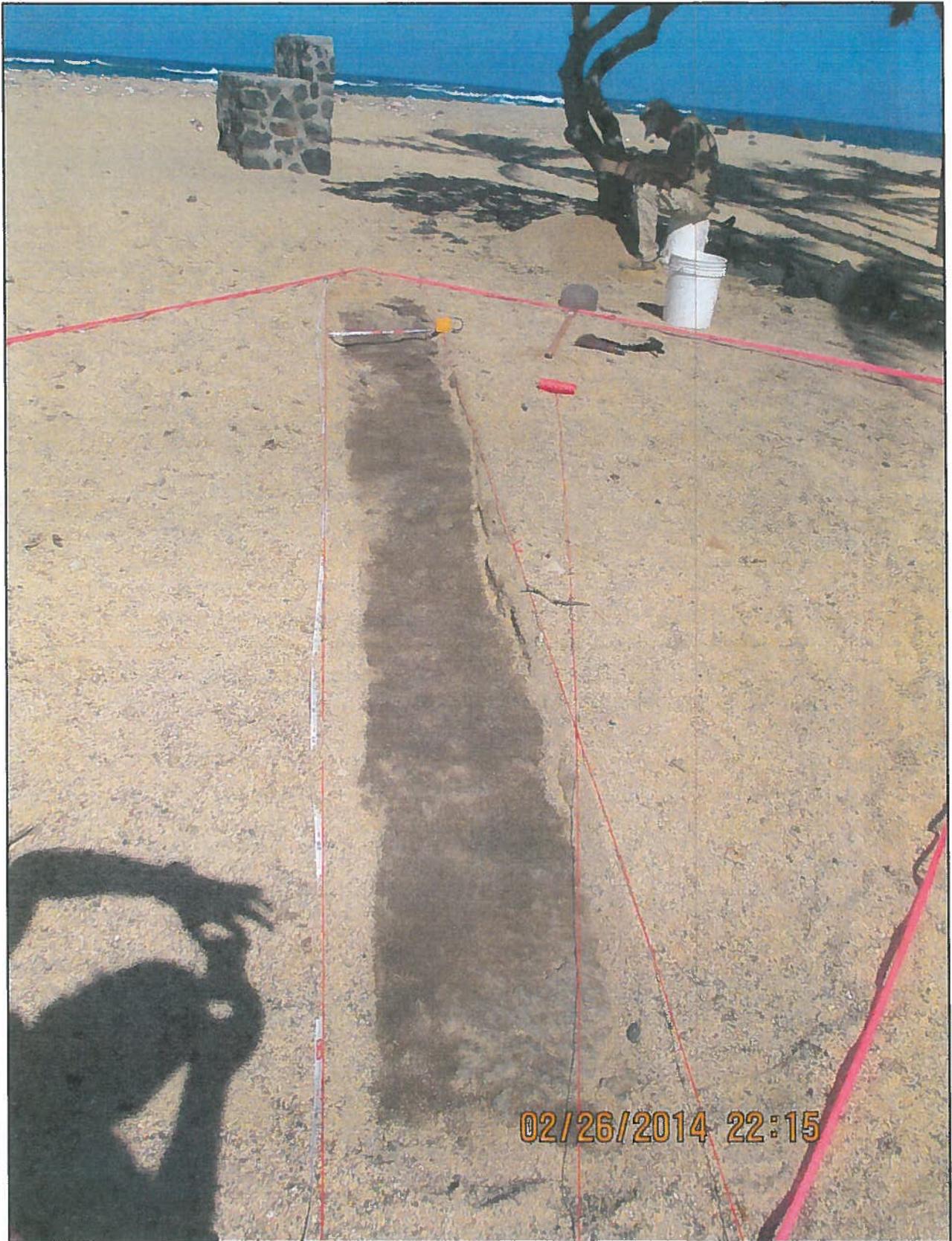


PHOTO. 9. Photo of base of excavation (BOE) for Strat Trench #1 (ST #1), at 2-20 cm B/S. View to the West.



PHOTO. 10. Profile of Strat Trench #1 (ST #1), Layers I and II, ending at 20 cm B/S on top of bedrock from the 1801 lava flow. View to the south.

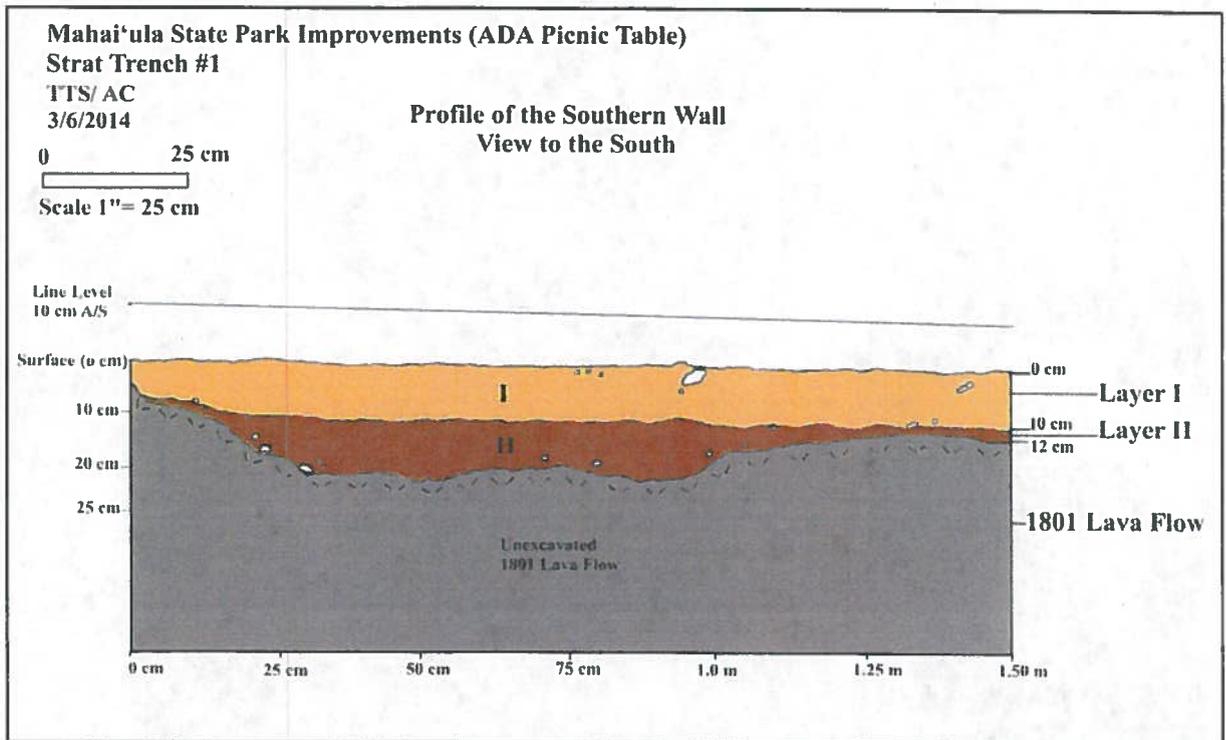


FIG 8. Profile of the southern wall of Strat Trench #1 (ST #1), showing Layers I and II, excavation ended at 20 cm B/S on top of bedrock from the 1801 lava flow. View to the south.

### **Shovel Probe 1**

Shovel Probe 1 (SP 1) was a 30 cm in diameter. This shovel probe was positioned in the northeastern corner within the proposed area for the new ADA picnic table and concrete pad (Figure 8). It was hand excavated by natural stratigraphic layers to a depth of 2 cm B/S, until bedrock from the 1801 lava flow was exposed. Locally, the ground is relatively level and exposed *pāhoehoe* outcropping was evident in the immediate area. The surface of the shovel probe, being sand, was fairly flat, level, and contained no vegetation or cultural material.

#### **SP 1, Layer I (0-2 cm B/S)**

In SP 1, a layer of loose dry sand was exposed on the surface Layer I, and ranged from 0 cm (surface) to 2 cm below surface (B/S). Layer I, is described as being the same as observed in ST #1, 10YR 6/4 (light yellowish brown) in color; fine to med. grain coralline sand; dry consistency, loose; moist consistency, loose; wet consistency, non-sticky; plasticity, non-plastic; no roots or pores; with an abrupt, wavy boundary (Table 3). Layer I terminated at 2 cm B/S, at the point where bedrock from the 1801 lava flow was encountered. No cultural material was observed in Layer I.

### **Shovel Probe 2**

Shovel Probe 2 (SP 2) was a 30 cm in diameter. This shovel probe was positioned in the southwestern corner within the proposed area for the new ADA picnic table and concrete pad (Figure 8). It was hand excavated by natural stratigraphic layers to a depth of 5 cm B/S, until bedrock from the 1801 lava flow was exposed. Locally, the ground is relatively level and exposed *pāhoehoe* outcropping was evident in the immediate area to the southeast. The surface of the shovel probe, being sand, was fairly flat, level, and contained no vegetation or cultural material.

#### **SP 2, Layer I (0-5 cm B/S)**

In SP 2, a layer of loose dry sand was exposed on the surface Layer I, and ranged from 0 cm (surface) to 5 cm below surface (B/S). Layer I, is described as being the same as observed in ST #1, 10YR 6/4 (light yellowish brown) in color; fine to med. grain coralline sand; dry consistency, loose; moist consistency, loose; wet consistency, non-sticky; plasticity, non-plastic; no roots or pores; with an abrupt, wavy boundary (Table 3). Layer I terminated at 5 cm B/S, at the point where bedrock from the 1801 lava flow was encountered. No cultural material was observed in Layer I.

### **Shovel Probe 3**

Shovel Probe 3 (SP 3) was a 30 cm in diameter. This shovel probe was positioned in the southwestern corner within the proposed area for the new ADA picnic table and concrete pad (Figure 8). It was hand excavated by natural stratigraphic layers to a depth of 50 cm B/S, until bedrock from the 1801 lava flow was exposed. Locally, the ground is relatively level and exposed *pāhoehoe* outcropping was evident in the immediate area to the east. The surface of the shovel probe, being sand, was fairly flat, level, and contained no vegetation or cultural material.

### **SP 3, Layer I (0-50 cm B/S)**

In SP 3, a layer of loose dry sand was exposed on the surface Layer I, and ranged from 0 cm (surface) to 50 cm below surface (B/S). Layer I, is described as being the same as observed in ST #1, 10YR 6/4 (light yellowish brown) in color; fine to med. grain coralline sand; dry consistency, loose; moist consistency, loose; wet consistency, non-sticky; plasticity, non-plastic; 20% sm. rootlets no pores; with an abrupt, wavy boundary (Table 3). Layer I terminated at 50 cm B/S, at the point where bedrock from the 1801 lava flow was encountered. No cultural material was observed in Layer I.

The excavation of one stratigraphic trench (ST #1), and three separate shovel probes (SP 1-3) within Mahai'ula confirmed that there are no sub-surface cultural features, deposits or burials present in the desired location for the proposed new ADA picnic table, pad, and walkway. Exposed *pāhoehoe* outcrops from the 1801 lava flow are located throughout the project area, suggesting that sand deposits in the area are fairly shallow near the parking lot.

### **Consultation**

On January 22, 2014, consultation for the project was conducted with members of *Hui Laulima o Kekaha Kai* at Mahai'ula. Those consulted were Roger Harris, Cindi Punihaole, Christine Bean, and Nicole Lui. All of the individuals have extensive ties to the area, but did not indicate any knowledge of cultural sites except for those identified during previous archaeological surveys. The input of these consultants has been valuable throughout the planning process of Kekaha Kai State Park, but the concerns they expressed regarding this project were directed more towards the facilities rather than any concerns related to cultural resources. There were no concerns raised about the proposed storage/water tank building but they requested that State Parks consider refurbishing rather than demolishing the BBQ pits:

- It was suggested that the old BBQ pits be repaired by replacing fallen rocks with new lava rocks and installing new grills.
- There was a question asked regarding the possible historic age of the hibachi proposed for demolition. The hibachi is not over 50 years of age. However, this hibachi stand will not be demolished.
- It was suggested that one of the new BBQ pits be located adjacent to the existing ADA-compliant picnic table on a concrete pad. A second concrete pad with ADA-compliant picnic table and BBQ pit could be constructed about 15-20 feet to the north of the existing pad to accommodate a second ADA person or group. A concrete walkway to connect the two concrete pads was also recommended. Taking these recommendations into consideration, but constrained by the 40' shoreline setback, plans have been revised, as indicated in this memo, to construct a second ADA pad and table to the west of the current ADA table.

State Parks agreed to assess the feasibility of these recommendations and make adjustments to the design as deemed appropriate. A rendering of these changes to accommodate an additional concrete slab for an ADA-compliant picnic table is shown in Photos 2-3. The proposed features will connect to existing ADA-compliant walkways and the existing picnic table (Photo 4). These changes will also incorporate the existing rock and mortar walls from the 1970s and 1980s. The proposed changes will not impact any of the previously identified archaeological sites.

### **Conclusion and Request for Determination and Concurrence to Proceed**

The Division of State Parks Archaeology Program believes that there will be “no historic properties affected” by the construction of the proposed storage/water tank building, construction of a new concrete slab for an ADA-compliant picnic table, and renovation/construction of the BBQ pits in the shoreline area of Mahai‘ula. All archaeological and historical evidence to date indicates that the likelihood of encountering archaeological surface and subsurface features and deposits within the project area nearly zero. Most notably, and as summarized in this memorandum, archaeological testing in the precise location of the planned ADA picnic table improvements indicated a very thin, modern beach deposit overlying the 1801 lava flow.

As a precautionary measure during the excavation to demolish and construct the BBQ pits, the State Parks archaeologist will observe the work being conducted. We do not, however, expect historic properties to be present based on past ground disturbance in the project area. On the remote chance that subsurface features, cultural deposits, or human remains are uncovered by ground disturbing activities, the contractor will be instructed to stop all work in the vicinity of the find and State Parks will respond via the appropriate means under either HAR 13-274-12 or HAR 13-300-40.

The State Parks archaeologist will also work with the contractor on delineating staging areas, and areas permitted for the movement of machinery in the park. The known historic properties in the vicinity will be pointed out and the contractor will be instructed to keep all machinery and stockpiling of materials to previously disturbed areas, such as the parking lot. The locations and distance of the known archaeological sites from the construction areas do not indicate that fencing will be required around the sites during the construction.

We thank you in advance for your review of our proposed determination of “no historic properties affected” and our request for concurrence to proceed with the proposed park improvements at the Mahai‘ula Section of Kekaha Kai State Park. If you have any questions please contact Tracy Tam Sing, Hawai‘i Island Parks Archaeologist, at (808) 313-0858 or [Tracy.l.tamsing@hawaii.gov](mailto:Tracy.l.tamsing@hawaii.gov).

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NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE HISTORIC PRESERVATION DIVISION  
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ENHANCEMENT  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAPUŌI AWEI SE AND RESERVE COMMISSION  
LAND  
STATE PARKS

July 8, 2014

MEMORANDUM

To: Dan Quinn  
Division of State Parks  
PO BOX 621  
Honolulu, HI 96809

LOG NO: 2014.2850  
DOC NO: 1407MV07  
Archaeology

FROM: Mike Vitousek, Lead Archaeologist Hawaii Island Section

Handwritten signature of Mike Vitousek in cursive.

SUBJECT: Chapter 6E-8 and Historic Preservation Review -  
Request for Letter of Determination  
Storage and Picnic Improvements within Kekaha Kai State Park  
Kaulana Ahupua'a, North Kona District, Island of Hawai'i  
TMK (3) 7-2-005:003 (portion)

Thank you for the opportunity to review the subject project that was received by our office on May 28, 2014. We apologize for the delayed review and thank you for your patience. According to the project description, this project involves the construction of a new storage/water tank building, a new ADA picnic table with a concrete pad and walkway, two new BBQ pits and the refurbishment of three existing BBQ pits in the Mahai'ula section of Kekaha Kai State Park. These areas are depicted on figure4 of this submittal. A review of our records indicates that this area was subjected to an archaeological reconnaissance survey by State Parks archaeologists (Carpenter, Major, and Yent 1998), and no historic properties were identified in the current project area. According to the submittal, this project area was recently subjected to a 100% pedestrian survey by State Parks archaeologist Tracy Tam Sing, and again no historic properties were recorded. The identification efforts also included the excavation of a 5m long by 50cm wide stratigraphic trench in the location of the proposed ADA picnic table. The test trench revealed a very limited accumulation of sand, less than 25 cm over bedrock. No cultural remains were recorded. The identification report also records the presence of modern stone structures in the vicinity of the project area. Therefore State Parks has requested SHPD concurrence with a determination of no historic properties affected. Given the absence of historic sites from the project area, SHPD concurs with the determination that **no historic properties will be affected** by the proposed project.

However, SHPD noticed that the locations of sites in the vicinity of the project area were presented with temporary site numbers and not State Inventory of Historic Places Numbers. In the future, please use SIHP numbers to describe sites if possible. If no SIHP numbers have been assigned, please request new SIHP numbers for these sites so that they can be included in the statewide inventory of historic properties. Finally, in the event that historic resources, including human skeletal remains, structural remains, sand deposits, midden deposits, or lava tubes are identified during construction activities, please cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division at (808) 933-7653.

Please contact Mike Vitousek at (808) 652-1510 or [Michael.Vitousek@hawaii.gov](mailto:Michael.Vitousek@hawaii.gov) for any questions or concerns regarding this letter.

CC: [Tracy.L.TamSing@hawaii.gov](mailto:Tracy.L.TamSing@hawaii.gov)