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OFFICE OF ENVIRONMENTAL QUALITY CONTROL

June 25, 2014

Ref. No.: PL KALAELOA 17.6.2

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JUL 00 2014

Ms. Jessica Wooley, Director
Office of Environmental Quality Control
Department of Health
State of Hawaii
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Ms. Wooley:

With this letter, the Hawaii Community Development Authority ("HCDA") hereby transmits the draft environmental assessment and anticipated finding of no significant impact ("DEA-AFONSI") for the proposed Kalaeloa Heritage Park situated at Tax Map Keys 9-1-013: 067 and 9-1-013: 069 in the Ewa District on the island of Oahu for publication in the next available edition of the *Environmental Notice*.

Enclosed is a completed OEQC Publication Form, two copies of the DEA-AFONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions regarding this matter, please contact Ms. Tesha Malama at 620-9643 or via email at: tesha@hcdaweb.org.

Sincerely,


Anthony J. H. Ching
Executive Director

AJHC/THM:ak

- Encs.: 1. Two (2) hard copies of DEA-AFONSI
2. One (1) electronic copy of DEA-AFONSI
3. One (1) hard copy of OEQC Publication Form
4. One (1) electronic copy of OEQC Publication Form

c: HCDA

**APPLICANT ACTIONS
SECTION 343-5(C), HRS
PUBLICATION FORM (JANUARY 2013 REVISION)**

RECEIVED

Project Name: Draft Environmental Assessment for the proposed Kalaeloa Heritage Park Station
Island: O'ahu
District: 'Ewa
TMK: 9-1-013:069 and 9-1-013:067
Permits: State Hawai'i Community Development Authority: Development Permit. State DOH: NPDES permit. State SHPD: Archaeological Preservation Plan and Burial Treatment Plan. City & County DPP: Grading and Grubbing Permit, Building Permit.

Approving Agency: Hawai'i Community Development Authority, 461 Cooke St. Honolulu HI 96813
Contact: Tesha Malama, Telephone: (808) 620-9643, email: tesha@hcdaweb.org

Applicant: Hawai'i Community Development Authority, 461 Cooke St. Honolulu HI 96813
Contact: Tesha Malama, Telephone: (808) 620-9643, email: tesha@hcdaweb.org

Consultant: Townscape, Inc., 900 Fort Street Mall, Suite 1160, Honolulu HI 96813
Contact: Gabrielle Sham, Telephone: (808) 536-6999, email: gabrielle@townscapeinc.com

Status (check one only):

- DEA-AFONSI** Submit the approving 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; a 30-day comment period ensues upon publication in the periodic bulletin.
- FEA-FONSI** Submit the approving 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; no comment period ensues upon publication in the periodic bulletin.
- FEA-EISPN** Submit the approving 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; a 30-day consultation period ensues upon publication in the periodic bulletin.
- Act 172-12 EISPN** Submit the approving 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. NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
- DEIS** The applicant simultaneously transmits to both the OEQC and the approving agency, 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 oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
- FEIS** The applicant simultaneously transmits to both the OEQC and the approving agency, 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 oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
- Section 11-200-23 Determination** The approving agency simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.
- Statutory hammer Acceptance** The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.
- Section 11-200-27 Determination** The approving agency simultaneously transmits its notice to both the applicant 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 (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

The Hawai'i Community Development Authority (HCDA), in partnership with the Kalaeloa Heritage and Legacy Foundation, is working to create the Kalaeloa Heritage Park (KHP) in 'Ewa, O'ahu. Located just east of the Kalaeloa Airport, the 77-acre KHP contains significant cultural, historical, and natural resources unique to the 'Ewa Plain.

Proposed actions for developing the KHP complex will include a multi-purpose cultural center, botanical greenhouse, maintenance shed, and caretaker/security cottage. The KHP complex will support the existing "interpretative area" where visitors are guided along a trail which includes remnants of an ancient Hawaiian village. The majority of the proposed development will be located in an area that has been previously bulldozed for military purposes in order to minimize disturbance to the remainder of the site.

The proposed project will not have a significant cumulative effect upon the environment. The proposed project will have short term impacts on traffic, noise, and air quality during construction, but will be mitigated through use of Best Management Practices. No long-term impacts are expected. The KHP will promote the stewardship of natural, cultural and historical resources on the 'Ewa Plain, and educate visitors about the past. The proposed development of the KHP will support the goals of the HCDA and City and County of Honolulu to preserve open space and provide recreational and educational opportunities in 'Ewa.

Kalaeloa Heritage Park 'Ewa, O'ahu

DRAFT ENVIRONMENTAL ASSESSMENT



Prepared for:
Hawai'i Community Development Authority (HCDA)

June 2014

Prepared by:



Townscape, Inc.

Kalaeloa Heritage Park
'Ewa, O'ahu

DRAFT
ENVIRONMENTAL ASSESSMENT

Prepared for:

Hawai'i Community Development Authority (HCDA)

June 2014

Prepared by:



Townscape, Inc.

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Project Name: Kalaeloa Heritage Park (KHP)
Applicant: Hawai'i Community Development Authority (HCDA)
Approving Agency: Hawai'i Community Development Authority (HCDA)
Project Location: Kalaeloa, 'Ewa, O'ahu
TMKs: 9-1-013:069 (11.5 acres) and 9-1-013:067 (65.4 acres)
Anticipated Determination: Finding of No Significant Impact (FONSI)
Contact: Gabrielle Sham, Townscape, Inc. 536-6999,
gabrielle@townscapeinc.com

Agencies and Parties Consulted:

Federal: Barbers Point Naval Air Station, Base Realignment & Closure (BRAC)
Federal Aviation Administration (FAA)
Naval Facilities Engineering Command (NAVFAC)
U.S. Coast Guard Air Station Barbers Point
U.S. Fish and Wildlife Service (USFWS)
U.S. House of Representatives and U.S. Senate

State: Department of Hawaiian Homelands (DHHL)
Department of Transportation, Airports Division
Department of Land and Natural Resources, Historic Preservation
Division (SHPD)
Hawaii Homeless Program Office
Honolulu Community College (HCC)
Office of Hawaiian Affairs (OHA)

City: Board of Water Supply (BWS)
Department of Environmental Services (DES)
Department of Parks and Recreation (DPR)
Department of Planning and Permitting (DPP)
Department of Transportation Services (DTS)
Honolulu City Council
Honolulu Police Department (HPD)

Other: Carmel Partners
Hawaiian Telcom
Kalaeloa Heritage and Legacy Foundation (KHLF)
Penrose Corporation
Pural Water Specialty Co. Inc.

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Appendices

- A. Preliminary Agency Comments on Proposed Action
- B. Cultural Impact Assessment

List of Acronyms

amsl	above mean sea level
ASHOK	‘Ahahui Siwila Hawai‘i O Kapolei
BMP	Best Management Practice
BPNAS	Barbers Point Naval Air Station
BRAC	Base Realignment and Closure
BWS	Board of Water Supply (City and County of Honolulu)
CRA	Cultural Resource Area
CRI	Cultural Resource Inventory
CWA	Clean Water Act (U.S.)
CWB	Clean Water Branch (State)
DHHL	Department of Hawaiian Homelands (State)
DP	Development Plan
DPP	Department of Planning and Permitting (City and County of Honolulu)
DOH	Department of Health (State)
DOT	Department of Transportation (State)
DPR	Department of Parks and Recreation (City and County of Honolulu)
EA	Environmental Assessment
EIS	Environmental Impact Statement
HCDA	Hawai‘i Community Development Authority
HAR	Hawai‘i Administrative Rules
HRS	Hawai‘i Revised Statutes
IARII	International Archaeological Research Institute, Inc.
KCDD	Kalaeloa Community Development District
KHLF	Kalaeloa Heritage and Legacy Foundation
KHP	Kalaeloa Heritage Park
NAVFAC	Naval Facilities
NPDES	National Pollution Discharge Elimination System
PUC	Public Utilities Commission
ROH	Revised Ordinances of Honolulu

SHPD	State Historic Preservation Division
TMK	Tax Map Key
UIC	Underground Injection Control
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WQC	Water Quality Certification
WWII	World War II

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1. INTRODUCTION

The Hawai'i Community Development Authority (HCDA), in partnership with the Kalaeloa Heritage and Legacy Foundation (KHLF), is working to create the Kalaeloa Heritage Park (KHP) in 'Ewa, O'ahu. Located just east of the Kalaeloa Airport, the 77-acre KHP contains significant cultural, historical, and natural resources unique to the 'Ewa Plain. The mission of the KHP is to promote the stewardship and preservation of Native Hawaiian cultural sites and the cultural landscape of Kalaeloa, to educate the community about cultural traditions and practices, to advocate cultural awareness, and to implement and maintain an authentic Hawaiian presence in the Kalaeloa area.

When the Barbers Point Naval Air Station (BPNAS) closed in 1999, approximately 3,700 acres of land in Kalaeloa were allocated to various Federal, State, and City agencies. In 2009, federal legislation allowed the U.S. Secretary of the Navy to convey 77 acres of Kalaeloa land to the HCDA. The HCDA conferred with their advisory team, the Kalaeloa Archaeological and Cultural Hui, to determine the best way to care for the 77 acres and it was recommended that a separate non-profit entity be established to focus on establishing the KHP. The KHLF was established as a non-profit entity in January 2011.

The HCDA is partnering with the KHLF and community stakeholders to implement the vision and direction set forth in the Kalaeloa Master Plan (2006) to establish an interpretive cultural park. In 2011, the HCDA issued a right-of-entry permit to the KHLF with the intent to eventually establish a long term lease with the KHLF. The HCDA, in partnership with KHLF Board of Directors and Officers and community stakeholders, will be the final authority regarding the implementation of these plans and directives.

KHLF is a Native Hawaiian nonprofit organization formed in 2010 by members of 'Ahahui Siwila Hawai'i O Kapolei (ASHOK) and dedicated residents of the Honouliuli ahupua'a for the purpose of preserving and protecting Native Hawaiian cultural and historical sites of Kalaeloa. Since 1998, ASHOK has worked with the Navy, Barbers Point Redevelopment Commission, and then with the HCDA to preserve these sites.

HCDA and KHLF are working with Townscape, Inc. to complete a CONCEPTUAL PLAN and ENVIRONMENTAL ASSESSMENT (EA) for the KHP. Hawai'i Revised Statutes (HRS) Chapter 343 requires an environmental review of projects that trigger certain statutory conditions. An EA for the KHP is triggered by: 1) Use of State lands and funds; 2) Use within any historic site as designated in the National Register or Hawaii Register, as provided for in the Historic Preservation Act of 1966, Public Law 89-665, or Chapter 6E.

This Draft EA summarizes background research for the KHP site and vicinity: existing and planned uses, land ownership and surrounding land uses; geology, soils and hydrology; flood, tsunami and fire hazards; and biological, historical and cultural resources.

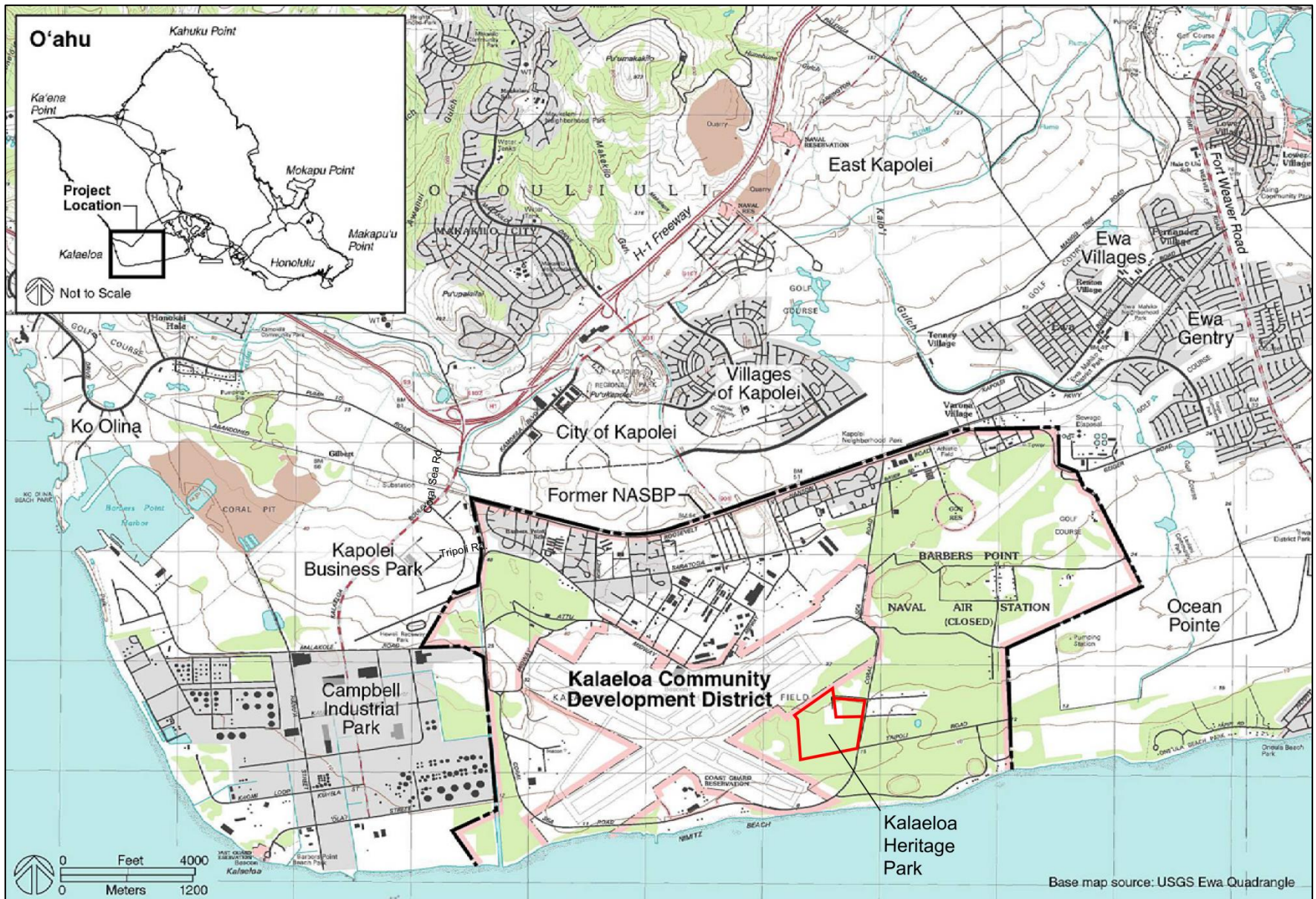


Figure 1. Kalaeloa Heritage Park location

Map adapted from 2011 FEA for Disposal and Reuse of Surplus Property, former NAS Barbers Point

1.1 Project Location

The KHP is located on the ‘Ewa Plain of O‘ahu, approximately 16 miles west of downtown Honolulu near the island’s southwest point (See Figure 1). The 77-acre park includes Tax Map Key (TMK) 9-1-013:069 (11.5 acres) and TMK 9-1-013:067 (65.4 acres) owned by the HCDA. The KHP is bordered by Coral Sea Road to Tripoli Street, along Tripoli Street from the intersection of Coral Sea Road to the Kalaeloa Airport, and along Long Island Street/Prince Williams Road to the Kalaeloa Airport.

1.2 Existing Uses

Of the 77 acres dedicated as the KHP, approximately three acres fronting the current park entrance on Long Island Street have been cleared of invasive vegetation. Visitors are guided along a trail through this “interpretive area” which includes remnants of an ancient Hawaiian village. A section of an ancient Hawaiian trail has been uncovered and restored. Eleven cultural structures have been identified. Mature wiliwili trees are making a recovery on the site, and a variety of native plants are being planted. The cultural structures and biological resources are connected by an interpretive trail.



Figure 2. The cleared interpretive area of the KHP



Figure 3. Traditional Hawaiian kauhale at the KHP

During the summer of 2012, hundreds of volunteers helped build a traditional Native Hawaiian kauhale out of stone, wood, and grass. The kauhale’s frame is made of kiawe and mangrove logs and the roof is made of loulu palm thatch. The low walls are made of coral and the floor is sand. The kauhale serves as the gathering place for visitors to the KHP. The KHLF currently offers cultural site tours and community workdays, mainly in the three-acre cleared interpretive site.

Bone fragments that have been discovered while clearing the heritage park have been placed in a stone structure, Nā Iwi Kūpuna Repository, which was constructed in 2012.

2. SUMMARY OF PROPOSED ACTION

2.1 Short-term Proposed Actions

Short-term proposed actions for the KHP are focused on improving security, preserving cultural and historic sites, and continuing to remove invasive plants and plant native species. Construction of a chain link fence around the 77-acre site designated as the KHP would secure the perimeter along Coral Sea Road to Tripoli Street and along Tripoli Street from the intersection of Coral Sea Road to the existing State Department of Transportation (DOT) Kalaeloa Airport fence, along Prince Williams Road from the existing Kalaeloa Airport fence to Long Island Street, and from Prince Williams Road to Coral Sea Road. Also, it would be beneficial to establish relationships with surrounding property owners in order to look out for one another and improve security.

Approximately three acres within Site 1753¹ have already been cleared of invasive vegetation. This living historical park will serve as the main interpretive area and provide a glimpse of the lives of Native Hawaiians that once lived there. Additional areas of Site 1753 may be cleared in the future to expand the interpretive area. Within the interpretive area, cultural structures include one rectangular enclosure identified as a permanent habitation structure, one agricultural sinkhole with ti plant, one water resource sinkhole, one identified sinkhole burial, one paved trail with upright stones, three L-shaped temporary enclosures, one identified burial ahu, one small storage enclosure, one large sinkhole enclosure identified as a heiau and one site of a plane crash. There are a total of 51 cultural features identified in the archaeological survey of this area, but only eleven story boards will be placed at these specific locations. The cultural sites will be preserved in place.

This interpretive area surrounding Site 1753 will be the main focus of visitor activity in the near term. In order to envision what life was once like for the ancient people of this area, information on cultural structures, their construction, use and mo'olelo associated with these structures will be shared with visitors at the kauhale. Visitors will begin at the kauhale, which serves as the gathering place for visitors to the KHP. At the kauhale, visitors will participate in the initial protocols associated with entering a scared place, which will involve chants and prayers that are facilitated by a kahu, kahuna, or kupuna.

Following the proper protocol and welcoming, visitors will be briefed on safety issues within the interpretive area and then hear a brief history of the former BPNAS and base closure. They will then be guided on a one-hour site tour led by a docent through the site on a "mulched" trail that travels through the eleven cultural sites. Three additional rest shelters will be constructed in this interpretive area. The rest shelters will replicate the other cultural structures found in the KHP: they will be rectangular shaped structures with coral stone walls and thatched roofing and will be placed in some of the exposed areas around the site.

Volunteers will continue to clean up and maintain the interpretive area by removing invasive species and planting more native plants. Native plants including 'Ewa hinahina, or round-leafed chaff-flower shrub (*Achyranthes splendens* var. *rotundata*); naio (*Myoporum stellatum*); maiapilo (*Capparis sandwichensis*); wiliwili (*Erythrina sandwichensis*) and 'ulu, or breadfruit (*Artocarpus altilis*) will continue to be planted.

¹ Site 1753 is referenced in "A Cultural Resource Inventory of Naval Air Station, Barbers Point, O'ahu, Hawai'i: Part I: Phase I Survey and Inventory Summary" (Tuggle, 1997). See Figure 16.



Kalaeloa Heritage Park Conceptual Plan

June 2014
For: Hawaii Community Development Authority
By: Townscape, Inc.

Figure 4. Kalaeloa Heritage Park Conceptual Plan

2.2 Long-term Proposed Actions

Long-term proposed actions for developing the KHP complex will include a multi-purpose Cultural Center, botanical greenhouse, maintenance yard and a caretaker/security cottage. The KHP complex will support the interpretative area by serving as a “classroom” where people can come to learn and participate hands-on in the maintenance and preservation of cultural sites. A conceptual site design was prepared (See Figure 4) that shows the approximate size and array of facilities envisioned for the area. Within the 77 acres of land designated as the KHP, only approximately five acres of land would be used for the development of the complex and parking area (See Figure 5). The majority of the proposed development will be located in the “Munitions Storage²” area of approximately five acres that has been previously bulldozed for military purposes. This placement will minimize disturbance to the remainder of the site which contains the majority of the cultural structures.

The proposed KHP complex will include the following structures and facilities:

Multi-purpose Cultural Center: Layout concepts for this Center are based on the Alaskan Native Heritage Center in Anchorage, Alaska. Cultural artifacts previously removed from the sinkholes and taken elsewhere like the Bishop Museum will eventually be returned to the future KHP Cultural Center.

The design of the Cultural Center will be consistent with the history and cultural stories of the region. The Cultural Center will be constructed of coral from coral quarries within the area. Solar photovoltaic panels will be installed on the roof of the Cultural Center.

The Cultural Center will serve as the gathering place for visitors prior to their entering into the interpretative area. Uses within the Cultural Center will include:

- Ticketing area to control access into the Cultural Center and interpretative park area
- Circular recessed stage with seating area around it to offer cultural demonstrations and entertainment to visitors prior to their guided tour in the interpretative park area
- Meeting and workshop rooms to support cultural and educational activities, including lectures, demonstrations and classes
- Education center for future partnerships with schools and college programs
- Theatre and stage to support the preservation and enhancement of the Native Hawaiian performing arts and culture
- Kitchen and dining area that can also be used to host other functions in addition to providing food and refreshments to visitors at the heritage park
- Office space to include administrative offices, security, medical room, staff lounge and break room
- Restroom facilities
- Gift shop area and gallery space to showcase and promote Native Hawaiian artwork
- Lanai area

² As identified in “A Cultural Resource Inventory of Naval Air Station, Barbers Point, O’ahu, Hawai’i: Part I: Phase I Survey and Inventory Summary” (Tuggle, 1997). See Figure 16.



Figure 5. Kalaeloa Heritage Park Complex

Parking: A paved (pervious material) parking area will be located within the previously bulldozed “Munitions Storage” area. Parking area, including circulation, will be approximately 90,300 square feet (about two acres) to provide stalls for vehicular and bus parking. In the long-term plan, the main entrance will be from Tripoli Street and the service entrance will be from the intersection of Coral Sea Road and Long Island Street. Approximately 129 vehicular stalls, three bus parking stalls, and six handicap parking stalls will be provided.

A drop off area located at the front of the Cultural Center will allow vehicles to drop off passengers before proceeding towards the parking area. Visitors will also have the option of directly entering into the parking lot. Visitors arriving in buses will also be dropped off at the front of the Cultural Center. Buses will then proceed towards the designated bus parking area, which will be located north of the drop off area. Additional gravel overflow parking of approximately 34,900 square feet, accommodating

approximately 80 cars, will be located south of the paved parking area. Based on estimated vehicle counts in Table 5, the proposed paved and designated gravel overflow parking area within the KHP will accommodate all visitors during peak hours.

During at least one day a week, approximately 25,000 square feet of the parking area (40 stalls) will be converted into an open space to host a farmers' market. The market will include produce from local farmers in addition to the KHP aquaponics and greenhouse produce.

Maintenance Yard: The maintenance yard, located at the end of Long Island Street, just west of Prince Williams Road, consists of a Maintenance Shed of approximately 1,500 square feet that will be constructed within a 10,500 square feet chain link fence secured area. This area will be used to store and secure equipment (such as mulching equipment, weed wackers, chainsaws) used to maintain the heritage park including trails and cultural sites.

Botanical Greenhouse and Aquaponics: A greenhouse structure of approximately 750 square feet will provide space for an aquaponics system on the northeastern side of the Cultural Center. Produce from the aquaponic system will contribute to the proposed weekly, onsite farmers' market.

Caretaker/Security Cottage: A 1,200 square foot cottage will be located at the north end of the parking area. The cottage will be situated within viewing distance of the Maintenance Yard and Cultural Center for live-in surveillance to protect the building, equipment and cultural sites.

Trail access to Site 1752³: Site 1752 is another complex of cultural and historic sites located in a dense kiawe forest adjacent to the western boundary of the property. The KHP plans to eventually provide access for cultural practitioners and visitors (accompanied by docents) to approximately seven acres of Site 1752 by creating a mulched trail beneath the tree canopy. A path located along the southern boundary of the parcel will allow the KHP staff to take visitors via "golf cart" to access Site 1752. The path will connect to a dirt access trail that will run along the boundary of the parcel adjacent to the DOT Airport fence. The access trail will connect to Prince Williams Road. The dirt access road along the fence located between the KHP and the airport will serve as a service access road to provide access to cultural sites within Site 1752 for maintenance work.

Unlike Site 1753, the larger area of Site 1752 will not be cleared of invasive tree species. Only the immediate vicinity of the cultural sites within Site 1752 will be cleared, which will include removing large kiawe trees. Uncleared sections of the KHP will serve as an onsite archaeological dig conducted through a collaborative partnership between the Navy Region Hawai'i archaeologists and the University of Hawai'i and other institutions and schools that wish to participate in archaeological research activities. This area will be preserved for future study by a certified and qualified archaeologist and anthropologist to add to the data already known regarding the ancient history of the KHP.

Table 1 provides Estimated Daily Attendance at the KHP for various land uses and activities: Interpretive Area (people arriving by bus), Interpretive Area (people arriving by car), Farmers' Market (Saturdays), Community Meetings (evenings), Volunteer Days, and Staff. Groups of approximately ten people will

³ Site 1752 is referenced in Phase 1 Cultural Resource Inventory for BPNAS (Tuggle, 1997). See Figure 16.

embark on tours with a minimum interval of 20 minutes between groups. Farmers' markets will be held on Saturdays. The multi-purpose Cultural Center will have three community meeting rooms accommodating 30 to 60 people. Community meetings will typically happen in the evenings. Volunteer work days will involve groups of 10 to 30 people participating in invasive plant removal, trail maintenance, and preservation of cultural sites. The Education Center will provide workshop and classroom facilities for up to 100 students. The Performing Arts Theatre will accommodate no more than 100 people. During a cultural event, up to 300 visitors are anticipated throughout the day. The staff of 10 to 15 people depending on the activity or event includes docents, administrative and security personnel.

Table 1. Estimated Daily Attendance at the KHP

Land Use/ Activities	Typical Weekday	Typical Saturday	Typical Sunday	Busy Weekday	Busy Saturday	Busy Sunday	Large Event
Interpretive Park (bus) ¹	40	0	60	60	80	80	0
Interpretive Park (car)	10	0	20	20	30	30	0
Farmers' Market ²	0	100	0	0	150	0	0
Community Meetings ³	30	30	30	60	60	60	0
Volunteer Work Days ⁴	10	0	20	20	0	30	0
Education Center ⁵	40	0	0	60	0	0	0
Performing Arts Theatre ⁶	0	0	40	0	0	60	80
Cultural Event ⁷	0	0	0	0	0	0	300
Staff ⁸	10	15	15	15	15	15	15
TOTAL Persons Per Day	140	145	185	235	335	275	395
Number of days per year	209	40	40	52	12	9	3
Visitors per year	29,260	5,800	7,400	12,220	4,020	2,475	1,185

¹ Groups of approximately 10 people would depart on tours at a minimum interval of 20 minutes.

² Anticipated to be held on Saturday mornings.

³ Three rooms accommodating 30 to 60 people. Meetings will typically happen in the evenings.

⁴ Invasive plant removal, trail maintenance, and preservation of cultural sites.

⁵ Workshop and classroom facilities for up to 100 students. Daily attendance will vary.

⁶ Theatre will accommodate up to 100 people. Attendance will vary depending on performance.

⁷ Cultural Event mostly likely to held on a weekend with up to 300 visitors throughout the day. No interpretative park tours would be held during a cultural event.

⁸ Includes docents, administrative and security staff.

Estimated daily visitors to the KHP is 140 on a typical weekday, 145 on a typical Saturday, 185 on a typical Sunday, 235 on a busy weekday, 335 on a busy Saturday, 275 on a busy Sunday, and 395 during a large event. Large events may be cultural festivals or fundraisers for the continued maintenance of the KHP and preservation of cultural sites.

Table 2 summarizes Estimated Annual Attendance. The KHP anticipates eventually hosting up to 20,120 visitors annually at the Interpretive Park and Visitor Center alone, and up to 62,360 visitors for all activity, including farmers’ market, community meetings, Education Center, Performing Arts theatre, volunteer workdays, cultural events, and staff.

Table 2. Estimated Annual Attendance for the KHP

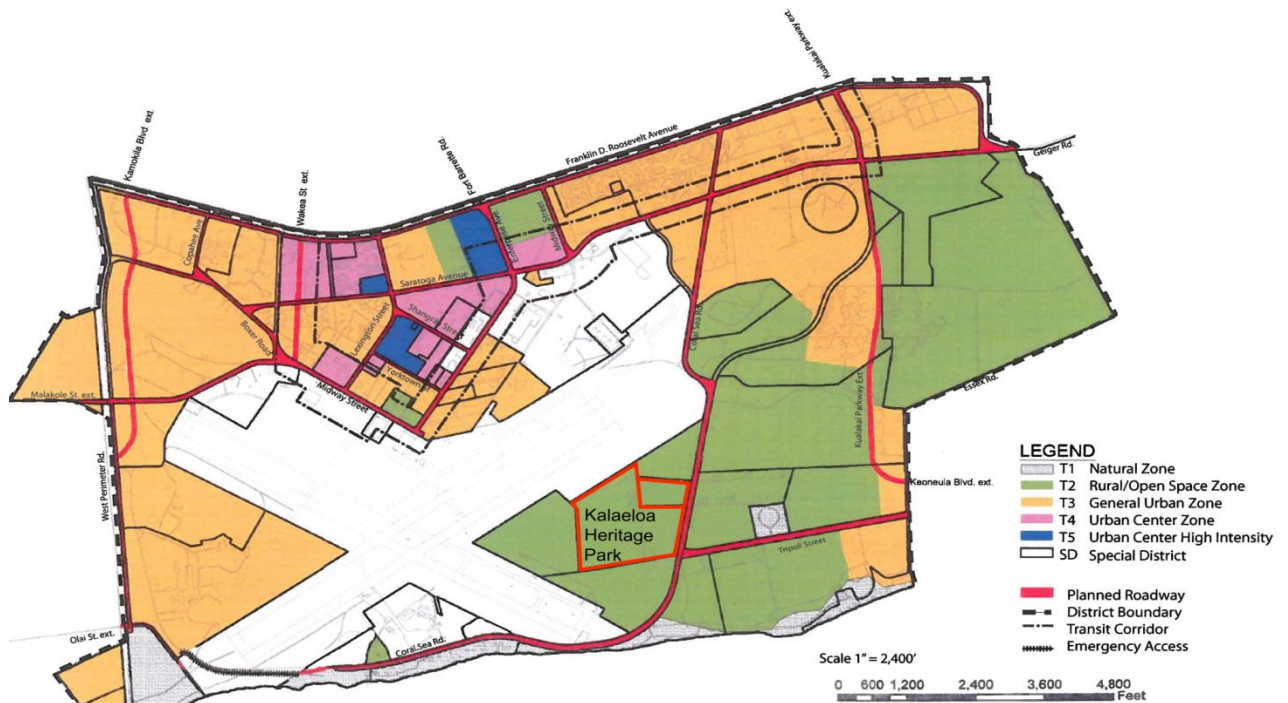
TYPE OF DAY	ATTENDANCE	# DAYS PER YEAR	ANNUAL ATTENDANCE
Interpretive Park and Visitor Center			
Typical Weekdays	50	209	10,450
Typical Saturdays	0	40	0
Typical Sundays	80	40	3,200
Busy Weekdays	80	52	4,160
Busy Saturdays	110	12	1,320
Busy Sundays	110	9	990
Large Event	0	3	0
Interpretive Park Total			20,120
KHP TOTAL (all activities)			
Typical Weekday	140	209	29,260
Typical Saturday	145	40	5,800
Typical Sunday	185	40	7,400
Busy Weekday	235	52	12,220
Busy Saturday	335	12	4,020
Busy Sunday	275	9	2,475
Large Event	395	3	1,185
KHP TOTAL (Interpretive Park and other activities)			62,360



Kalaeloa Master Plan Preferred Land Uses

Figure 6. Kalaeloa Master Plan Preferred Land Uses

Map source: HCDA



Map source: KCDD Rules, 2012

Figure 7. Kalaeloa Community Development District (KCDD) Regulating Plan

3. RELATIONSHIP TO FEDERAL & STATE PLANS AND POLICIES

3.1 Barbers Point Naval Air Station Disposal and Reuse

A 1999 Environmental Impact Statement (EIS) documents four alternatives considered for the disposal and reuse of the BPNAS: no action, small airport, large airport, and the preferred alternative (ultimately selected). Of the 3,833 acres of the former BPNAS, 1,238 acres were retained by the Navy and approximately 457 acres were transferred to other federal agencies. The remaining acres were the focus of the redevelopment plan, including the 77-acre KHP.

The federal government funded the Base Realignment and Closure (BRAC) to clean up and facilitate the transition of land ownership. In March 1997, the BPNAS Redevelopment Commission adopted a Community Redevelopment Plan which identified various State and County government agencies as receiving entities for the surplus land. Since the base closure, approximately two-thirds of the surplus lands have been conveyed to the respective end users.

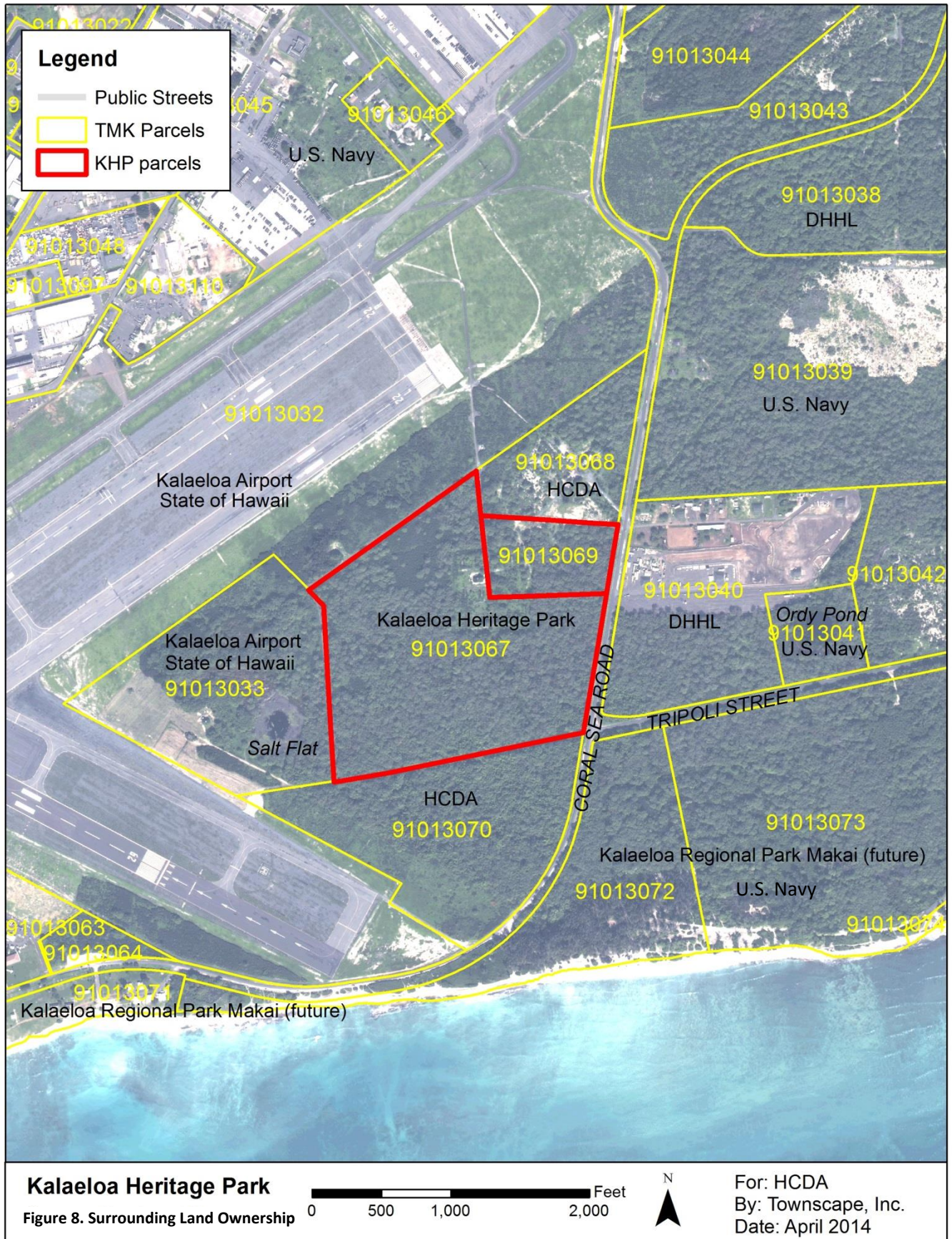
3.2 Kalaeloa Community Development District

In June 2002, the HCDA assumed responsibility for implementation of the BPNAS Community Redevelopment Plan, and expanded the designation of the Kalaeloa Community Development District (KCDD) to encompass all of the land within the former BPNAS. Completed in 2006, the HCDA's Kalaeloa Master Plan is a redevelopment effort encompassing approximately 3,695 acres of KCDD with a full build out of approximately 25 years. In addition to housing, industrial and commercial development, the plan provides for the preservation of open space, shoreline access, recreation, cultural sites, and protected species and habitats (HCDA 2006). The KHP lies within the "Recreation/Cultural" zone identified in the Kalaeloa Master Plan "Preferred Land Uses" map (See Figure 6), which includes high-value wetlands, coral/cultural sinks, and archaeologically significant sites (HCDA 2006).

The KCDD Rules (Hawai'i Administrative Rules Chapter 215, Title 15) adopted in September 2012 organized all parcels in the KCDD into transect zones with standards for development, use and construction within each zone. The KCDD Rules supersede any provisions of the City and County of Honolulu Land Use Ordinance, 'Ewa Development Plan, or BPNAS Community Redevelopment Plan. According to the KCDD Rules, the KHP parcels are designated as T2 Rural/Open Space (See Figure 7). "The T2 rural/open space zone shall consist primarily of open space, parks and limited agricultural use. Cultural, archaeological and environmental uses and sites shall also be located within the T2 rural/open space zone" (KCDD Rules, p. 215-27).

3.3 Adjacent Land Uses

The KHP is surrounded by government-owned lands in a largely undeveloped sector of the KCDD (See Figure 8). The Department of Parks and Recreation (DPR) is operating a beach camping area at Kalaeloa under a licensing agreement with the Navy. The Navy operates the Nimitz and White Sands beach parks at Kalaeloa which are open to the public. The Navy intends to retain the two beach parks. Existing City shoreline parks include nearby One'ula Beach Park and 'Ewa Beach Park.



The KHP is bordered by the DOT Kalaeloa Airport (TMK 9-1-013:032) to the northwest. Kalaeloa Airport provides a launch site for Coast Guard and Hawai'i Army National Guard operations, a training base for general aviation, an emergency response platform, alternate landing site for airlines and the military, and extension of the capacity of Honolulu International Airport. The runways date from 1942. (State DOT 2013).

The Department of Hawaiian Homelands (DHHL)-owned parcels TMKs 9-1-013:040 and 9-1-013:038 are to the east and northeast of the KHP, across of Coral Sea Road. In reference to these parcels, the DHHL Kapolei Regional Plan (2010) states that "DHHL Lands in Kalaeloa are not intended for residential homestead use due to the abundance of land in Kānehili and Kapolei II for residential development, and lack of infrastructure in Kalaeloa. Those land parcels are intended for revenue generation."

The HCDA has received proposals to establish a solar farm facility on the parcel makai of the KHP (TMK 9-1-013:070).

Ordy Pond, located on TMK 9-1-013:041, is still owned by the Navy. The parcel is designated as a "Natural Zone", as are the oceanfront lands makai of Coral Sea Road and Eisenhower Road. "The T1 natural zone shall consist primarily of lots along the ocean. The T1 Natural zone is comprised of natural landscapes, including beaches and vegetation with limited agricultural use" (KCDD Rules, 2012).

3.4 O'ahu General Plan

The O'ahu General Plan sets forth the long-range objectives and policies for the general welfare of the O'ahu community and, together with the regional development plans and sustainable communities plan, provides a direction and framework to guide the programs and activities of the City and County of Honolulu. The original 1982 General Plan was amended in 2002, and is currently undergoing the O'ahu 2035 General Plan Focused Update.

The proposed KHP supports the following objectives of the General Plan:

To protect and preserve the natural environment.

- Seek the restoration of environmentally damaged areas and natural resources.
- Protect plants, birds, and other animals unique to the State of Hawai'i and the Island of O'ahu.
- Provide opportunities for recreational and educational use and physical contact with O'ahu's natural environment.

To protect Oahu's cultural, historic, architectural, and archaeological resources.

- Encourage the restoration and preservation of early Hawaiian structures, artifacts, and landmarks.
- Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts.
- Seek public and private funds, and public participation and support, to protect social, cultural, historic, architectural, and archaeological resources.

Additionally, a major objective for the physical development of O'ahu is "to develop a secondary urban center in 'Ewa with its nucleus in the Kapolei area." This will mean an increasing number of people residing in and visiting 'Ewa, creating further demand for and benefit from developing a resource like the KHP.

3.5 ‘Ewa Development Plan

The ‘Ewa Development Plan (DP) provides a vision for ‘Ewa's future development, and policies and guidelines to implement that vision. The goals of the proposed KHP are consistent with the ‘Ewa DP vision to provide communities with open space and recreational opportunities; protect natural resources; and preserve historic and cultural resources in ‘Ewa.

Open Space – ‘Ewa will be built around a regional system of open spaces and greenways so that ‘Ewa has the feel of a network of communities ‘within a garden’. To help fulfill this vision, the ‘Ewa Shoreline Park will stretch along the entire coastline. It will be anchored by the Kalaeloa Regional Park, envisioned as a major nucleus for community activities that will attract visitors from all of O‘ahu. The park will provide “beach-oriented recreation and support facilities near the shoreline, other active recreation facilities in mauka areas, and preserves for cultural and archaeological resources and for wildlife habitats such as wetlands and endangered plant colonies.”

The proposed KHP is located just mauka of the proposed Kalaeloa Regional Park, and will also preserve cultural and natural resources for the benefit of the public. Kalaeloa Regional Park will provide access from the KHP to the coastline.

Natural Resources - The ‘Ewa DP contains guidelines for the protection of natural resources in each section of the plan relating to development and open space. Additionally, the following guidelines for the protection of natural resources are relevant to the KHP:

- Protect valuable habitat for waterbirds and other endangered animals and plants.
- Protect endangered fish and invertebrates in sinkholes.
- Require surveys for proposed new development areas to identify endangered species habitat, and require appropriate mitigations for adverse impacts on endangered species due to new development.

The KHP will protect native and endangered plant species and wildlife habitat by avoiding development in areas where endangered species have been identified. All sinkholes are considered a cultural and natural resource, and will be protected from damage. The KHP will also continue to remove invasive plant species and plant native species such as ‘Ewa hinahina.

Historic and Cultural Resources – The ‘Ewa DP policies include: preserve significant historic features from the plantation era and earlier periods, including Native Hawaiian cultural and archaeological sites; treatment of sites will vary according to their characteristics and potential value; use in situ preservation and appropriate protection measures for historic, cultural, or archaeological sites with high preservation value because of their good condition or unique features. In such cases, the site should be either restored or remain intact out of respect for its inherent value. The following guidelines as stated in the ‘Ewa DP suggest how the general policies for Historic and Cultural Resources should be implemented.

- **Adaptive Reuse** – “Allow historic sites to be converted from their original intended use to serve a new function if it can be done without destroying the historic value of the site, especially if its interpretive value is enhanced.”
- **Accessibility** – “Public access to an historic site can take many forms, from direct physical contact and use to limited visual contact. Determine the degree of access based on what would

best promote the preservation of the historic, cultural and educational value of the site, recognizing that economic use is sometimes the only feasible way to preserve a site. In some cases, however, it may be highly advisable to restrict access to protect the physical integrity or sacred value of the site.”

- **Compatible Setting** – “The context of an historic site is usually a significant part of its value. Plan and design adjacent uses to avoid conflicts or abrupt contrasts that detract from or destroy the physical integrity and historic or cultural value of the site.”

The KHP will preserve open space, natural and cultural resources within the ‘Ewa Community Growth Boundary, and provide an educational interpretive resource for visitors to the area. The multipurpose Cultural Center will be designed and sited to enhance the public’s understanding of the cultural sites, following the guidelines set forth in the ‘Ewa DP.

3.6 State Historic and Cultural Site Review

HRS Chapter 6E-8 and HAR Chapter 13-275, (Historic Preservation Review-State Historic Preservation Division (SHPD)) requires review of the potential effect of projects on historic properties, aviation artifacts, or burial sites. HRS Chapter 343 requires consideration of the project’s potential effect on cultural beliefs, practices, and resources.

The Cultural Resource Inventory (CRI) of BPNAS (Tuggle and Tomonari-Tuggle, 1997) includes a survey of previous archaeological research and general location of cultural and historic sites, including those found in the KHP. Part II of the CRI provides detailed mapping and analysis of selected sites. The Cultural Impact Assessment (Appendix B) for this EA summarizes archaeological information, as well as potential impacts of developing the KHP as an interpretive center open to the public and mitigation measures that will be taken to avoid damage to the sites.

3.7 Federal Clean Water Act

The Clean Water Act (CWA) of 1972 is the primary federal law that protects the nation’s waters, including lakes, rivers, and coastal areas. Section 401 of the CWA requires a Water Quality Certification (WQC) be obtained from the State for actions that require a federal permit to conduct an activity, construction or operation that may result in discharge to waters of the U.S. The State of Hawai’i Department of Health (DOH), Clean Water Branch (CWB) issues the WQC for Hawai’i waters. Section 402 of the CWA requires a National Pollution Discharge Elimination System (NPDES) permit for point source discharges including storm water discharges associated with construction activities. The NPDES permit coverage is required for construction activities that disturb a total land area greater than one acre and discharge storm water from the construction site to waters of the U.S. The DOH CWB administers the NPDES program for Hawai’i waters.

4. POTENTIAL PERMITS AND APPROVALS

Potential permits, approvals, and consultation requirements for this project include but are not limited to those listed below:

Table 3. List of Potential Permits, Approvals, and Required Consultations

Oversight Agency	Permit, Approval, or Consultation
Department of Land and Natural Resources, SHPD	National Historic Preservation Act Section 106 Consultation; Archaeological Preservation Plan; Burial Treatment Plan
HCDA	Development Permit
State of Hawai‘i Department of Health , Clean Water Branch	Section 402 NPDES (stormwater) Discharge Permit coverage for discharges of storm water (may be required if actions disturb >1 acre)
City and County of Honolulu DPP, Land Use Permits Division	Building Permits
City and County of Honolulu DPP, Site Development Division	Grading and Grubbing Permits

5. DESCRIPTION OF THE EXISTING ENVIRONMENT, PROJECT IMPACTS AND MITIGATIONS

5.1 Climate

The climate in the area of the project site is typical of the leeward coastal lowlands of O‘ahu. This climate is characterized by a long southern exposure; temperatures ranging from an average daily maximum of 84.4 degrees Fahrenheit (°F) to an average daily minimum of 70.0 °F; frequent northeasterly tradewinds ranging from 8 to 18 miles per hour; and an average annual rainfall of 20 inches (Rainfall Atlas of Hawai‘i 2011). Rainfall has been measured at the nearest station in ‘Ewa Beach since 1960. Summer and winter are distinct seasons, with average rainfall only 0.37 inches in June, and 3.63 inches in December.

Impacts and Mitigation

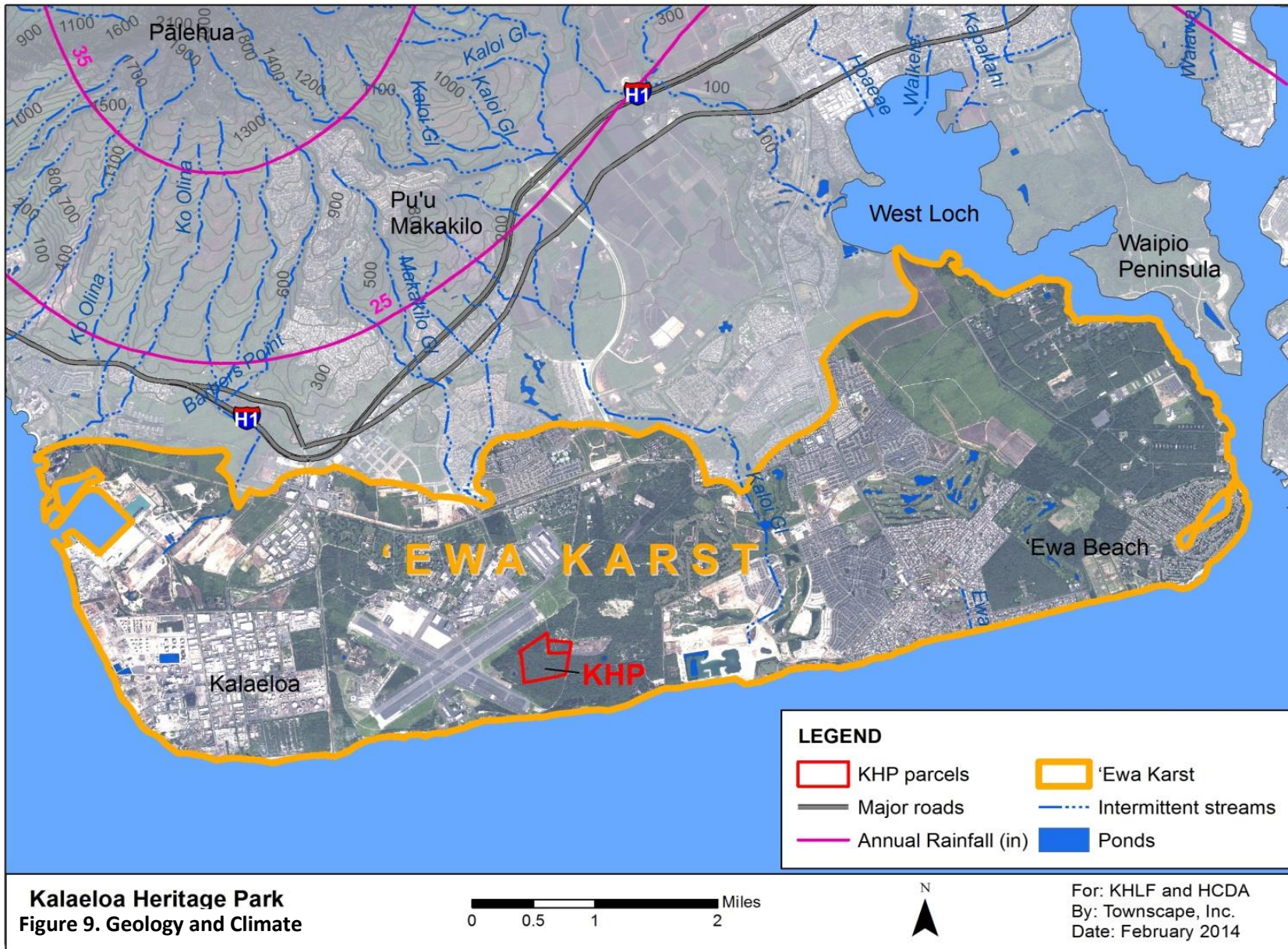
Impacts on air quality due to construction of roads and structures are anticipated to be minor and short-term. Normal trade wind patterns along the windward shore area should disperse short-term pollutant emissions generated by construction activities. The short-term effects on air quality during construction will be mitigated by compliance with State DOH Administrative Rules, Title 11, Chapter 60, "Air Pollution Control." Best management practices during construction that are expected to minimize adverse effects include:

- Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of least impact;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping and rapid covering of bare areas, including slopes;
- Controlling of dust from shoulders and access roads;
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- Controlling of dust from debris being hauled away from project site.

5.2 Geology and Soils

The island of O‘ahu was formed by two shield volcanoes that formed between three to four million years ago. The Wai‘anae Volcano created the western half of O‘ahu, and the Ko‘olau Volcano formed the Ko‘olau Range and Schofield Plateau. The KHP is located at the edge of the Schofield Plateau on a coastal plain, which is composed of alternating layers of coral reef and alluvial volcanic sediments (caprock) overlying the volcanic basalt. The caprock ranges from 750 to 1,000 feet thick near the coast. The upper 100 feet of caprock is marine sediment, consisting mainly of coral reef with minor layers of shell fragments and beach sands.

Portions of the ‘Ewa region, including Kalaeloa, consist of a geology known as karst, where limestone bedrock is dissolved by the carbonic acid found in rainwater. The acidity in the rainwater eventually erodes enough limestone to cause the surface layer to collapse, creating a combination of sinkholes, caves, and underground channels. Within this region, water seeps and flows through these underground tunnels, caves, and streams. The ‘Ewa Karst, covering about 31 square miles, is the largest network of karsts on O‘ahu. Some sinkholes are no more than four to five feet deep, while some are as deep as ten feet and extend to the water table.



In 1972 the U.S. Department of Agriculture (USDA) Soil Conservation Service conducted a soil survey of the Hawaiian Islands to determine classification and capability for farming and construction. The survey identified the soil type underlying the KHP as “Coral outcrop (CR)”, which formed in shallow ocean water during the time the ocean stand was at a higher level. Small areas of coral outcrop are exposed on the shore and plains. Other soil types found in the vicinity of KHP include “Beaches (BS)” along the coast. The adjacent Kalaeloa Airport sits on “Fill land (FL)”, which consists of areas filled with material from dredging, excavation, garbage, and general material from other sources (See Figure 9).

Impacts and Mitigation

The proposed action will follow Best Management Practices (BMPs) to minimize erosion and sedimentation that may result from construction activities. Sinkholes will be avoided. The area to be developed has been previously disturbed by bulldozer. No significant impacts to the coral karst formations underlying the KHP are anticipated.

There do not appear to be any hazardous materials within the project area. However, soils should be tested prior to reuse or disposal. Any waste generated will be handled in accordance with State solid waste disposal laws. If encountered, all appropriate measures will be taken while handling any hazardous waste. Procedures include wearing proper personal protective equipment, dust and runoff controls, and soil and groundwater handling and disposal procedures.

5.3 Topography and Drainage

The KHP is located on the southern edge of the ‘Ewa Coastal Plain, which has a relatively regular surface that slopes gently to the ocean at about 20 feet per mile. The maximum elevation within the KHP is approximately 20 feet above mean sea level (amsl) along the northern boundary, to ten feet amsl at the seaward boundary. The average slope across the site is approximately 0.5 percent. Prominent topographic features include sinkholes and historic/cultural sites.

Impacts and Mitigation

The proposed action is not anticipated to have a significant effect on the topography of this naturally level site. Road improvements, parking areas and structures will be sited and designed to minimize the amount of cut and fill needed. Encroachment on or damage to sinkholes will be avoided.

5.4 Hydrology

5.4.1 Surface Water

There is no natural surface water flow through the project area and no evidence of channels where water would have flowed in the past. The highly permeable soil and rock allow storm water to percolate into the ground. Due to the flat topography, runoff collects in natural sinkholes for infiltration into the subsurface (Tuggle, 1997).

While no wetlands exist within the boundaries of the KHP, Ordy Pond is a notable anchialine pond located north of Tripoli Street just east of the KHP boundary. The pond's surface area is approximately one acre. Like all anchialine ponds, it is hydraulically connected to the ocean, and the water level fluctuates with the tide. Mangroves are present around the site. Ordy Pond was cleaned by the Navy due to previous disposal there of ordnance related scrap materials, pallets, manuals, packing materials, and agitene solvent drums (Navy, 1999).

5.4.2 Groundwater

There are two groundwater bodies underlying Kalaeloa in the vicinity of the KHP: a deep confined aquifer in the underlying basalt and an overlying unconfined caprock aquifer. Both aquifers are in direct hydraulic contact with seawater. Groundwater in the confined aquifer is too deep to be susceptible to contamination from the surface, while the caprock aquifer is highly vulnerable to contamination. While both aquifers qualify as underground sources of drinking water under the federal Safe Drinking Water Act, the State of Hawai'i has a more stringent standard for salinity and does not recognize these aquifers for potable use due to their chloride content ranging from 250-5,000 mg/L (Mink and Lau, February 1990).

The water table is roughly at sea level, ranging from zero at the shoreline to approximately 20 feet below ground surface along the northern boundary of the KHP. Production wells have not been developed, and there are no beneficial human uses of this aquifer. However, the caprock aquifer has received surface runoff via injection wells and drywells. The BRAC Cleanup Plan for Barbers Point, O'ahu, Hawaii (Navy 1998) indicated that low contaminant concentrations measured in the groundwater were uniformly distributed across BPNAS and are considered to be representative of "background" levels, with the exception of one well in the vicinity of a fuel spill in an area retained by the Navy. Samples collected from wells around the base between January 1995 and September 1996 were analyzed for pesticides, herbicides, and metals. In 1998, the Navy removed sediments with contaminant concentrations exceeding hazardous waste criteria.

Impacts and Mitigation

The proposed parking areas and structures will increase the amount of impervious surface area on the project site and, therefore, will increase the potential volume of runoff generated. This increase, however, is negligible in relation to the overall drainage pattern which includes large areas mauka of the project site. Thus, the potential for surface flows reaching the ocean as a result of the project is negligible.

Excavation and grading activities associated with construction of the proposed improvements will comply with City grading ordinances and include appropriate erosion control measures. Through the

incorporation of construction BMPs that may include on-site retention ponds and silt fences, storm water runoff will be contained on site and will not enter State waters. However, if during any phase of construction it is anticipated that an area larger than one acre will be graded, and that storm water runoff may enter State waters, a NPDES Permit for construction related storm water discharges which specifies BMPs to minimize water quality impacts will be procured from DOH to protect coastal water quality.

5.5 Visual and Aesthetic Resources

The 'Ewa coastal plain is dominated by dry scrub forest, opening into sandy dune environments near the ocean. The KHP is part of a cultural landscape with scenic resources limited by kiawe scrub forest and existing military development. Most of the 77-acre site is covered by dense forest, with the exception of the interpretive area and baseyard area.

Impacts and Mitigation

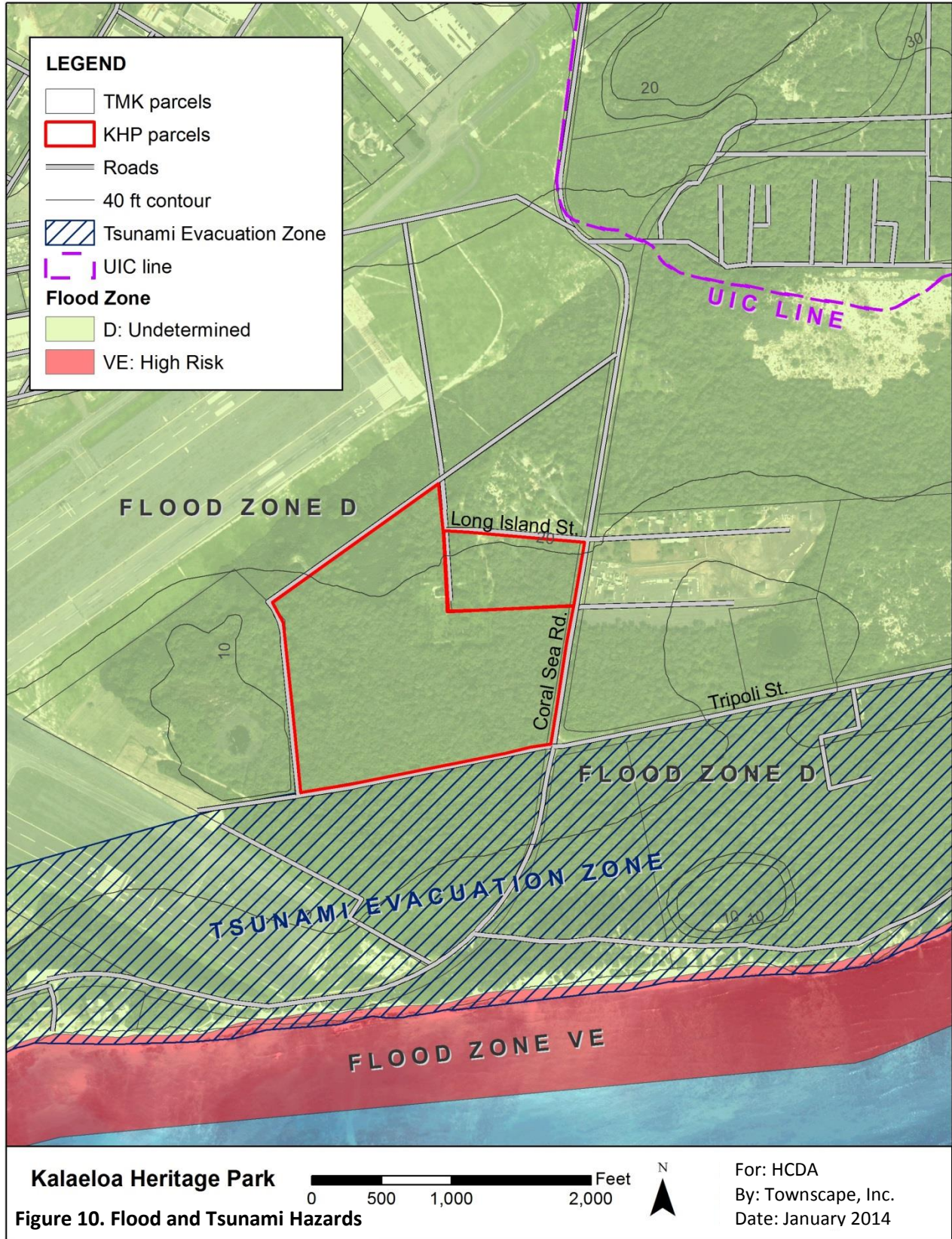
The KHP will protect the visual resources of cultural and historical sites, as well as mature wiliwili groves and other native plant species. The cleared interpretive area helps connect visitors to the past landscape with small villages clustered around sinkholes, religious sites and agricultural mounds. The proposed project is important in preserving open space in 'Ewa as planned development replaces former agricultural lands mauka of the project site.

5.6 Noise

Noise from construction related activities will likely be unavoidable during the construction phase. However, there are no noise-sensitive land uses in the immediate vicinity that could be adversely affected. Unavoidable construction noise impacts will be mitigated to some degree by the contractor's compliance with provisions of the State DOH Administrative Rules, Chapter 11-46, "Community Noise Control." These rules require a permit if the noise levels from construction activities are expected to exceed the allowable levels stated in the Chapter 46 rules. The rules also require that construction equipment and onsite vehicles requiring an exhaust for gas or air be equipped with mufflers. Also, the guidelines for the hours of heavy equipment operation and noise curfew times as set forth by the DOH noise control regulation must be adhered to. Ambient noise levels in the vicinity of the project site may increase slightly as a result of the associated construction-related increase in vehicular activity.

Impacts and Mitigation

Increased visitor numbers to the KHP and vehicular activity associated with the anticipated long-term population growth in the 'Ewa region may slightly increase ambient noise levels in the vicinity of the project site. This is anticipated to have negligible impacts in relation to the overall increase in traffic as a result of regional development.



5.7 Flood and Tsunami Hazards

The flat topography of the project area combined with the highly permeable karst allows storm water runoff to easily infiltrate and collect in natural sinkholes and percolate into the subsurface. However, during extreme precipitation events storm water can overflow areas of the site and sheet-flow into the ocean.

Flood zones are geographic areas that the Federal Emergency Management Agency has defined according to varying levels of flood risk and type of flooding. These zones are depicted on the Flood Insurance Rate Maps for the State of Hawai‘i. The KHP is located in Flood Zone D (“Unstudied areas”) where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available. A quarter of a mile from the KHP, on the coast, is flood zone VE (“High Risk Areas”)—coastal areas subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action (See Figure 10).

In 2010, the City and County of Honolulu Department of Emergency Management and the National Oceanic and Atmospheric Administration completed updates to the O‘ahu tsunami evacuation zone maps using historic tsunami data and spatial modeling techniques. The KHP parcels are just outside the tsunami evacuation zone, which is the area makai of Tripoli Street (See Figure 10).

The Underground Injection Control (UIC) program serves to protect the quality of Hawaii’s underground sources of drinking water from chemical, physical, radioactive, and biological contamination that could originate from injection well activity. The KHP is located makai of the UIC line, meaning that the underlying aquifer is not considered drinking water source, and a wider variety of wells are allowed with a UIC permit or exemption (See Figure 10). Mauka of the UIC line, the underlying aquifer is considered a drinking water source, and requirements for limited types of injection wells are more stringent.

Impacts and Mitigation

Due to low rainfall levels and highly permeable karst geology, flooding is not anticipated to affect the proposed KHP. However, structures and landscaping will be designed to minimize the amount of impervious surfaces, allowing water to percolate into the ground and minimize flooding during extreme weather events.

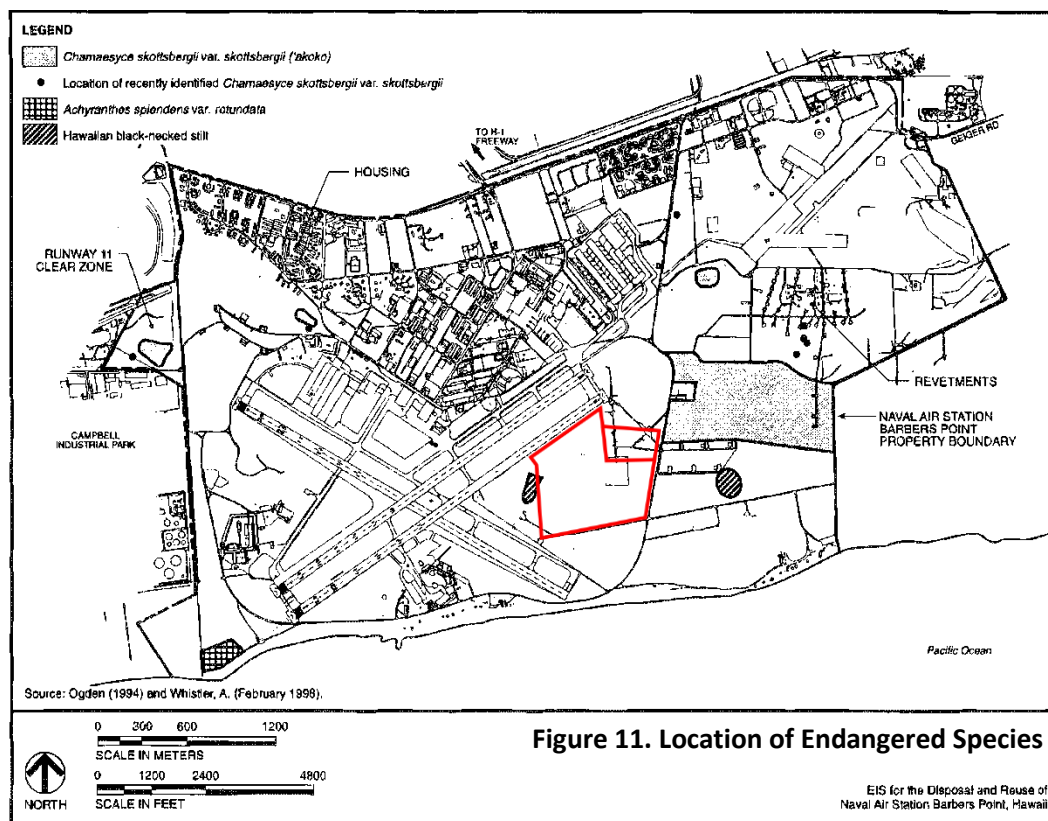
Construction of the proposed facility is unlikely to introduce or release into the soil any substance that could adversely affect ground water. Additionally, the project site is below the UIC “no-pass” zone therefore, any irrigation with non-potable water poses no risk to potable water aquifers.

5.8 Biological Resources

5.8.1 Flora

The majority of existing vegetation at the KHP is lowland scrub and dryland forest dominated by invasive plants such as kiawe (*Prosopis pallida*) and koa haole (*Leucaena leucocephala*), with a variety of shrubs, grasses, and vines. Although kiawe is the dominant tree, there are stands of native wiliwili trees (*Erythrina sandwichensis*) that can be defined as mature forests invaded by kiawe. The remnant native dry forest is significant, especially because wiliwili has a strong traditional association with the 'Ewa Plain (Tuggle, 1997).

The EIS for the BRAC (Navy, 1999) identifies the distribution of endangered species within the former BPNAS based on botanical surveys conducted by Ogden (1994) and Whistler (1998). Areas of the BPNAS with documented endangered species were not within the boundaries of the proposed KHP (See Figure 11). Two listed endangered plant species were found in other areas of the base: the endemic 'Ewa Plain 'akoko (*Chamaesyce skottsbergii* var. *kalaeloana*); and the endemic round-leafed chaff-flower shrub (*Achyranthes splendens* var. *rotundata*).



The endemic 'Ewa Plain 'akoko was federally listed as endangered on August 24, 1982 (U.S. Fish and Wildlife Service (USFWS), 1982). 'Akoko grows in coastal vegetation and dry shrub land. The largest population of 'akoko plants occurs on land outside and east of the KHP. Estimates made in 1994 put this population at between 100 and 500 individuals (Whistler, February 1998). The endemic round-leafed

chaff-flower shrub (*Achyranthes splendens* var. *rotundata*), or ‘Ewa hinahina, was federally listed as endangered on March 26, 1986 (Ogden, 1994). It occurs at low elevations in open, dry forest remnants, open thickets, on talus or rocky slopes, or on coralline plains (Wagner, Gerbst, and Sohmer, 1990). In 1991, approximately 86 individuals were reported in a 287-square yard area in the southwest corner of the base.

In addition, pua pilo (*Capparis sandwichiana* var. *roharyi*), an endemic shrub federally listed as a species of concern, occurs in kiawe and lowland scrub zones (Ogden, 1994), and is known to exist in the same area as the *Achyranthes splendens* var. *rotundata*. Other endemic plant species found on the ‘Ewa Plain include the sub-shrub hinahina (*Hebiotropium anamalum* var. *argenteum*) and the small shrub-like sandalwood tree (*Sanblurn elliptisum*) in the kiawe and lowland scrub zone (Ogden, 1994).

5.8.2 Fauna

There are no federally-listed, threatened or endangered animal species known to occur within the KHP; nor are there designated or proposed critical habitats as defined by the USFWS or Department of Land and Natural Resources. Species documented within the general project vicinity include the federally-listed endangered Hawaiian black-necked stilt (*Himantopus mexicanus knudseni*) at Ordy Pond. The Hawaiian moorhen (*Gallinula chloropus sandvicensis*), Hawaiian coot (*Fulica alai*), and Hawaiian hoary bat (*Lasiurus cinereus seniotus*) are also found on the ‘Ewa Plain.

This area has a high concentration of unique limestone anchaline pool communities. The anchaline pools support ‘ōpae ‘ula (*Halocaridina rubra*), an at risk anchaline pool shrimp, and *Metabetaeus lohena*, an anchaline pool shrimp that is a candidate for listing under the Endangered Species Act. Additionally, there are restored pools near the project area that have begun translocation of the orangeblack damselfly (*Megalagrion xanthomelas*), also a candidate species.

Common terrestrial animals in Kalaeloa are the mongoose (*Herpestes auropunctatus*), rats and mice (*Rattus rattus*, *Rattus exulans*, and *Mus musculus*), giant toad (*Bufo* sp.), and a variety of lizards (Traverse Group 1988). Feral dogs and cats also inhabit the area.

Impacts and Mitigation

The listed endangered plant species found within the KHP is the endemic round-leafed chaff-flower shrub, or ‘Ewa hinahina (*Achyranthes splendens* var. *rotundata*), which has been carefully identified and protected in the existing cleared interpretive areas. Additionally, volunteers have planted ‘Ewa hinahina in the cleared interpretive area of the KHP, along with other native species including wiliwili (*Erythrina sandwichensis*), maiapilo (*Capparis sandwichiana*), and naio (*Myoporum stellatum*). Polynesian-introduced species such as kō, or sugarcane (*Saccharum officinarum*), ‘uala, or sweet potato (*Ipomoea batatas*) and ‘ulu, or breadfruit (*Artocarpus altilis*) have also been planted in the interpretive area. Mature kī, or ti plant (*Cordyline fructiosa*), are found growing in sinkholes at the KHP.

The proposed multipurpose cultural center and parking lot will be sited in an open area currently used as a baseyard and stockpiling area, with no native or endangered species present. In the interpretive area, the proposed rest shelters will be sited to avoid areas with listed plant species, and native plants will continue to be protected and planted. The proposed action is not anticipated to cause any negative impacts to endangered plant species on the property.

5.9 Historic and Cultural Resources

The KHP is located within a significant and unique cultural landscape that tells of Native Hawaiian settlement and historic land uses including several World War II (WWII) military sites. Native Hawaiian settlement of the area was estimated to have occurred around 1400 AD (+/- 150 years) by radiocarbon dating of midden found in sinkholes. The Native Hawaiian sites constitute some of the most complex structures and most extensive settlements recorded in the 'Ewa Plain.

The post-contact introduction of invasive plants, ranching, sugarcane, and sisal cultivation created many changes in the landscape. The WWII construction of BPNAS produced numerous military features that have become important historical elements of the cultural landscape. At the same time, Station construction resulted in the destruction of many earlier cultural sites (Tuggle, 1997).

Most of the KHP is relatively undisturbed because the area was used as a military buffer zone within the former Naval Air Station (Kane, 2011). Remaining cultural sites within the KHP include a rectangular permanent habitation structure, three L-shaped temporary enclosures, an ancient trail, sinkholes used for agriculture and water supply, sinkholes used for burials and heiau, and a burial ahu. Constructed primarily of coral, the cultural structures are unique to the 'Ewa Plain. The integration of many upright stones into their design suggests a Tahitian influence.



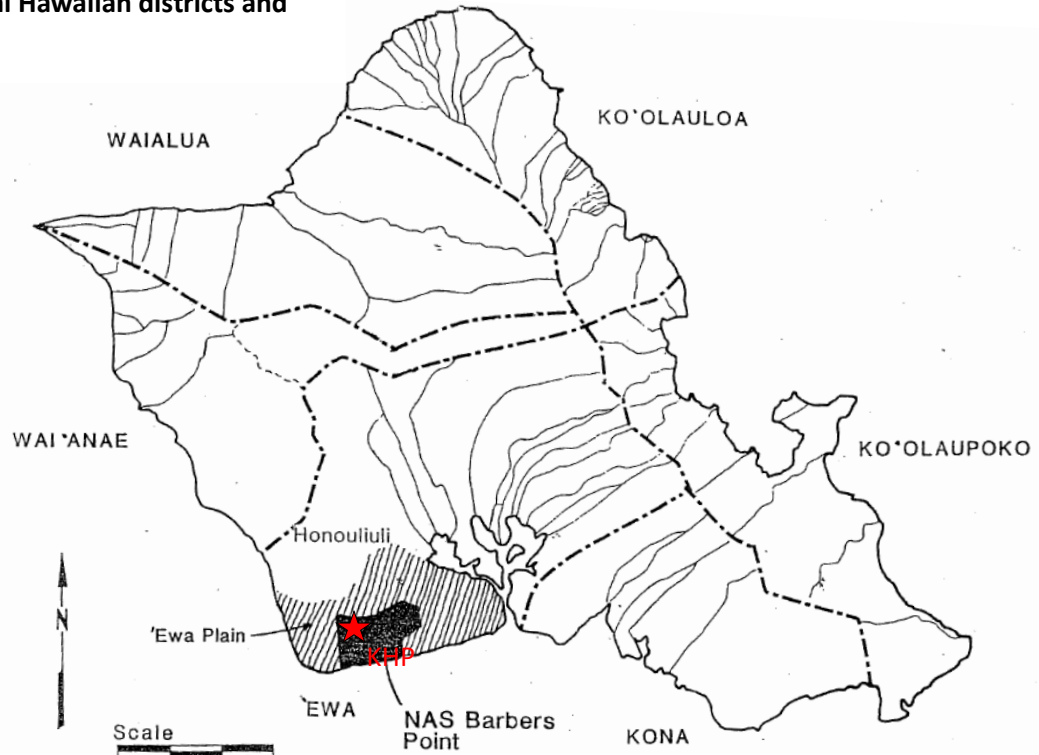
Figure 13. Stone enclosure in Site 1753 *Photo credits: Jan Becket*



Figure 12. An ancient Hawaiian trail was first mapped by Malden in 1825

Historical structures from the WWII era within the KHP include a plane crash site; a sentry post and wall, defensive barbed wire, a concrete pad and sinks, machine gun nests; and a dynamite storage facility and sisal wall. Sisal is a fibrous plant of the agave family that was once cultivated on the 'Ewa Plain. Cattle ranching also left its mark on the landscape, with rock walls and enclosures that altered some of the Native Hawaiian structures.

Figure 14. Traditional Hawaiian districts and ahupua'a



Kalaeloa Heritage Park is located within the former Barbers Point Naval Air Station on the 'Ewa Plain. O'ahu is shown with traditional Hawaiian districts and ahupua'a (Tuggle, 1997).

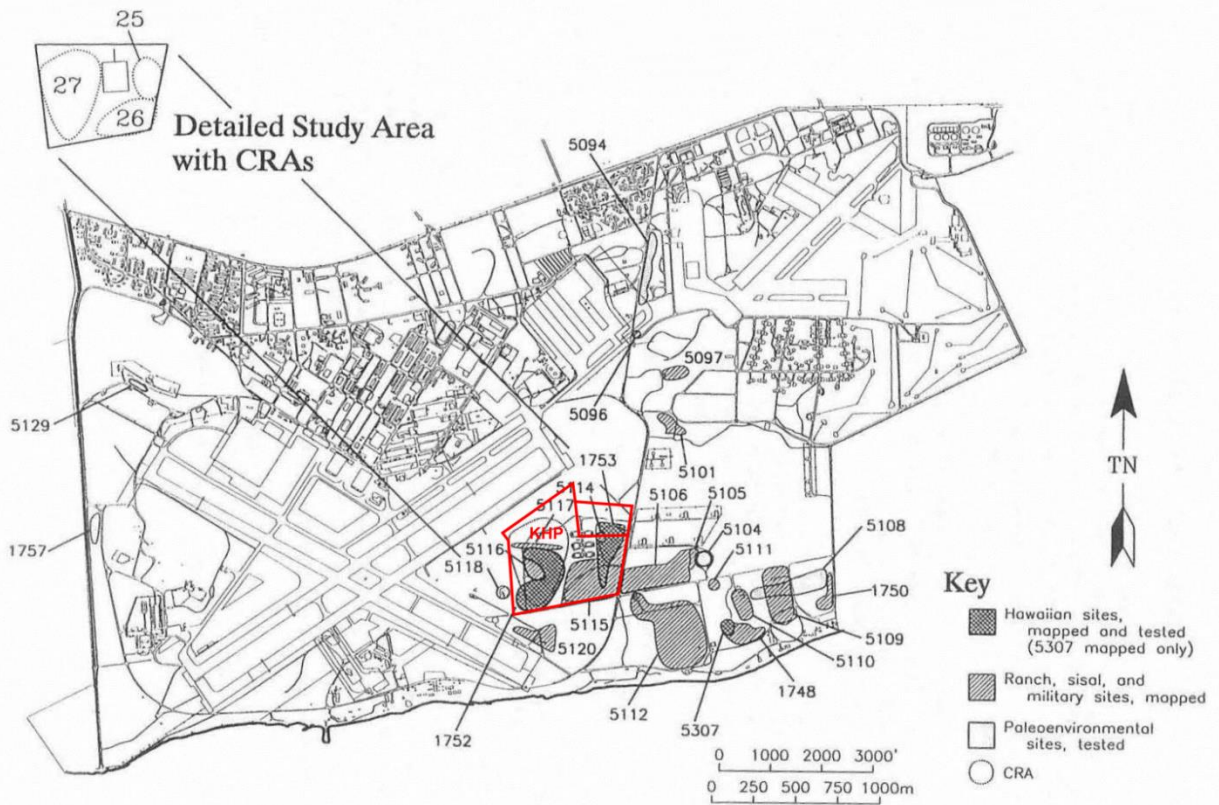
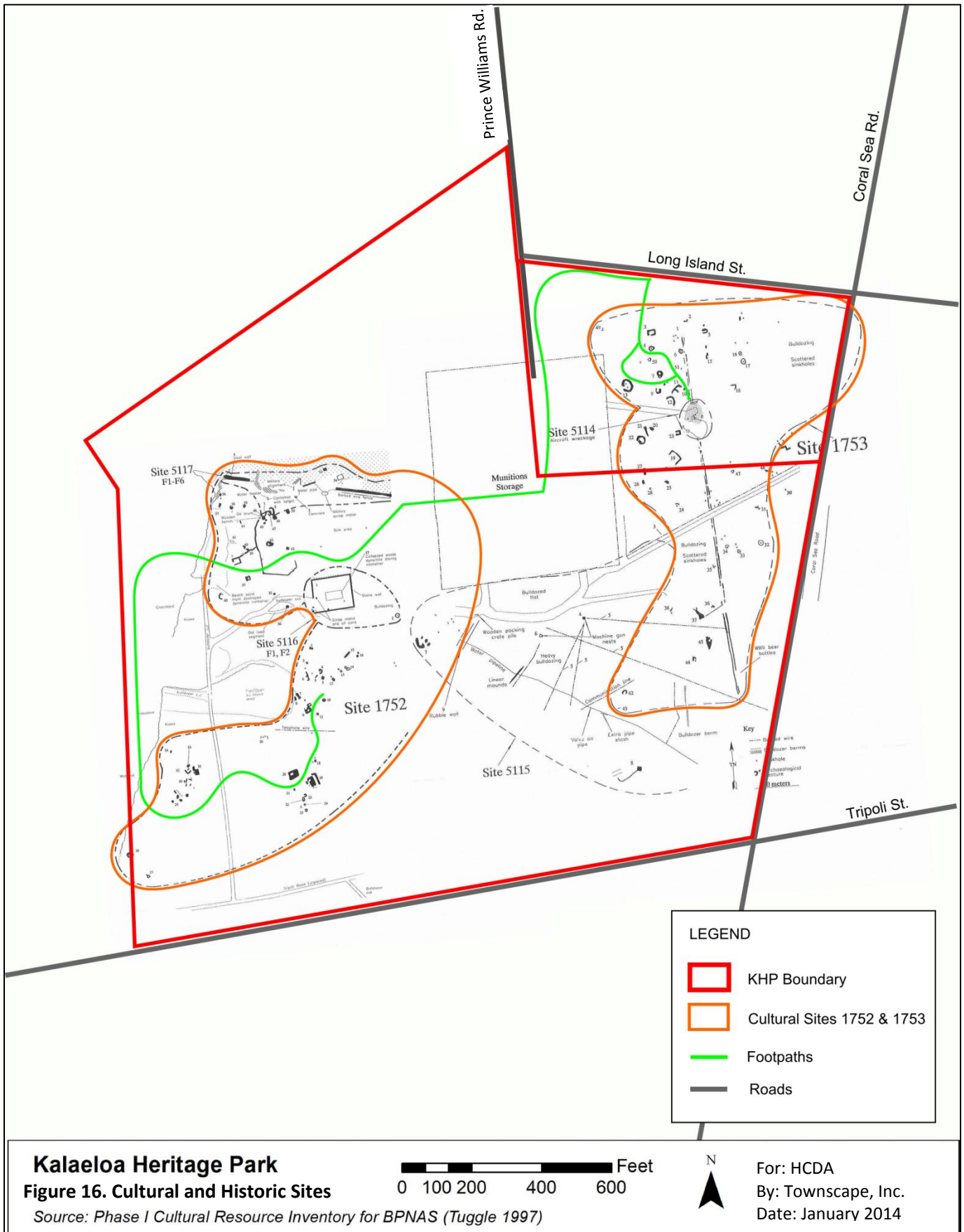


Figure 15. Sites of Phase II intensive archaeological inventory and paleontological study



5.9.1 Cultural Resource Inventory

In 1999 an inventory of all previous archaeological surveys was conducted as part of the EIS for the BPNAS Closure and Reuse. International Archaeological Research Institute, Inc. (IARII) provided a synthesis of the cultural resource studies of the 'Ewa Plain with assistance from a number of respected cultural experts. Following the Phase I survey, the survey data were reorganized into Cultural Resource Areas (CRAs) appropriate for Phase II survey actions and for cultural resource management planning. CRAs include archaeological and historical sites, site complexes, wetlands, sinkhole complexes, places of importance, isolated artifacts, and areas recommended for further subsurface inventory testing. The cultural and historic sites identified in the Phase I inventory are shown in Figure 16 and described below:

Native Hawaiian sites within the KHP

- **Site 1752** is a complex of Hawaiian habitation and agricultural structures, some of which were modified by military activities. One feature is believed to be a religious structure. Human skeletal remains occur within the site. Sites 1754, 1755 and 1756 are now included in Site 1752.
- **Site 1753** is a complex of Hawaiian habitation and agricultural structures. The site is notable for a well-preserved section of a paved Hawaiian trail, an unusual feature on the 'Ewa Plain. Human skeletal remains are present.
- **Site 5130** is a small complex of sinkholes, many filled with bulldozed rubble.

Historic sites within the KHP

- **Site 5114** is a WWII plane wreck. The engine remains, but most other parts have been removed. It is not recommended for preservation.
- **Site 5115** is a large complex of WWII military features, most associated with Station defense. These include two machine-gun positions, an extensive stretch of double-apron barbed wire, and a sentry post.
- **Site 5116** is a WWII dynamite storage structure and associated roads and small features. The dynamite storage facility is a large wooden sand-filled structure that was identified by means of the 1945 Station map. The map shows four of these structures, but only one was located. The others have apparently been demolished, but their locations are identifiable by sand piles.
- **Site 5117** is a portion of a historically documented sisal cultivation wall. Feral sisal was also located in the area.

These sites were mapped in detail and excavated in the IARII Phase II inventory, resulting in the recovery of habitation data. Sites 1752 and 1753 were recommended for preservation, and are considered eligible for the National Register of Historic Places based on the following criteria: 1) Associated with events that have made a significant contribution to the broad patterns of our history; 2) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; 3) Have yielded, or may be likely to yield, information important in prehistory or history. Preservation of historic military sites 5115, 5116 and 5117 is recommended as part of the Site 1753 and 1752 Native Hawaiian complexes.

The KCDD Rules identify the KHP parcels as historically and culturally significant, whose features are to “be preserved, protected, reconstructed, rehabilitated and restored by the landowners consistent with the implementing regulations of section 106 of the National Historic Preservation Act, as amended, and chapter 6E, HRS” (HCDA 2012, p. 215-46).

An ancient Hawaiian trail (mapped by Malden in 1825) is the earliest documented historical feature of this region of the 'Ewa Plain (See Figure 16). The trail is visible for approximately 1,000 feet in the cleared portion of Site 1753 in the KHP, with upright stones marking the edges of the paved footpath. It is believed that the trail connected the West Loch area near Pearl Harbor to the regionally significant Kualaka'i Salt Flat (Site 5118). Salt was a valuable resource in ancient Hawai'i, used to preserve fish and shellfish gathered from the ocean.

In every area of the former base that was left undisturbed by construction and development, remnants of the ancient past can be found. The vastness of the cultural landscape with its many archaeological features paints a picture of an ancient community that once lived at Kānehili (Kane, 2009).

Sites in the vicinity of KHP

The areas to the south and east of the KHP contain a number of other cultural and historic sites, forming the One'ula Archaeological District ('Ewa DP, 2013). There are complexes of Hawaiian stone structures and sinkholes, primarily used for habitation and agriculture. Some areas contain large house enclosures that suggest 19th century occupation. Human skeletal remains are present in some, and there may also be a Hawaiian religious structure.

There are sinkhole complexes with some modifications that appear to be related to ranching or military activities. Site 1748 is a complex of drylaid stone walls of Hawaiian origin that partially overlaps and has been modified by a military bivouac area. Site 1749 is a complex of stone walls that appears to be an area of military activity that also includes ranch walls and Hawaiian features. Other WWII-era military features include a large earthen berm from a skeet shooting range, training complexes, bivouac areas, and several concrete defensive structures including anti-aircraft gun batteries, a sentry post, and a portable pillbox.

Paleoenvironmental evidence

Sediment cores from Ordy Pond, to the east of the KHP, indicate the main reason for the decline of the 'Ewa native dryland forest was the Polynesian rat, brought here by early colonists (Altonn, 2007).

Analysis of pollen from sediment cores showed a very abrupt transition approximately 1,000 years ago, when the dryland forest rapidly disappeared and was replaced mostly by grass and weeds. Radiocarbon dating of rat bones found in Ordy Pond shows that rats were introduced in the early days of Polynesian settlement of O'ahu. Without predators or competition, the rat population exploded, radiated out across the island and destroyed native vegetation that many native bird species depended on. It was previously thought that early Polynesians were responsible for clearing the forest and hunting a number of native birds to extinction, but this sediment core data shows that the forest and birds declined before any evidence of humans on the 'Ewa plain around 1000 AD (Altonn, 2007).

5.9.2 Place Names

Kalaeloa literally means “long point” in Hawaiian, most likely receiving this name for its appearance from the east (Diamond Head) end of Mamala Bay, from which it appears to be an extremely long point. Kalaeloa is the original name for Barber's Point, O‘ahu, where Captain Henry Barber went aground in 1796. In 2000, following the closure of BPNAS, the U.S. Board on Geographic Names approved the Redevelopment Commission's application to change the name of the area back to the traditional Hawaiian name Kalaeloa (Pukui et al. 1974).

The KHP is located in an area known historically as Kānehili, an open, inhospitable kula land, noted in tradition for its association with the Plain of Kaupé‘a, and as a place of wandering spirits. This area is cited in the tradition of Hi‘iaka-i-ka-poli-o-Pele and in historical narratives (Maly, 2012).

The KHP also incorporates the famous place of Kualaka'i, an ancient village site suitable for permanent habitation. “It is just seaward of Pu'u-o-Kapolei, home of the Kamapua'a family, and probably a sacred place associated with the setting sun. If gods traveled between the two places, and if a trail connected them, this link would have been through the center of the BPNAS” (Tuggle, 1997). With its storied places, the KHP culturally defines the new community of Kapolei and its namesake Kapo, elder sister of Pele. The Pele family is referred to amongst the Tahitian ancestors of Native Hawaiians (Kane, 2009).

From the earliest of human times, the Hawaiian landscape has been alive with spiritual beliefs, traditions, customs, and practices. Even with all that has been lost, research in Hawaiian language materials, historical literature, and in the knowledge of families descended from traditional residents of the land reveals a wealth of history through place names, and in some instances through ongoing cultural practices.

5.9.3 Mo‘olelo

Hawaiian mo‘olelo (traditions and historical narratives) express native beliefs, customs, practices, and history. Landscapes hold many stories centered on wahi pana (sacred places). In ancient times, each place name was associated with a tradition—ranging from the presence and interactions of the gods with people, to documenting an event, or the characteristics of a given place. Oral traditions were passed down through families and recorded in writing in the nineteenth and early twentieth centuries (Maly, 2012). The mo‘olelo and wahi pana of the ‘Ewa district and specifically the ahupua‘a of Honouliuli help us situate the archaeological sites of the KHP in a broader cultural and historical context.

A number of mo‘olelo related to the ahupua‘a of Honouliuli are documented by Kepā Maly in “He Mo‘olelo ‘Āina—Traditions and Storied Places In the District of ‘Ewa and Moanalua (In The District of Kona), Island of O‘ahu: A Traditional Cultural Properties Study – Technical Report” prepared for the Honolulu rail transit project (Kumu Pono Associates, 2012). Prior to that report, the Final EIS for the Disposal and Reuse of BPNAS (Navy, 1999) and related Cultural Resource Inventory (Tuggle, 1997) documented many of the cultural and historic resources of the area. The Cultural Impact Assessment (Appendix B) provides further information excerpted from the documents mentioned above.

5.9.5 Traditional Cultural Practices

Based on the Cultural Impact Assessment (Appendix B), some of the traditional cultural practices and resources identified by kama'āina and kūpuna connected to the area of the KHP include:

- Limestone sink features
- Gathering of plant resources
- Trails
- Marine resources
- Wahi pana

Limestone sink features may provide information on past environmental conditions. Sinkholes were used for agriculture, as a drinking water source, and for burials.

Gathering of plant resources in this geographic region included 'uala based on the sweet potato mounds found in the area. Wiliwili trees were also used to create fishing nets and surfboards.

Trails include the trail identified in Malden's Map of 1825 that runs through the project area.

Marine resources were a large part of Native Hawaiians' diet. Salt from the Kualaka'i salt pond was used to preserve their food. This coastline was also known for its abundance of limu.

Wahi pana associated with this area include the story of Kaha'i who plants the 'ulu tree and instructs his wife to tell his son that if he wants to find his father that he needs to seek the breadfruit tree of Kaha'i-ka ulu o kaha'i.

No ongoing cultural practices within the project area have been identified. Resources such as limu and fish gathering took place on the coastal areas outside of the project area. Access to these areas will not be impacted by the proposed project. The salt pond is located outside of the project area and is not currently in use for cultural practices since it is fenced off by the DOT Airport.

Impacts and Mitigation

The mission of the KHP is to promote the stewardship and preservation of Native Hawaiian cultural sites and the cultural landscape of Kalaeloa, and to educate the community about cultural traditions and practices. This will be accomplished by guiding visitors on interpretive tours of the cultural and historic sites within the KHP, and hosting volunteer events for invasive species removal and preservation of cultural sites. In order to maintain the security and integrity of the archaeological features within the KHP, visitors to the KHP will be accompanied by a formally-trained docent or staff member.

Three acres of the park around Site 1753, just south of Long Island Street, have already been cleared and serve as the primary interpretive area. An interpretive trail clearly identifies the location of sites in this area. In 2012, community members built a Native Hawaiian hale near the current entrance to Site 1753. To the southwest, an interpretive trail through Site 1752 will remain under tree canopy with only targeted clearing of invasive plants from the immediate vicinity of the cultural sites. The trail will extend through approximately seven acres of Site 1752.

The archaeological resources described above will be preserved in place, with continued removal of invasive vegetation. Large kiawe trees growing over some of the sites require large amounts of labor to remove, and great care is taken not to move any of the stones that make up the cultural sites. Careful management of volunteer groups, with only long-time trusted volunteers allowed to access the portions of the KHP beyond the three-acre cleared site will help to minimize damage to the sites.

In order to maintain the security and integrity of the archaeological features within the KHP, visitors to the KHP will be guided by a formally-trained docent. The docent will provide an explanation of the site and rules of conduct before leading the group along the interpretive trail. All visitors to the KHP will be required to observe the following rules:

- Enter the KHP with respect for the cultural landscape and stories it tells us
- Stay on the trail and remain with the group at all times
- Do not touch or remove any cultural or historical objects
- Do not throw or place anything inside the sinkholes

The long range vision for the KHP includes construction of a multi-purpose cultural center where visitors will enter before going to the interpretive trail area. The site of the proposed cultural center and parking area was previously disturbed by bulldozing and military uses. Therefore, the proposed development is not expected to impact cultural or historic sites. If additional historic and cultural sites, including human burials, are uncovered during construction activities, all work in the vicinity will cease and the SHPD will be contacted.

5.10 Infrastructure

Utility systems located on the former BPNAS have been or are in the process of being conveyed from the Naval Facilities Engineering Command (NAVFAC) to public and private entities. The various infrastructure improvements in Kalaeloa will need to be designed to the appropriate system standards established by the utility provider to which they will ultimately be dedicated (Kalaeloa Infrastructure Master Plan Update “KIMPU”, October 2010). This section describes existing and planned roads, water, wastewater, electrical and communications capacity for the KHP parcels.

5.10.1 Roads and Traffic

Vehicular access to the KHP is currently via Long Island Street, just west of Coral Sea Road. Eventually this will become the service entry, and the main entrance to the park will be from Tripoli Street, which is currently overgrown with vegetation.

The Thoroughfare Plan in the KCDD Rules identifies standards for planned streets and improvements to existing streets. KCDD plans call for Tripoli Street and Coral Sea Road south of the intersection with Tripoli Street to become a “2-Lane Street with Bicycle Lanes” (ROW= 44’). A typical cross section of this street type is shown in Figure 17. Plans call for Coral Sea Road north of the intersection with Tripoli Street to become a “2-Lane Avenue with Median/Turn Lane and Bicycle Lanes” (ROW= 80’). A typical cross section of this street type is shown in Figure 18. (KCDD Rules, Appendix Figure 1.4).

The Hawaii DOT publishes interactive Traffic Station Maps that provide access to traffic data including daily vehicle counts at selected locations. However, no traffic count stations are located on Coral Sea Road or Tripoli Street.

**B. 2-Lane Street and Bicycle Lanes (ROW = 44’)
West Perimeter Road, Coral Sea Road, Tripoli Street**

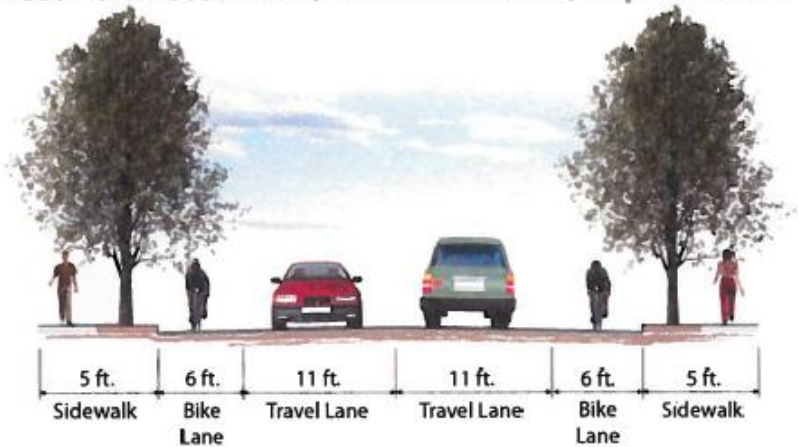


Figure 17. KCDD typical cross section of 2-Lane Street (ROW 44')

**F. 2-Lane Avenue with Median/Turn Lane and Bicycle Lanes
Kualakai Parkway (ROW = 80’)
Coral Sea Road (ROW = 60’ with 6 foot sidewalk),
Malakole Street Ext, Kamokila Boulevard Ext**

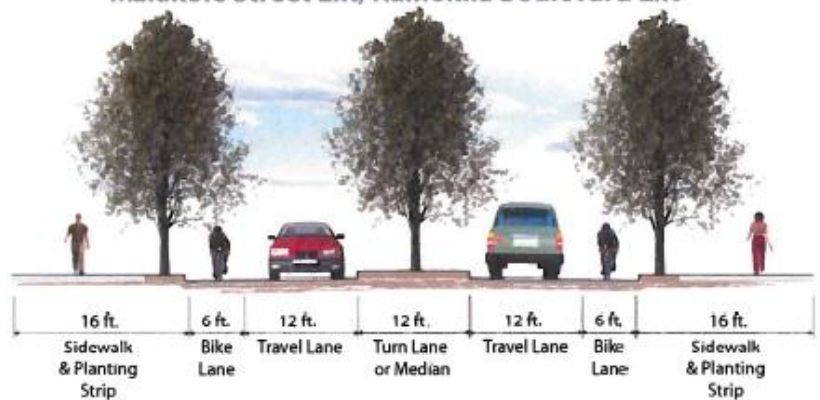


Figure 18. KCDD typical cross section of 2-Lane Avenue (ROW 80')

Table 4. Daily Visitor and Vehicle Estimates

Function (# of vehicles/person)	Daily VISITOR Estimates							Number of vehicles per Person	Daily VEHICLE Estimates						
	Typical Wkdy.	Typical Sat.	Typical Sun.	Busy Wkdy.	Busy Sat.	Busy Sun.	Large Event		Typical Wkdy.	Typical Sat.	Typical Sun.	Busy Wkdy.	Busy Sat.	Busy Sun.	Large Event
Interpretive Park (by bus = 0.02)	40	0	60	60	80	80	0	0.02	1	0	1	1	2	2	0
Interpretive Park (by car = 0.75)	10	0	20	20	30	30	0	0.75	8	0	15	15	23	23	0
Farmers' Mkt (0.75)	0	100	0	0	150	0	0	0.75	0	75	0	0	113	0	0
Community Meetings (0.75)	30	30	30	60	60	60	0	0.75	23	23	60	45	45	45	0
Volunteer Days (0.5)	10	0	20	20	0	30	0	0.5	5	0	20	10	0	15	0
Education Center (1)	40	0	0	60	0	0	0	1	40	0	0	60	0	0	0
Performing Arts Theatre (0.5)	0	0	40	0	0	60	80	0.5	0	0	20	0	0	30	40
Cultural Event (0.75)	0	0	0	0	0	0	300	0.75	0	0	0	0	0	0	225
Staff (1)	10	15	15	15	15	15	15	1	10	15	15	15	15	15	15
TOTAL	140	145	185	235	335	275	390		86	113	131	146	198	129	280

Table 5. Peak hour vehicle count for busy weekdays, Saturdays and large events

Vehicle use type	Busy Weekday Vehicle Count							Busy Saturday Vehicle Count							Large Events Vehicle Count						
	AM Peak ₁		Other ₂		PM Peak		Total vehicles	AM Peak ₃		Other ₂		PM Peak		Total vehicles	AM Peak		Other		PM Peak		Total vehicles
	in	out	in	out	in	out		in	out	in	out	in	out		in	out	in	out	in	out	
Interpretive Park (by bus)	1	0	0	1	0	0	1	0	0	2	1	0	1	2	0	0	0	0	0	0	0
Interpretive Park (by car)	7	0	8	11	0	4	15	5	0	15	15	3	8	23	0	0	0	0	0	0	0
Farmers' Market	0	0	0	0	0	0	0	40	40	73	73	0	0	113	0	0	0	0	0	0	0
Community Meetings	0	0	25	45	20	0	45	0	0	20	45	25	0	45	0	0	0	0	0	0	0
Volunteer Work Days	10	0	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education Center	0	0	60	0	0	60	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Performing Arts Theatre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20	20	20	40
Cultural Event	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	180	180	20	45	225
Staff	10	0	5	5	0	10	15	10	0	0	15	5	0	15	10	0	5	5	0	10	15
Total vehicles	28	0	98	72	20	74	146	55	40	110	149	33	9	198	35	0	205	205	40	75	280
Average hourly traffic flow ₄	14		17		47			48		26		21			18		41		58		

₁ AM Peak Traffic Hours are 6:30-8:30am, PM Peak Traffic Hours are 3:30-5:30pm M-F except holidays. (City and County of Honolulu Traffic Code, ROH Sec. 15, 1983)

₂ "Other" hours are non-peak traffic times when KHP will be open, from 8:30am-3:30pm, and from 5:30-8:30pm (Community Meetings may be in the evenings)

₃ There are no peak traffic hours for public roads on the weekends, but we use the same "peak hours" as weekdays to anticipate hourly vehicle traffic.

₄ Average hourly traffic flow is calculated by adding the number of vehicles in to the number of vehicles out, divided by the number of hours in that time period.

Impacts and Mitigations

The operation of the KHP is not anticipated to have a significant impact on traffic in Kalaeloa. The primary uses of Coral Sea Road and Tripoli Street will be to access the KHP. This section provides data on existing traffic conditions on 'Ewa roadways and estimates for the anticipated number of additional vehicle trips generated by uses at the KHP. The total number of anticipated visitors to the KHP per year is 62,360 (See Section 2.2). This estimate includes visitors to the multipurpose cultural center and interpretive area, farmers' market, community meetings, volunteer work days, education center, performing arts theatre, cultural events, and staff.

Table 4 above summarizes the estimated trip generation from nine different vehicle use categories: Interpretive Area (by bus), Interpretive Area (by car), Farmers' Market (Saturdays), Community Meetings (evenings), Volunteer Days, Education Center, Performing Arts Theatre, Cultural Event, and Staff. The number of people anticipated for each activity is multiplied by the number of vehicles per person (ranging from 0.02 for a 50-person bus to one for staff members likely to drive their own vehicle) to calculate an estimated number of vehicles. Estimates are given for typical and busy weekdays, Saturdays, and Sundays; and for large events. The maximum number of people and vehicles anticipated in one day during a large event is approximately 390+ people. These people are anticipated to arrive in 280 personal vehicles, for a total of 280 trips. The number of vehicles expected on a busy Saturday will be an estimated 198 trips, with the Farmers' market and other activities. However, both trips for a large event and on a busy Saturday would be staggered throughout the day, and are not expected to cause any issues with traffic circulation in the area.

Table 5 provides the number of estimated trips generated at morning peak, afternoon peak, and other hours for busy weekdays, busy Saturdays, and large events. According to the City and County of Honolulu Traffic Code (Revised Ordinances of Honolulu (ROH) Chapter 15): "Morning peak traffic hours" are from six-thirty a.m. to eight-thirty a.m., Monday through Friday, except holidays. "Afternoon peak traffic hours" are from three-thirty p.m. to five-thirty p.m., Monday through Friday, except holidays (ROH Sec. 15-2.17, 1983). The total trips in and out of the KHP during each time period is divided by the number of hours in that time period, to give an estimated number of trips per hour at peak times. During an hour in the AM peak times, the KHP could generate as many as 14 trips on a busy weekday, 48 trips on a busy Saturday; during PM peak times, up to 47 trips on a busy weekday and 21 on a busy Saturday.

On the weekends, there are no "peak traffic times", but for the sake of comparison and estimating hourly vehicle trips, we use the same peak times as weekdays. For all categories, the average hourly traffic flow is calculated by adding the number of vehicles traveling in to the number of vehicles out, divided by the number of hours in that time period. (Vehicles IN + Vehicles OUT / # hours in time period). For example, on a typical weekday morning between 6:30-8:30am, an estimated 28 vehicles enter KHP and none leave. That is 28 vehicles total, divided by two hours to equal approximately 14 vehicles per hour during AM peak. For community meetings, it is anticipated that roughly half of the attendees would arrive during PM peak hours 3:30-5:30pm, and the rest would arrive later ("Other"). It is assumed that everyone would leave after 5:30 p.m., hence 45 vehicles in the "Out" column at time "Other". "Other" refers to the time between 8:30 a.m. and 3:30 p.m., non-peak hours, and also to 5:30 p.m. and later, spanning a period of ten hours.

Short-term traffic impacts to area residents and park users may occur as a result of the movement of construction-related vehicles. Such temporary traffic congestion could pose minor inconveniences to motorists, pedestrians, and bicyclists traveling in and around the immediate construction area. The roadway primarily serves the KHP and the nearby beach park, campgrounds, beach cottages and the U.S. Coast Guard. Therefore, any construction-related traffic impacts would not likely affect people in the residential areas of 'Ewa. If necessary to mitigate potential traffic congestion and delays along Fort Barrette Road and Roosevelt Avenue, the movement of construction vehicles can be restricted during the morning and afternoon peak traffic hours. Such restrictions will probably be unnecessary, however, since peak-hour traffic is in the opposite direction of traffic going from Fort Weaver Road to the project site. It is anticipated that all construction-related vehicles will park within the project site and, thus, will not affect traffic flow in adjoining areas.

In the long-term, expected increases in traffic are associated with the anticipated long-term population growth of the 'Ewa region. No significant long-term impacts are anticipated as a result of the proposed actions at the KHP. The increase in vehicular traffic to the KHP is anticipated to have negligible impacts in relation to the overall increase in traffic as a result of regional development. Residents in the vicinity of the project area will be informed about the timing of construction work.

5.10.2 Water Supply

The existing water supply system on the former BPNAS was constructed mostly during the WWII era (HCDA 2006). The existing NAVFAC water infrastructure is an underground potable water line that runs parallel to Coral Sea Road, on the east side of the street. Future utility systems for potable and non-potable water in Kalaeloa will be provided by Pural Specialty Water Company based in Aiea. Pural anticipates receiving approval from the Public Utilities Commission (PUC) to purchase the Navy system by late 2014. Upon PUC approval, Pural will create Master Plans for the Water and Wastewater Systems at Kalaeloa.

Non-potable R-1 water is produced at the Honouliuli Wastewater Recycling Plant and distributed via pipe line to other areas of KCDD. Eventually the KHP would need to pay a facilities charge for the installation of service and/or meter connections prior to connecting to Board of Water Supply's (BWS) R1 system (similar to connecting to BWS's potable water system) as well as monthly metered R1 fees at the prevailing R1 rate, which may be adjusted annually by BWS.

Impacts and Mitigation

The proposed cultural center at the KHP will require potable water, but the amount will be negligible relative to water use by existing and proposed housing and commercial developments in the area. Low flow fixtures and water conservation, along with drip irrigation systems if needed for establishment of native plants, will help to minimize water use at the KHP.

5.10.3 Wastewater

Existing NAVFAC wastewater infrastructure consists of a wastewater force main line that runs parallel to Coral Sea Road, on the west side of the street. As with water supply, Pural will manage the wastewater collection system for the area in which KHP is located. Wastewater from all KCDD parcels goes to the Honouliuli Wastewater Treatment Plant. The KHP parcels will eventually be connected by gravity main

to an onsite sewage pumping station, which will be connected by force main to the gravity main within Independence Street. Tenants will need to pay a monthly sewer service charge.

Impacts and Mitigation

The proposed visitor center at the KHP will require wastewater disposal, but the amount will be negligible relative to development in the area.

5.10.4 Electrical Utilities and Communications

Existing NAVFAC electrical utilities include overhead electrical lines and poles that run parallel to Coral Sea Road, on the west side of the street; and an underground electrical duct bank that runs parallel to Tripoli Street, on the south side of the street, beginning near the southwest corner of the KHP parcels. According to the *Ultimate Electrical and Communications Master Plan* (November 2009), “alternate energy” is expected to be available on the KHP parcels within seven years.

In the future, Hawaiian Telecom and Oceanic Time Warner Cable will likely provide telecommunications services to the non-DHHL parcels in Kalaeloa. Tenants would need to pay monthly fees established by the utility provider based upon operations and maintenance costs and usage.

Impacts and Mitigation

No negative impacts are anticipated to result from the provision of electrical and communication services to the KHP.

5.10.5 Solid Waste

Solid waste generated from private sources within the former BPNAS is collected by private contractors for disposal at the municipal H-POWER facility or to the Waimanalo Gulch Sanitary Landfill. Solid waste generated from the public beach park areas is collected by County and City of Honolulu, and similarly disposed of.

5.11 Public Services

5.11.1 Police Protection

The project site is located within the Honolulu Police Department's Leeward Oahu District 8. Police service in District 8 is currently provided from the new Kapolei Police Station located at 1100 Kamokila Boulevard.

5.11.2 Fire Protection

Fire protection for the project site will be provided by the East Kapolei Fire Station approximately four miles north of the KHP at 91-1211 Kinoiki St.

5.11.3 Medical Services

The major health care facility nearest the project site is the Kaiser Permanente's Kapolei Clinic located at 599 Farrington Highway. The Queen's Medical Center—West O'ahu in 'Ewa also services people of West O'ahu.

Impacts and Mitigation

In the long-term, expected increases in demand for police, fire and medical services are associated with the anticipated long-term population growth of the 'Ewa region that is served by the KHP. No significant long-term impacts are anticipated as a result of the proposed action.

5.12 Socio-economic conditions

In 2010 the population of the State of Hawai'i was 1,360,301 and the population of the City and County of Honolulu was 953,207. The 'Ewa DP area had a population of 102,180 in 2010 and is projected to grow to over 164,000 by 2035 (U.S. Census 2011). The 'Ewa DP region is O'ahu's fastest growing development plan area. Between 1990 and 2000, the number of housing units increased nearly 80 percent; from 11,700 housing units to 20,800 units in 2000. The City and County of Honolulu predicts a need for over 88,000 new homes in the region between 2005 and 2035 (City and County of Honolulu 2011).

O'ahu's economic activity is concentrated around the Primary Urban Center (PUC) DP area, which provides about 74 percent of the island's jobs. Projections to the year 2030 anticipate a decrease in job share in the PUC to approximately 68 percent. In contrast, the job share in the 'Ewa DP area is projected to increase from 16,400 (non-construction) jobs in 2000 to approximately 87,000 jobs by 2035. Major employment centers are expected to be concentrated around the City of Kapolei, the Ko'olina Resort, Kapolei Business Park, and Kalaeloa Barbers Point Harbor (City and County of Honolulu 2011).

Within the KCDD, the HCDA's Kalaeloa Master Plan is intended to create as many as 7,000 new jobs and 3 million square feet of light industrial, commercial, retail and office space. It includes approximately 6,350 residential units, schools and recreation facilities as well as transit-oriented development and regional connections. The plan promotes alternative energy sources and self-sufficiency for the KCDD (HCDA 2006).

Impacts and Mitigations

The proposed action is not expected to have any negative socio-economic effects for O'ahu residents. It will provide an opportunity for visitors to learn about history through their experience of a cultural landscape, and partake in its preservation. The proposed farmers' market is an opportunity for farmers to sell their products. The KHP may employ up to twenty staff members on a part-time basis to work in the cultural center and to maintain the heritage park.

5.13 Cumulative Impacts

The proposed project will not have a significant cumulative effect upon the environment, or involve a commitment for larger activities. Short-term impacts from construction activities will be mitigated through use of BMPs. Development of the KHP complex will create additional impervious surfaces, but overall will have a negligible effect on the drainage pattern of the area. The KHP will promote the stewardship of natural, cultural and historical resources on the 'Ewa Plain, and educate visitors about the past. The number of visitors is not expected to exceed 395 people per day for the various uses within the park. A maximum of 280 additional vehicles per day for a large event, or 86 vehicles on a typical weekday are not expected to have a significant impact on traffic circulation in this remote area of Kalaeloa, particularly since most of these trips would be staggered throughout the day. The proposed

development of the KHP will support the goals of the HCDA and City and County of Honolulu to preserve open space and provide recreational and educational opportunities in ‘Ewa. The anticipated determination for this EA is a Finding of No Significant Impact (FONSI).

6. ALTERNATIVES TO PROPOSED ACTION

6.1 No Action Alternative

Under the No Action alternative, the existing cleared interpretive area of the KHP would remain in its present condition. The remainder of cultural and historic sites within the 77-acre area would remain covered by invasive plants, including large kiawe trees that are affecting the integrity of the cultural sites. For security and public safety reasons, public access into the proposed expansion area would be restricted. Without the proposed improvements, the ability of the project site to serve the growing residential population of the region would be diminished. The No Action alternative would also preclude all other short- and long-term beneficial and relatively insignificant adverse physical, environmental and socio-economic impacts described in this EA.

6.2 Alternative Location of Facilities

The proposed KHP complex could be built in a different location within the 77 acres, at the southwest corner of the intersection of Coral Sea Road and Long Island Street. At this alternative location, facilities would be closer to the main access road and existing water and sewer infrastructure located along Coral Sea Road. This would minimize the need to extend water and sewer infrastructure as far into the parcel as the proposed action. However, the proposed location of the multipurpose cultural center is ideal because the “Munitions Storage” area was previously disturbed. If the proposed complex is built at this alternative location, it is likely that archaeological features will be disturbed in the area. Tuggle’s archaeological survey shows a number of scattered sinkholes and archaeological features in this alternative location.

There is already an existing asphalt road that is currently covered with overgrown vegetation from Tripoli Street to the “Munitions Storage” area where the cultural center and parking lot would be built. Also, the proposed location of the cultural center is centrally located between Sites 1753 and 1752. An alternative location of the facilities within the KHP is not desirable.

6.3 Alternative Uses of the KHP Parcels

The KHP could be restricted to fewer visitors, such as cultural practitioners only, or school groups only; but that is not deemed necessary. With trained docents available to guide visitors through the KHP, the possibility of damaging cultural and historic sites would be minimized. The proposed cultural center would play an essential role in educating visitors about the natural and cultural history of the KHP, complementing the tours and preservation activities.

7. REFERENCES

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APPENDIX A

PREMILINARY AGENCY COMMENTS ON PROPOSED ACTION

Gabrielle Sham

From: Jose Bustamante <jose.bustamante@huntcompanies.com>
Sent: Monday, January 27, 2014 5:05 PM
To: Gabrielle Sham
Subject: EA for Kalaeloa Heritage Park
Attachments: 13_0601 Kalaeloa SIP Report FINAL.pdf

Gabrielle,

Alan Ong of Hunt Companies passed on your letter regarding the EA your firm is preparing for the Kalaeloa Heritage Park. I manage development/operations for Hunt's Kalaeloa properties and can assist as needed. Hunt's lands are north of the KHP. Attached is Hunt's strategic implementation plan for its land holdings. You can also find additional info at www.huntkalaeloa.com. Feel free to call should you have any questions.

Thanks,

Jose

Jose Bustamante | Vice President | Development, Hawaii Region
Phone: 808.792.3756 | Cell: 808.341.3457
737 Bishop Street, Suite 2750 | Honolulu, HI | 96813
Hunt Companies | www.huntcompanies.com

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Gabrielle Sham

From: Randall Shimoda <randall.shimoda@puralwater.com>
Sent: Thursday, January 30, 2014 2:11 PM
To: Gabrielle Sham
Subject: contact information for Randall Shimoda, Pural Water Specialty Company

Gabrielle,

It was nice chatting with you. As mentioned in our conversation, I expect it will be another 6 months before the PUC approves the Navy selling the system to us. We will create Master Plans for the Water and Wastewater Systems at Kalaeloa after the PUC approves the sale. So if you have any questions on water and wastewater capacities and connections, the Navy can help you. Let me know if you have any questions.

Randall Shimoda

Engineer



Pural Water Specialty Co., Inc.

99-1135 Iwaena Street #6

Aiea, HI 96701

Phone: (808) 488-8434 ext. 247

Fax: (808) 484-1917

Email: Randall.Shimoda@puralwater.com

www.puralwater.com

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

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HONOLULU, HAWAII 96813
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MAYOR



MICHAEL D. FORMBY
DIRECTOR

MARK N. GARRITY, AICP
DEPUTY DIRECTOR

TP1/14-546577R

February 4, 2014

Ms. Gabrielle Sham
Project Coordinator
Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96816

Dear Ms. Sham:

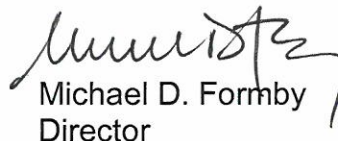
SUBJECT: Initial Consultation for Development of Proposed Kalaeloa Heritage Park

Thank you for your letter dated January 15, 2014, requesting our review and comment on the above project.

We do not have any comments at this time. However, we reserve further comment pending submission of the Draft Environmental Assessment and included traffic impact section.

Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,


Michael D. Formby
Director

Gabrielle Sham

From: Yasunaga, Grant S CIV NAVFAC HI, PW6A <grant.yasunaga@navy.mil>
Sent: Friday, February 07, 2014 9:11 AM
To: Gabrielle Sham
Subject: Comments on proposed Kalaeloa Heritage Park EA from NAVFAC Hawaii Utilities

Gabrielle -

I am responding in regards to your letter addressed to Mr. Curtis Noborikawa on 15 JAN 2014.

In the area specified on the map enclosed with the letter, we have four items of immediate concern:

- 1) Overhead electrical lines and poles that run parallel to Coral Sea Road, on the west side of the street
- 2) Wastewater force main line that runs parallel to Coral Sea Road, on the west side of the street
- 3) Underground potable water line that runs parallel to Coral Sea Road, on the east side of the street
- 4) Underground electrical duct bank that runs parallel to Tripoli St, on the south side of the street, beginning near the southwest corner of the area specified.

If you require maps to illustrate the comments above, please let us know and we can arrange the release of data to you.

Please keep us informed as the development progresses so we may comment on any potential impact your project may have on the utility systems in that area. Thank you for allowing us the opportunity to comment.

Best regards,
Grant

Grant Yasunaga | UEM Project Manager (Acting) | NAVFAC Hawaii PW6
V: 808.471.4531 (DSN 315) | F: 808.474.7677 | grant.yasunaga@navy.mil
400 Marshall Road, Bldg 166, Pearl Harbor HI 96860

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
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KIRK CALDWELL
MAYOR

LOUIS M. KEALOHA
CHIEF

DAVE M. KAJIHIRO
MARIE A. McCAULEY
DEPUTY CHIEFS

OUR REFERENCE EO-WS

February 7, 2014

Dear Ms. Sham:

This is in response to your letter dated January 15, 2014, requesting comments on the initial consultation for the proposed Kalaeloa Heritage Park project.

The Honolulu Police Department (HPD) has the following concerns regarding the project:


- Will security be available 24 hours a day for the heritage park and the visitor center?
- Will the area be fenced in to keep trespassers out? Will there be a monitored alarm system?
- Will the parking area accommodate all visitors during peak hours? If not, is there a plan for overflow parking?
- What will be the hours of operation?

Additionally, we would like to be involved in the future planning of the project to reassess its impact on police operations.

If there are any questions, please contact Major Kerry Inouye of District 8 (Kapolei) at 723-8403 or via e-mail at kinouye@honolulu.gov.

Sincerely,

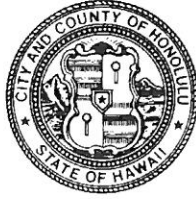
LOUIS M. KEALOHA
Chief of Police

By 
RANDAL K. MACADANGDANG
Assistant Chief
Support Services Bureau

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

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DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2014/ELOG-87(rns4)

February 10, 2014

Ms. Gabrielle Sham
Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96816

Dear Ms. Sham:

This letter is in response to your January 15, 2014 request for comments on issues that we feel are important to address in the Draft Environmental Assessment (DEA) you are preparing for the proposed Kalaeloa Heritage Park.

We feel the following issues should be addressed:

1. The DEA should discuss the consistency of the proposed park with the Oahu General Plan (GP) and the recently adopted Ewa Development Plan (Ewa DP).

As you may be aware, the Ewa DP provides a vision for Ewa's future development and policies and guidelines to implement that vision.

The DEA should reference those elements of the vision and the implementing policies and guidelines pertinent to the development of the Kalaeloa Heritage Park, including those dealing with protection of natural, historic, and cultural resources, and with the development of regional park facilities at Kalaeloa.

2. The DEA should discuss the relationship between the Kalaeloa Heritage Park and the adjacent City Kalaeloa Regional Park and the Department of Hawaiian Home Lands parcels.
3. The DEA should disclose what City permits and approvals will be needed for the project.
4. The DEA should disclose how the project will be served by City infrastructure. For example, an approved Sewer Connection Application will be required.

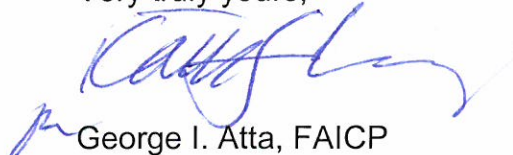
Ms. Gabrielle Sham
February 10, 2014
Page 2

5. As applicable, the DEA should include a narrative explaining the project's water quality management strategy. You may want to refer to the City's Rules Relating to Storm Drainage Standards.

Thank you for the opportunity to provide our comments.

If you have any questions about the Oahu GP or the Ewa DP, please contact Bob Stanfield by phone at 768-8051 or email at bstanfield@honolulu.gov; for questions about the Sewer Connection Application, please contact Tessa Ching by phone at 768-8197 or by email at tching@honolulu.gov; and for questions about water quality management strategies, please contact Don Fujii by phone at 768-8107 or by email at dfujii@honolulu.gov.

Very truly yours,



George I. Atta, FAICP
Director

GIA:rns4

1118745

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



February 13, 2014

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ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer *ELK*

Ms. Gabrielle Sham, Project Coordinator
Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96816

Dear Ms. Sham:

Subject: Your Letter Dated January 15, 2014 on the Initial Consultation for the
Development of the Proposed Kalaeloa Heritage Park – 9-1-013: 067

Thank you for the opportunity to comment on the proposed Kalaeloa Heritage Park.

We do not have a water system in the vicinity of the proposed park. Water should be provided by the private water system serving this area.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division, at 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai'i 96850

In Reply Refer To:
2014-TA-0130

FEB 14 2014

Ms. Gabrielle Sham
Project Coordinator
Townscape, INC
900 Fort Street Mall Suite 1160
Honolulu, HI 96816

Subject: Technical Assistance for the development of the proposed Kalaeloa Heritage Park

Dear Ms. Sham:

The U. S Fish and Wildlife Service received your letter January 21, 2014, requesting our comments on issues we identify as important in preparing an Environmental Assessment (EA) for the proposed Kalaeloa Heritage Park (KHP). The proposed KHP Plan includes development of an interpretive trail along archaeological and cultural sites, a multi-purpose visitor center, and a parking area.

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program as it pertains to listed species and designated critical habitat in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*). No federally designated or proposed critical habitat occurs within the proposed project footprint. Our data indicate that the federally and State listed endangered plants, *Chamaesyce skottsbergii* var. *skottsbergii* and *Achyranthes splendens* var. *rotundata* may be present in at the proposed project site. Species documented within the general project vicinity federally endangered Hawaiian waterbirds; the Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian moorhen (*Gallinula chloropus sandvicensis*), Hawaiian coot (*Fulica alai*), and Hawaiian hoary bat (*Lasiurus cinereus semotus*). This area also has a high concentration of unique limestone anchaline pool communities. The anchaline pools support opae ula (*Halocaridina rubra*) at risk anchialine pool shrimp and *Metabetaeus lohena* an anchialine pool shrimp that is a candidate for listing under the Endangered Species Act (ESA). Additionally, there are restored pools near your location that have begun translocation of the orangeblack damselfly (*Megalagrion xanthomelas*), also a candidate species.

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We offer the following recommendations to assist you with your environmental review. We recommend that a knowledgeable botanist survey for federally listed plant species during the wettest portion of the year (November- April) within your proposed project area. If species are present, including reintroduced species, they should be included in the EA to determine if these may be impacted from construction of the proposed development.

If it is determined that the proposed project may affect federally listed species we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If the proposed project is funded, authorized, or permitted by a Federal agency, then the Federal agency should consult with us pursuant to section 7(a)(2) of the ESA. If no Federal agency is involved with the proposed project, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan laying out the proposed actions, determine the effects of the action on affected fish and wildlife species and their habitats, and define measures to minimize and mitigate adverse effects.

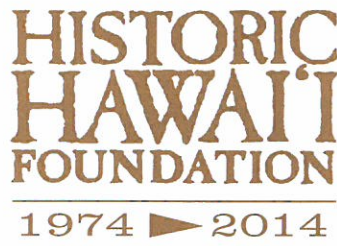
We appreciate your efforts to conserve Hawaii's natural resources. If you have questions regarding information contained in this letter, please contact Vickie Caraway, Fish and Wildlife Botanist, (phone 808 792-9424, fax 808 792-9581).

Sincerely,



Aaron Nadig
Acting Assistant Field Supervisor:
Oahu, Kauai, NWHI, Am. Samoa

March 17, 2014



Bruce Tsuchida
President and Principal Planner
Townscape, Inc
900 Fort Street Mall, Suite 1160
Honolulu, Hawai'i 96813

**RE: Early Consultation Draft Environmental Assessment
TMK: (1) 9-1-013:069 and (1) 9-1-013:067
Kalaeloa Heritage Park**

Dear Mr. Tsuchida,

Historic Hawai'i Foundation (HHF) received the initial consultation for the development of the proposed Kalaeloa Heritage Park (KHP) and participated in a site visit on March 4, 2014 with staff from Townscape and the State Historic Preservation Division.

Since 1974, HHF has been a statewide leader for Historic Preservation with a mission to preserve and encourage the preservation of historic properties significant to the history of Hawai'i.

Overall, HHF is pleased to see the project to preserve and protect significant cultural and archaeological resources of the 'Ewa district. To assist with this goal, the following issues should be addressed:

- The project site includes 77 acres. Please include clarification of the boundary of KHP with the boundary of the entire 77 acres, as well as what the proposed use is for the remainder of the acreage.
- The Draft EA should cover or discuss the archaeological as well as architectural inventory surveys for the entire acreage of the proposed project site. Specifically, please include an evaluation of historic resources present and how they will be treated (preservation in place; restoration; reconstruction; rehabilitation; interpretation, etc).
- The Draft EA should address how the security and integrity of the archaeological features within the Kalaeloa Heritage Park will be maintained. The proposed plan includes an interpretive trail which will lead visitors to archaeological sites and features. How will the proposed project ensure that visitors do not endanger the integrity of the historic and cultural sites?

We look forward to the opportunity to review and comment on the Draft Environmental Assessment. Megan Borthwick, Preservation Program Manager, will be HHF's point of contact. She can be reached at 808-523-2900 or Megan@historichawaii.org

Very truly yours,

A handwritten signature in black ink that reads "Kiersten Faulkner".

Kiersten Faulkner, AICP
Executive Director

HISTORIC
HAWAII
FOUNDATION

1974 ► 2014

Copies via email:
Susan Lebo, State Historic Preservation Division
Shad Kāne, Kapolei Hawaiian Civic Club

APPENDIX B
CULTURAL IMPACT ASSESSMENT

Kalaeloa Heritage Park 'Ewa, O'ahu

CULTURAL IMPACT ASSESSMENT

Prepared for:

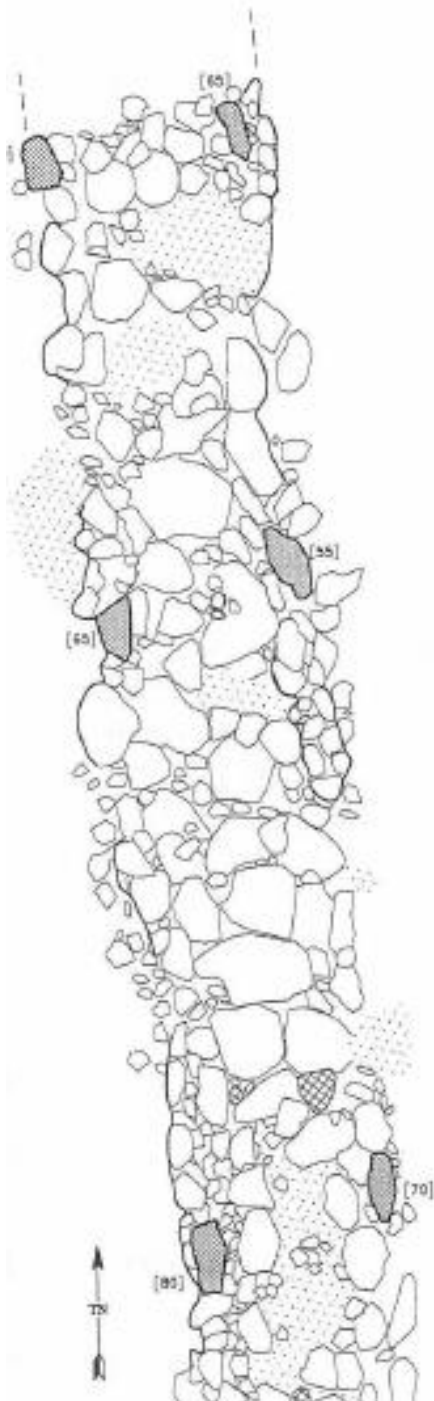
Hawai'i Community Development Authority (HCDA)

April 2014

Prepared by:



Townscape, Inc.



*Archaeological map of Kualaka'i Trail
(Tuggle 1997)*

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1. MANAGEMENT SUMMARY

The proposed Kalaeloa Heritage Park (KHP) will preserve significant Native Hawaiian habitation and agriculture complexes, and share the story of historic ranching and military activities that added layers to the cultural landscape. Kalaeloa is cited in a number of traditional narratives as an inhospitable place, yet it is clear that communities once thrived here. The coral karst and underground rivers beneath this arid region allowed people in villages like Kualaka'i to grow crops in sinkholes and mounds. They used salt from nearby salt flats to preserve food from the sea, storing it in semi-circular rock structures. A paved coral trail runs through the KHP, one of the only remaining ancient trails on the 'Ewa Plain. Numerous habitation platforms and ceremonial structures raise questions for visitors to the KHP—How and why did Native Hawaiians live here? What were their beliefs and practices?

Archaeological surveys of the area have identified 177 cultural and historic features within the KHP, grouped into two main complexes, Sites 1752 and 1753. These sites are considered the largest complexes of Hawaiian features remaining at NAS Barbers Point. They contain substantial and well preserved habitation and religious structures, as well as burials, with numerous areas of habitation deposits. Both sites are recommended as eligible to the National Register of Historic Places based on Criteria A, C, and D. The sites include many structures of distinctive construction, and contain substantial information relevant to Hawaiian history. Additionally, important paleo-environmental data have been recovered from sinkhole excavations within the site area. Long-term preservation of Sites 1752 and 1753 as two associated complexes is recommended (Wickler and Tuggle 1997).

The mission of the KHP is to promote the stewardship and preservation of Native Hawaiian cultural sites and the cultural landscape of Kalaeloa, and to educate the community about cultural traditions and practices. This will be accomplished by guiding visitors on interpretive tours of the cultural and historic sites within the KHP, and hosting volunteer events for invasive species removal and preservation of cultural sites.

Three acres of the park around Site 1753, just south of Long Island Street, have already been cleared and serve as the primary interpretive area. An interpretive trail clearly identifies the location of sites in this area. In the summer of 2012, community members built a Native Hawaiian hale near the current entrance to Site 1753. To the southwest, an interpretive trail through Site 1752 will remain under tree canopy with only targeted clearing of invasive plants from the immediate vicinity of the cultural sites. The trail will extend through approximately seven acres of Site 1752.

The archaeological resources described above will be preserved in place, with continued removal of invasive vegetation. Large kiawe trees growing over some of the sites require large amounts of labor to remove, and great care is taken not to move any of the stones that make up the cultural sites. Careful management of volunteer groups, with only long-time trusted volunteers allowed to access the portions of the KHP beyond the three-acre cleared site, will help to minimize damage to the sites.

In order to maintain the security and integrity of the archaeological features within the KHP, visitors to the KHP will be accompanied by a formally-trained docent. The docent will provide an explanation of the site and rules of conduct before leading the group along the interpretive trail. All visitors to the KHP will be required to observe the following rules:

- Enter the KHP with respect for the cultural landscape and stories it tells us
- Stay on the trail and remain with the group at all times
- Do not touch or remove any cultural or historical objects
- Do not throw or place anything inside the sinkholes

The long range vision for the KHP includes construction of a multi-purpose cultural center where visitors will enter before going to the interpretive trail area. The site of the proposed cultural center and parking area was previously disturbed by bulldozing and military uses. Therefore, the proposed development is not expected to impact cultural or historic sites. If additional historic and cultural sites, including human burials, are uncovered during construction activities, all work in the vicinity will stop and the State Historic Preservation Division will be contacted.



An ancient habitation enclosure in Site 1753, with kauhale beyond.

Note: This Cultural Impact Assessment replicates and synthesizes information primarily from the following sources:

- *“He Mo’olelo ‘Āina—Traditions and Storied Places in the District of ‘Ewa and Moanalua, Island of O’ahu: A Traditional Cultural Properties Study—Technical Report” prepared for the Honolulu Rail Transit Project by Kumu Pono Associates*
- *A Cultural Resource Inventory of Naval Air Station Barbers Point, O’ahu, Hawai’i. Part 1 Survey and Inventory Summary by International Archaeological Research Institute.*

2. INTRODUCTION

The Hawai'i Community Development Authority (HCDA), in partnership with the Kalaeloa Heritage and Legacy Foundation (KHLF), is working to create the Kalaeloa Heritage Park (KHP) in 'Ewa, O'ahu. Located just east of the Kalaeloa Airport, the 77-acre KHP contains significant cultural, historic, and natural resources unique to the 'Ewa Plain. The mission of KHP is to promote the stewardship and preservation of Native Hawaiian cultural sites and the cultural landscape of Kalaeloa, to educate the community about cultural traditions and practices, to advocate cultural awareness, and to implement and maintain an authentic Hawaiian presence in the Kalaeloa area.

When the Barbers Point Naval Air Station (BPNAS) closed in 1999, approximately 3,700 acres of land in Kalaeloa were turned over to various Federal, State, and City agencies. In 2009, federal legislation allowed the U.S. Secretary of the Navy to convey 77 acres of Kalaeloa land to HCDA. HCDA is partnering with the KHLF and community stakeholders to implement the vision and direction set forth in the Kalaeloa Master Plan (2006) to establish an interpretive park. In 2011, the HCDA issued a right-of-entry permit to the KHLF with the intent to eventually establish a long term lease with the KHLF. The HCDA, in partnership with the KHLF Board of Directors and Officers and community stakeholders, will be the final authority regarding the implementation of these plans and directives.

The KHLF is a Native Hawaiian nonprofit organization formed in 2010 by members of 'Ahahui Siwila Hawai'i O Kapolei (ASHOK) and dedicated residents of the Honouliuli ahupua'a for the purpose of preserving and protecting Native Hawaiian cultural and historical sites of Kalaeloa. Since 1998 ASHOK has worked with the Navy, Barbers Point Redevelopment Commission, and then with the HCDA to preserve these sites and minimize damage.

The HCDA and KHLF worked with Townscape, Inc. to complete a CONCEPTUAL PLAN and ENVIRONMENTAL ASSESSMENT for the KHP, pursuant to HRS Chapter 343 which requires an environmental review of projects that trigger certain statutory conditions. An Environmental Assessment for the KHP is triggered by: 1) Use of State lands and Funds; 2) Use within any historic site as designated in the National Register or Hawaii Register, as provided for in the Historic Preservation Act of 1966, Public Law 89-665, or Chapter 6E. The cultural and historic sites found in KHP are more than fifty years old and are recommended as eligible for the National Register of Historic Places, thus meeting the definition of "historic site" in HRS Chapter 6E, Historic Preservation.

This Cultural Impact Assessment (CIA) has been prepared in partial fulfillment of the aforementioned Environmental Assessment. The purpose of the CIA is to assess the potential impact of the proposed action on cultural beliefs, practices, or resources of Native Hawaiians. Section 3 describes the methods used to gather information for this study. Sections 4 to 6 provide a summary of the Traditional, Historical and Archaeological Background of the area. Section 7 documents the Community Consultation and Sections 8 to 9 provide the Cultural Landscape Analysis and Recommendations for preservation.

3. METHODS

The literature review for the traditional and historical background sections includes Hawaiian place names (Pukui 1976), Hawaiian mythology (Beckwith 1970), cultural resource surveys with archaeological information (Tuggle and Tomonari-Tuggle 1997; Wickler and Tuggle 1997), Native Hawaiian and English language newspapers and journals (Ulukau database), Land Commission Awards (Waihona 'Āina Māhele database), and ethnographic studies by Kepā and Onaona Maly (Maly & Maly 2003 and 2012). Together, these sources paint a picture of traditional pre-contact life and historic changes on the 'Ewa plain. Some accounts are specific to the ahupua'a of Honouliuli, the area of Kānehili, or even the village of Kualaka'i, and others provide more general information about the 'Ewa district and patterns of change in Hawai'i.

The community consultation process was conducted by interviewing kama'āina and kūpuna connected to the area of the KHP. Members of the KHLF and 'Ahahui Siwila Hawai'i O Kapolei (ASHOK) shared their mana'o about the cultural practices and history of the area. Through a series of in-person interviews, Townscape spoke to seven people. The information gathered through the interviews is summarized in the Community Consultation Section. Aligned with the purpose of establishing the KHP to educate the community about cultural traditions and practices, it is hoped that the information documented through this Cultural Impact Assessment may help perpetuate traditional knowledge about the cultural landscape of Kalaeloa.

4. TRADITIONAL BACKGROUND

4.1 Place Names

Kalaeloa literally means "long point" in Hawaiian, most likely receiving this name for its appearance from the east (Diamond Head) end of Mamala Bay, from which it appears to be an extremely long point. Kalaeloa is the original name for Barber's Point, O'ahu, where Captain Henry Barber went aground in 1796. In 2000, following the closure of BPNAS, the U.S. Board on Geographic Names approved the Redevelopment Commission's application to change the name of the area back to the traditional Hawaiian name Kalaeloa (Pukui et al. 1974).

The KHP is located in an area of the Honouliuli ahupua'a known historically as Kānehili: an open, inhospitable kula land, noted in tradition for its association with the Plain of Kaupe'a, and as a place of wandering spirits. This area is cited in the tradition of Hi'iaka-i-ka-poli-o-Pele and in historical narratives (Maly 2012). Honouliuli is the largest land division of the 'Ewa district, stretching down from the Wai'anae mountains to Lihu'e, the area now occupied by Schofield Barracks, all the way to the Pu'uloa estuary, now known as Pearl Harbor. The ocean boundary was O'ahu's southern shore, from Kahe Point to Pu'uloa.

The ancient village site of Kualaka'i is a wahi pana, a storied place in Native Hawaiian tradition. "It is just seaward of Pu'u-o-Kapolei, home of the Kamapua'a family, and probably a sacred place associated with the setting sun." (Tuggle 1997). With its storied places, the KHP culturally defines the new community of Kapolei and its namesake Kapo, elder sister of Pele (Kane 2009).

From the earliest of human times, the Hawaiian landscape has been alive with spiritual beliefs, traditions, customs, and practices. Even with all that has been lost, research in Hawaiian language materials, historical literature, and in the knowledge of families descended from traditional residents of the land reveals a wealth of history through place names, and in some instances through on-going practices. The list below provides selected place names in Honouliuli ahupua‘a that were frequently referenced in historical accounts.

- Honouliuli Ahupua‘a. In one tradition, Honouliuli is named for a chief of the same name, who was the husband of Kapālama. They were the parents of Lepeamoā and Kauilani, two heroes in ancient tradition. Of the Honouliuli coral plains McAllister (44, site 146) says : ‘...It is probable that the holes and pits in the coral were formerly used by the Hawaiians. Frequently the soil on the floor of the larger pits was used for cultivation, and even today one comes upon bananas and Hawaiian sugar cane still growing in them.’” (Handy, 1940:82)
- Kānehili An open, inhospitable kula land, noted in tradition for its association with Kaupē‘a, and as a place of wandering spirits. Cited in the tradition of Hi‘iaka-i-ka-poli-o-Pele and in historical narratives.
- Kaupē‘a Honouliuli. An area noted as the wandering place of the spirits of the dead, who are seeking their way to another realm. An uninhabited plain with wiliwili (*Erythrina*) trees and ‘ōhai (*Sesbania tomentosa*) plants, and associated with Kānehili and Leiolono. From Kaupē‘a, one may see Leiolono where unclaimed spirits are lost in never ending darkness.
- Kualakā‘i An ancient village site situated on the western shore. Cited in native traditions and claims of the Māhele.
- Kumumamo Honouliuli coastal plains. Cited in historical mele.
- Pōhākea A famed mountain pass over which an ancient trail between Honouliuli and Wai‘anae crossed. Noted in several native traditions for its commanding view plane to the lowlands and noted places of ‘Ewa District. One branch of the trail to Pōhākea passed near Pu‘uokapolei. Cited in traditions of Kāne, Kanaloa and Hi‘iaka-i-kapoli- o-Pele.
- Pu‘uloa This land was traditionally an ‘ili of Honouliuli, and marked the entrance to Keawa lau o Pu‘uloa (The many bays of Pu‘uloa – Pearl Harbor, Pearl River or Wai Momi). The waters of Pu‘uloa were protected by the shark goddess Ka‘ahupāhau, her brother Kahi‘ukā, and the little shark god Ka-‘ehu-iki-manō-o-Pu‘uloa.
- Pu‘u-o-Kapolei This hill was named for the goddess Kapo, an elder sister of Pele. It was also the home of the supernatural grandmother of the demigod, Kamapua‘a (He Moololo no Kamapuaa, 1861). S.M. Kamakau recorded the tradition that Pu‘u o Kapolei was used by the people of O‘ahu to mark the seasons of the year. When the sun set over the hill, it was Kau (summer). When the sun moved south, setting beyond the hill, it was Ho‘oilo (winter). (Kamakau, 1976:14)

4.2 Land Use and Settlement Patterns

The model for the 'Ewa Plain during the early period of human occupation is one of an "open savanna-like grassland" where "trees such as Pritchardia, wiliwili, noni and kou formed small groves in favorable locations ... " (Davis 1990:342). In pre-contact Hawai'i, the 'Ewa Plain was one section of the traditional ahupua'a of Honouliuli in the district of 'Ewa. This ahupua'a included access to a section of the interior plateau, to the resources of the Wai'anae mountains, and to one of the richest local environments in all of Hawai'i, Pearl Harbor, with its fish and shellfish productivity and irrigable lowlands at the head of the harbor. In the areas of the 'Ewa Plain where archaeology has been carried out (summarized in Tuggle and Tomonari-Tuggle 1997b), radiocarbon dating suggests the possibility of early limited occupation prior to A.O. 1000, scattered habitation from A.O. 1000 to 1400, and the bulk of population growth and settlement from A.O. 1400 to 1800.

4.3 Agriculture and Gathering of Resources

Along with natural features of the area such as sinkholes and ponds, human-made structures provide evidence of the subsistence lifestyle of the ancient residents of Kānehili. Native Hawaiians living in coastal areas like Kānehili used salt gathered to preserve fish and other ocean resources as a primary food supply. Kualaka'i was a well-known salt flat just west of the KHP boundary. Traditions tell of the *kia manu* (bird catcher), who gathered the yellow bird feathers did not have to follow the *kapu* of prostrating before the chiefs who came to collect the feathers from him, marking a significant shift in relations between chiefs and commoners. Generally, the evidence indicates a scattered rural population, with a mixed subsistence base involving collection of marine resources and dryland cultivation, probably with emphasis on sweet potato. There has been little evidence of residential complexes for high-ranking individuals or of large temples.

4.4 Traditions of the 'Ewa District

Hawaiian *mo'olelo* (traditions and historical narratives) express native beliefs, customs, practices, and history. Landscapes hold many stories centered on *wahi pana* (sacred places). In ancient times, each place name was associated with a tradition—ranging from the presence and interactions of the gods with people, to documenting an event, or the characteristics of a given place. Oral traditions were passed down through families and recorded in writing in the nineteenth and early twentieth centuries (Maly 2012). The *mo'olelo* and *wahi pana* of the 'Ewa district and specifically the ahupua'a of Honouliuli help us situate the archaeological sites of KHP in a broader cultural and historical context.

A number of *mo'olelo* related to the ahupua'a of Honouliuli are documented by Kepā Maly in "He *Mo'olelo 'Āina*—Traditions and Storied Places In the District of 'Ewa and Moanalua (In The District of Kona), Island of O'ahu: A Traditional Cultural Properties Study – Technical Report" prepared for the Honolulu rail transit project (Kumu Pono Associates, 2012). Prior to that report, the Final Environmental Impact Statement for the Disposal and Reuse of BPNAS (Navy 1999) and related Cultural Resource Inventory (Tuggle 1997) documented many of the cultural and historic resources of the area. The following information is summarized primarily from the documents noted above.

The Tradition of Kana

Hawaiian historian Samuel M. Kamakau's submittals to the Hawaiian newspaper Kuokoa provide details on wahi pana, or storied places of the 'Ewa District. Kamakau cites the tradition of Kana, recording the names of certain chiefly and priestly ancestors who came from Kahiki, and who were the founders of lineages tied to various ahupua'a in the 'Ewa District. It is possible that this is the reason Kamakau refers to 'Ewa as "the celebrated lands of our ancestors". The upright stones found in many of the cultural sites on the 'Ewa Plain also echo the Tahitian style of construction.

Origins of 'ulu in Hawaii

A significant mo'olelo tells of the origin of the 'ulu, or breadfruit, in 'Ewa as one of the first two places in Hawai'i. The breadfruit of Pu'uloa came from a mythical land in Kahiki, named Kanehunamoku. It was brought by two men of Pu'uloa who were out fishing and, caught in a rainstorm, landed on an island only inhabited by the gods who then introduced the two men to the fruit of the 'ulu tree. The first human beings or "olohe", were said to have landed at 'Ewa Beach near Pu'uloa (Beckwith 1970:343).

He Mo'olelo no Kamapua'a: Tradition of Kamapua'a

When the chief Olopana was killed, Kamapua'a became chief of O'ahu. He granted the priest Lonoawahi all lands with water, leaving his family with all the other lands. Following a period of absence, Kamapua'a returned to O'ahu and learned that another chief now ruled the island, that his parents had been chased to Kaua'i, and that his favorite brother had been killed. The following excerpts describe places and activities in 'Ewa:

After awakening in Pu'uloa, Kamapua'a went to Honouliuli and saw his grandmother, Kamauluniho, sitting along the side of a taro pond field. She was looking with desire to the lands below, where some of the men of the king were working, and wishing that they would leave even a little bit of taro behind for her to eat. Kamapua'a then went and stood next to her, and greeted her. She replied, greeting him, but did not recognize him as her grandson. He then asked her why she was sitting there.

She told him, "I am looking to the lowlands, where the men of the chief are working, and wishing that they would leave a little behind so that I may have some food." Kamapua'a then said to his grandmother, "How did you live before?" She answered, "What is it to you? My grandchildren have died, one in a battle with Pele, another buried, and one on Kauai." This is how she spoke, not understanding that the one before here was her own grandson. Kamapua'a then answered, "I am going to get some food for me." She asked, "Where will you get your food?" He told her, "I will go and perhaps ask for some, and maybe they will give me some of their food.

Kamapua'a went and said to one of the men who was pulling taro, "Let the two of us pull taro for us." The man agreed, and the two of them pulled taro, some for the man and some for Kamapua'a. Kamapua'a pulled a large quantity and then carried it up to his grandmother. Because of the large load that he carried, Kamauluniho suspected that the man was indeed her own grandson, Kamapua'a. She chanted a name song to Kamapua'a and he chanted to her as well. Together, they carried the taro to the house

she shared with another old woman, at Pu‘u-o-kapolei. Setting down their bundles of taro, Kamauluanoho placed Kamapua‘a on her lap and wept over him. Preparations were made for a meal, and Kamapua‘a and the old woman went out to her garden to collect sweet potatoes. They then returned to the house and ate...

(G.W. Kahiolo, Ka Hae Hawaii, 1861)

He Kanikau Aloha Keia Nou e Luakauwawahine: Lamentations of Love

Several wahi pana on the Honouliuli-Pu‘uloa plains are associated with the spirits of the departed, and found in a wide range of traditional narratives. The following is a lamentation of love for the author’s deceased wife, “He Kanikau Aloha Keia Nou e Luakauwawahine”.

...My woman (wife) at ‘Ewa where
 The fish that quiet voices are found,
 Where the wind is the only voice that answers,
 My woman from where the fish whisper at one’s feet,
 We spoke by the gesturing of hands,
 Speaking its name, a Mahamoe (bivalve),
 From the wind which stirs up the dust of ‘Ewa,
 The wiliwili trees are like the people of Kaupe‘a at Kānehili.
 I have turned, twice repented in your love,
 My woman from the many bays of Pu‘uloa,
 From the hot plains of Pe‘ekāua,
 Kahi a kua e noho ai, Place where we two dwelled,
 My woman from the distant plain of Kumumamo,
 The place where we two traveled,
 In the cold and the wind...

(By Pawai, Nupepa Kuokoa, 1862)

Traditions and practices pertaining to the dead

Care for the dead (kupapa‘u), respect of the graves (ilina), and traditions associated with the spirit after death are subjects of great significance to Hawaiians – past and present. The narrative below tells about traditions and practices pertaining to the dead that are of particular importance to lands and specific wahi pana of Honouliuli.

On the plain of Kaupe‘a beside Pu‘uloa, wandering souls could go to catch moths (pulelehua) and spiders (nanana). However, wandering souls would not go far in the places mentioned earlier before they would be found catching spiders by ‘aumakua souls, and be helped to escape. Those souls who had no such help were indeed friendless (he po‘e ‘uhane hauka‘e lakou), and there were many who were called by this name, po‘e ‘uhane hauka‘e.

(S.M. Kamakau, Ka Moolelo Hawaii, 1870)

He Wānana: A Prophecy

One of the great traditions of the Pu‘uloa area is tied to the period of ca. 1782, when Kahekili (King of Maui) tricked his nephew, Kahahana, (King of O‘ahu) into killing his high priest, Ka‘ōpuluhulu. Arriving at

the place now called Nānākuli, Ka'ōpūlupulu called out to Kahahana who looked at him, but made as if he didn't hear the call (nānā kuli). Ka'ōpūlupulu then knew for certain that he and his son were to be killed, and he told Kahulupū'e:

“I nui ke aho a moe i ke kai! No ke kai ka hoi ua aina!”

Strive to lie down in the ocean! For our revenge will come from other lands across the sea.

(S.M. Kamakau, Nupepa Kuokoa, 1867)

Kahulupū'e ran into the water near Pu'uohulu where he was killed. Ka'ōpūlupulu continued his flight across the Honouliuli plain to the shore of Pu'ūloa, where he was then killed. Elder kama'āina have expressed the thought that the prophecy of Ka'ōpūlupulu was fulfilled with the arrival of foreigners, the loss of their land and kingdom, and military control over Pu'ūloa (Pearl Harbor), and even to leading to the advent of World War II (pers. comm. Samuel Hoapili Lono, 1973).

Excerpts of an untitled letter written by S.M. Kamakau

“People are like the ohai blossoms of Kaupea,
The wiliwili appear to stagger in the sun,
Stricken on the plain of Kanehili,
At the shore of Ka-olina (Ko'olina),
There is a place of joy (reprieve) from the sun at Pu'ūloa,
A foundation of joy in the moist dew,
A hill that is perfect on the shore,
What is your little task,
My many harbored land,
The sun staggers across the lone plain,
The sea is afraid,
It is only there.
Greetings—.”

(Kamakau, Untitled letter, Nupepa Kuokoa, August 10, 1867)

Tradition of Kauilani

The tradition of Kauilani spans various islands of the Hawaiian Archipelago. It is one of several Hawaiian traditions about children of chiefly parents with a godly lineage. The following account offers rich details of place, practices and history in the 'Ewa district.

Kauilani was descended from high chiefs of Kahiki and Hawaii, and both Kauilani and his elder sister, Lepeamoa, were possessed of supernatural powers. The elders of Kauhao were Kapalama (w) and Honouliuli (k), and the lands on which they lived are now named for them. When Lepeamoa was born, she was born in the form of a hen's egg. Discerning the supernatural nature of her granddaughter, Kapalama and Honouliuli sailed to Kauai and retrieved the egg. When she hatched, she was in the form of a beautiful bird with many brightly colored feathers. After Lepeamoa was taken to Oahu, her younger brother, Kauilani was born. He was raised by his grandparents in the uplands of Wailua, Kauai.

Kauilani learned that he had a sister who was being raised on Oahu, by the elders of Kauhao. Kauilani determined to go and seek out his sister, and Kauhao instructed him about the lands he would pass and how he would know his sister. She told him that he must sail from Wailua and along the coast of Wai'anae, and along the shore of Pu'uloa, where he would find a landing and the path to Kapalama. Before his departure, Kauhao also gave Kauilani a supernatural spear named Koa-wi Koa-wa, which would help him along his journey, and lead him to his elders on Oahu.

Departing from Wailua, Kauilani traveled to the shore at Nukolii. He threw the spear, and then took off after it, across Kaieiewaho channel, sailing to Oahu. In his canoe, Kauilani passed the coast line of Waianae, and he then drew near the shore of Kualaka'i where the spear had landed. While Kauilani was traveling from Kauai to Oahu, two sisters, Kamalulena and Keawalau, who had been surfing at Kualaka'i, returned to the shore and found the spear. Seeing the spear, and recognizing its excellent quality, the sisters hid it, seeing no man who could claim it.

Shortly thereafter, Kauilani passed the coast of Waianae and landed on the shore of Kualaka'i to retrieve his spear. Upon landing, Kauilani saw the two sisters and noted that his spear was nowhere to be seen. Kauilani inquired of the sisters if they had seen the spear, which they denied. Kauilani discerned that they were lying, and told them so, and he then called out to his traveling companion, the spear, Koa-wi Koa-wa. The spear answered from where the sisters had hidden it, and Kauilani picked it up and threw it again. It landed near the entry to Pu'uloa.

Arriving where the spear landed, the spear then told Kauilani to climb a wiliwili tree that was growing nearby. From there, he would see a rainbow at the shore, and a person picking limpets, octopus, and other things. That person would be Lepeamoa, Kauilani's sister. Kauilani climbed the wiliwili tree and saw a red patch of a rainbow upon the water near the shore. He asked Koa-wi Koa-wa about this, and learned that it was the rainbow shroud of his sister, who was in her bird form near the shore. Before Kauilani could approach Lepeamoa, she disappeared, returning to Kapalama. Kauilani prepared to follow, and as he drew near, Kapalama knew of his arrival, and ordered food to be prepared. As Kauilani drew near the house, Kapalama saw him and cried out, greeting her grandson. They ate together, and then Kapalama inquired about the purpose of Kauilani's journey. He explained that he wished to see his sister, Lepeamoa...

Before meeting her young brother, Lepeamoa tested Kauilani to determine the depth of his skills and strength, and his ability to care for himself while traveling around the island. Kauilani demonstrated exceptional strength and skill, and Lepeamoa took her human form and greeted Kauilani.

(S. Kapohu, Nupepa Kuokoa 1869)

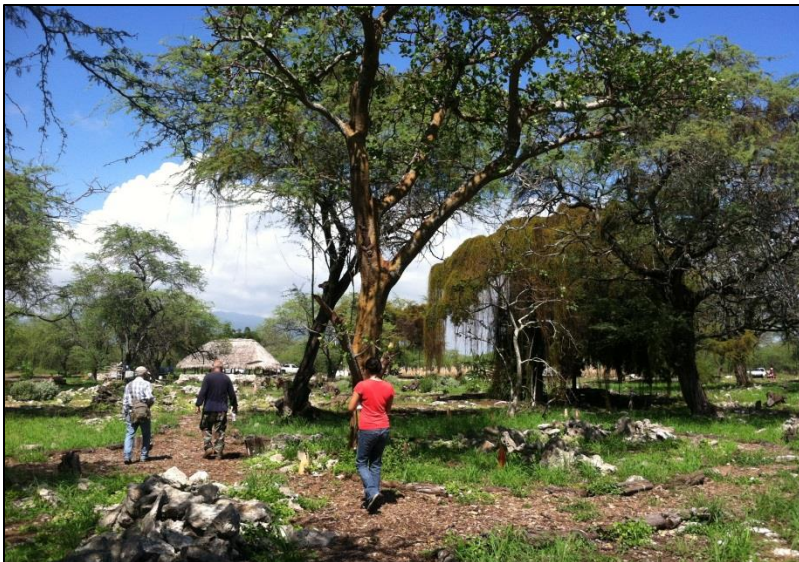
A Hawaiian Tradition of Laukaieie...

The following excerpts of Hawaiian historian Moses Manu's "He Moololo Kaa Hawaii no Laukaieie...", include an overview of the mo'olelo and those narratives which recount the travels of Makanike'oe. During his travels, Makanike'oe sought out caves, and tunnels that served as underground trails, and through the description of his travels, we learn about some of the wahi pana and resources of the lands through which he traveled.

Makanikeoe then turned to the plain of Pu'uloa. He passed many pits in this place where the bones of men have been left. He then followed the trail to the breadfruit tree, Leiwalo, at Honouliuli. This is the breadfruit tree of the expert sailor, Kahai, so told in his story. There are also many pits in which were planted sugarcane and bananas, and planting mounds. He also saw manu oo (honey creepers) sipping the nectar of noni blossoms. There were also two ducks that had gone into a pit, and with a great strength, they were trying to push a stone over, to hide the pit. This Makanikeoe knew what the ducks were trying to do. They wanted to hide a spring of water which flowed underground there. It is this spring which in calm times could be heard, but not found by the people who passed through this area. It was a secret spring, known only to certain native residents of the area, and its name is recorded in the last line of the song:

The o-u is the joyful bird of Kaupea,
 The joyful voiced o-o is of Pu'uloa,
 Softening the blossoms of the wiliwili,
 Drinking the drops of nectar from the noni,
 The birds drink and pass time,
 The eyes cast about seeking,
 The water of the natives,
 The eyes seek the water of Kaiona.

(Moses Manu, Nupepa Ka Oiaio 1894)



Wiliwili trees grow in one of the ancient village sites of Kalaeloa Heritage Park. Nearby is a large sinkhole encircled by a rock wall, possibly the source of underground water cited in the "Tradition of Laukaieie" (above).

A Hawaiian Tradition of Hi'iaka who is Held in the Bosom of Pele...

The epic tradition of the goddess Pele and her youngest sister, Hi'iaka-i-ka-poli-o-Pele (Hi'iaka) offers important details pertaining to wahi pana traditional and customary practices and the naming of places visited by Hi'iaka as she traveled through the 'Ewa District and on into to the Honolulu region of the Kona District on O'ahu.

Hi'iaka continued her walk in the stifling heat of the sun on the plain of Pu'u-o-kapolei. Hi'iaka saw a mao blossom as she descended, and she picked it in the heat of the sun and chanted out:

Kona is made dizzy in the long days of Makalii [in the summer],
The wiliwili [Erythrina] trees sway, then comes the calm,
The birds of Kanehili endure,
The sun is exceedingly hot on Pu'u-o-kapolei,
The mao growth is stunted on the seaward plain,
The nohu [Tribulus cistoides] flowers are like a halakea (kapa) covering
The puaula [young kumu] fish seem to flash along the shores of Kaupea
A companion [is the] Naulu wind,
It is a traveling companion for me.

Upon finishing her chant, Hi'iaka continued down the trail and arrived at Kualaka'i. At Kualaka'i, the trail took her to a spring of cool water. Looking into the spring, she saw her reflection shining brightly upon the water's surface. Hi'iaka also saw two lehua trees growing on each side of the spring. Now these two lehua trees were completely covered with blossoms. She then picked the lehua blossoms of these two trees and made garlands for herself. Hi'iaka fashioned four strands to her lei, then removed the garlands of mao she had received when descending from Pohakea, and set them aside. She then took the garlands which she had made, and adorned herself with them. Hi'iaka then heard the voice calling out from the area of Kanehili:

Hi'iaka is the woman, who picked the flowers of Hoakalei,
And with a needle strung and made them into
four garlands, the sectioned lei of the woman, O my younger sibling.
My younger sibling who came from the place
where the dusty wind rises from below
Overtaken in the sea of Hilo-one,
The aloha is for Hilo,
Love for the lei.

That place, Hilo-one, which is mentioned in the mele (chant), is situated on the northern side of Kualaka'i, towards Kalaeloa. And the name of the spring in which Hi'iaka looked and saw her reflection was Hoakalei (Reflection of a lei). It was at this place that Hi'iaka saw the two lehua trees growing, from which she picked the blossoms to make her four garlands. Hearing the chant, Hi'iaka turned toward where it had come from, and saw her older sister Kapo looking at her. Kapo had arrived at Oahu from Maui, where she was teaching the practices of the hula. Seeing Kapo, Hi'iaka cried out with affection for her older sister...

(Ka Hoku o Hawaii 1927)

5. HISTORICAL BACKGROUND

Following European contact, it is likely that the population of 'Ewa Plain declined rapidly as part of the widespread decimation of Native Hawaiian communities due to foreign diseases like smallpox (Tuggle and Tomonari-Tuggle 1997). Only small villages survived along the coast, including Kualaka'i. This section provides first-hand accounts about changes that took place in 'Ewa after Western contact with the arrival of Captain Cook in the Hawaiian Islands in 1778. The following narratives were written by Native Hawaiians and foreign visitors and residents in the late 1800's into the 1900's. They document changes in the landscape, the decreasing Hawaiian presence, loss of wahi pana and noted places, concerns about United States control over Pearl Harbor, development of ranching and plantation business interests in the region, and the changing make-up of the communities.

5.1 Early Post-Contact Period

With Lord Byron at the Sandwich Islands In 1825 "Trip to Pearl River"

In 1824, Liholiho (King Kamehameha II) and his wife, Kamāmalu died while on a trip to England. In May of 1825, their bodies were returned to Hawai'i by Lord Byron. In Lord Byron's party was a Scottish botanist named James McCrae, who traveled to various locations in the company of native guides, making observations and collecting biological samples. One of McCrae's journeys along with Lord Byron and party took him to Pu'uloa, the "Pearl River", where he described the scene:

The neighbourhood of the Pearl River is very extensive, rising backwards with a gentle slope towards the woods, but is without cultivation, except round the outskirts to about half a mile from the water. The country is divided into separate farms or allotments belonging to the chiefs, and enclosed with walls from four to six feet high, made of a mixture of mud and stone. The poorer natives live on these farms, also a few ragged foreigners who have a hut with a small spot of ground given them, for which they must work for the chiefs a certain number of days besides paying an annual rent in dogs, hogs, goats, poultry and tapa cloths, which they have to carry to whatever spot their master is then living on the island.

On the least neglect to perform these demands, they are turned away and deprived of whatever stock, etc., they may possess. Such is the present despotic or absolute law in the Sandwich Islands. This is corroborated by all foreigners met with at different times, who, on our arrival, hoped that Lord Byron would render them their little property more secure in future. Unfortunately they must wait till the British Consul helps them, as we have no authority to interfere with the laws of the country.

On our way home we noticed that the country on the side towards the woods still remained uncultivated, also towards the sea coast, except the lower ends of the small valleys which are cultivated with the taro in ponds, which much resemble peat mosses that had been worked and afterwards allowed to get full of stagnant water. There is no convenient road to travel anywhere on the island. We met with another subterranean

river at the side of one of the hollows, larger than the other, but of no great fall after its appearance from underground.

(Macrae, 1825)

Tours Made around O‘ahu in 1826 & 1828

In 1820, the first contingent of Protestant missionaries arrived in the Hawaiian Islands. Periodically, the Honolulu station managers would travel around O‘ahu to inspect the progress being made in work in the outlying stations, including church work, educational endeavors, and facilities to support the foreign missionaries living situation. Levi Chamberlain (1828), made tours of O‘ahu in 1826 and 1828, and wrote fairly detailed descriptions of the districts he visited, including lands of the Honouliuli-Moanalua region.

After walking three hours & most of the time in mud, we reached Honouliuli in the district of Ewa. A school of 22 scholars had assembled which I examined. The head man, Kawaa, very kindly entertained me, caused a fowl to be cooked and some kalo to be nicely prepared, and furnished the native with a liberal supply of fish and poi. He invited me to stop and spend the Sabbath with him; but as his house was small, and our company had now become large by the accession of the teachers & their attendants who separated from us at Waialua and had crossed the inland and had put up at this place, I thought it best to decline his offer. But feeling desirous that religious worship should be conducted here on the morrow, I recommended that the party who had crossed the island should spend the Sabbath here.

(Chamberlain, 1828)

Death of Apii, Konohiki of Pu‘uloa

Here is this, a man of our lands had died. He was of Pu‘uloa, and the overseer of Kualaka‘i ‘ili, He dove in and struck the coral, and died. So his canoe was floating on the water. Some men say that some distance off his canoe was floating, with fish in the canoe. Therefore the men said, “Apii isn’t there, it is only the canoe floating about, there is no man. Let us go get the canoe.” They went to get the canoe and search around where the canoe was floating. There they found him below the coral stuck fast underneath. So they retrieved him from where he lay below. They carried him onto the canoe and returned him to the land. His wife cried out of love. Then they went to fetch someone who could offer a prayer.

(David Kaope, Honouliuli, Ke Kumu Hawaii, 1835)

5.2 The Māhele Period

The ahupua‘a of Honouliuli was awarded to Kekau‘onohi in the Māhele land distribution of the mid-1800s. In 1864, the entire ahupua‘a of Honouliuli (except for the ‘ili of Pu‘uloa) was deeded to John H. Coney, and then sold in 1877 to James Campbell.

Poino! Distress! (Hawaiians Denied Access to Pu‘uloa Fisheries)

Mose, a native of Honouliuli, presented a public account of the distress that he, Isaaka and Makahanhano endured, in being denied access to the shore along Ke Awalau o Pu‘uloa, by a foreign tenant of the land.

We departed from Honouliuli in our boat and arrived at the place called Keawalau o Pu'uloa, when a wind arose from the shore. It was the māunuunu of the coastal region — the 'ōlauniu is of Waikīkī, and the kūkalahale is of Honolulu. We turned the bow of our boat, intending to go to Honolulu to sell our fish — that is when we ran into trouble. A foreigner came up to us and asked whose boat is this, his name was Isaac. We told him it was ours. He then asked our names and we told him, Mose, Isaaka and Makahanohano. He then told us, "Go away, be off, Hawaiians. He then shot at us, and we quickly tried to hide in the bow of our boat. We tried to push off, but because of the wind from the sea, we had a difficult time. We finally got the sail up and we were able to get away from the trouble. Say, the love of our Lord is beautiful, the one who helps those in need, and who rescues us from our troubles.

Question: Did the King agree to this being done by those below him, or not. The commoners live below the King, and it is he who determines what is right for each man. I will seek to prosecute this pursuant to the law of the land.

(Mose, Honouliuli, 'Ewa. Nov. 18, 1857)

The Salt of Pu'uloa (1860)

In 1860, the advertisement below was published announcing the availability of ocean salt which was being made at Pu'uloa.

From ancient time, the natives have known about and made salt; it is that with which food is seasoned, and is also an item of trade; but the salt of Hawaii is not very good, it is not the best for salting beef and salting pork. If it is left for long, it spoils. But at this time, salt is made at Pu'uloa, and it is very good. The bitterness has been removed from within; a mill has been gotten and the salt mixed like flour, and like the salt of other lands; therefore, at this time, the salt of Pu'uloa is greatly desired. It is taken to other lands and it is a thing that brings prosperity to the land.

(Ka Kae Hawaii, 1860)

Petition for Boundary Commission Award for Honouliuli Ahupua'a

The Hawaiian Legislature created the Boundary Commission and the position of Commissioner of Boundaries on August 23, 1862. The task of each Island Boundary Commissioner was to settle the boundaries of the larger lands on that island, particularly ahupua'a, which had been awarded in the Māhele without survey. Following a publicly advertised judicial hearing where boundaries could be disputed by claimants, the Boundary Commissioner would issue a certificate including survey notes and map. The books of these hearings and records were then deposited in the Government Surveyor's Office in Honolulu. This certificate was then used to get a Royal Patent (RP). The application below is for the ahupua'a of Honouliuli in 1873.

Application of Mrs. A.A. Haaelea

To the Honorable W.P. Kamakau, Commissioner Boundaries for the island of Oahu.

The undersigned applicant represents that she is the owner of the Ahupua'a called Honouliuli, situated in the District of 'Ewa, Island of O'ahu aforesaid, that the same was awarded by name

to Mikahela Kekauonohi, deceased, by Land Commission Award No. 11216; that the same has not been awarded by the Land Commission, patented or conveyed by Deed from the King by boundaries described in such award, patent or Deed; and therefore she respectfully requests that the boundaries of said Ahupua'a may be settled by Your Honorable Commission, and to that end makes this application to have the boundaries of said land decided and certified by you as Commissioner of Boundaries as aforesaid.

Pursuant to the statute, the Undersigned applicant represents that the name of the land is Honouliuli, in the District of 'Ewa, Island of O'ahu, one of the Hawaiian islands; that the following are the names of the adjoining lands, and the names of the owners of the same, so far as known to the undersigned applicant, to wit. "Wai'anae," Crown Land; "Nānākuli", Crown Land; "Pauhala" owned by J. Robinson; "Waikakalaua," Crown Land in possession of J. Robinson; "Hoaeae," owned by J. Robinson; "Waikele," owned by K. Komoikehuehu; "Waipio," owned by Estate John Ii, deceased; "Halawa," owned by Dowager Queen Emma.

Very Respectfully for A.A. Haalelea by her Attorney at Law, R.H. Stanley. Honolulu, June 23, 1873

5.3 Ranching and Farming

Organized livestock operations began in 'Ewa in 1871, but it was not until James Campbell acquired the land in 1877 and formed Honouliuli Ranch that ranching was intensively pursued and the land developed for cattle grazing through fence construction and water development. In 1889, Campbell leased most of Honouliuli to Benjamin Dillingham, and the upper part of the 'Ewa Plain was developed for the cultivation of sugarcane, a few small fields were developed at what is now NAS Barbers Point. During the late 19th century, sisal (*Agave sisalana*) began to be cultivated on the Plain, and the 300-acre 'Ewa sisal plantation extended into the area of the former BPNAS with production continuing into the 1920s. Ranching, sisal, and sugarcane cultivation left their mark in the form of cultural features of stone walls, fences, roads, and windmills, all alterations to the landscape of the area now comprising the Station (Wickler and Tuggle 1997).

A Visit to Honouliuli Ranch on the 'Ewa Plain

A journal account published in the Honouliuli Ranch Daily Bulletin in 1885 provides a historical perspective on the landscape and ranching business in the 'Ewa District. It gives us an idea of the steady changes in land use and vast development of lands under the control of ranches.

The trail leads over coral which is evidently upheaval. Up through every crevice and around every boulder, big and little, there are thick growths of pili, makuekue, pualele (milk weed), manienie, Kukaepuaa and other native grasses. At one place, a cavity in the rocks contains luxuriant growths of breadfruit, bananas, sugar-cane, and numbers of wiliwili trees, with their exceptionally pretty red seeds. The natives say when these seeds are ripe and red, there are plenty sharks off Pu'uloa. On the lower part of this land among the rocks, fine clumps of algarroba trees appear in different stages of development. All these trees have grown up within about six years. The large progeny of baby algarobas whose frowsy heads appear here and there over the plains, if not nipped by cattle would evidently evolve, within a very few years, a race of sylvan giants. Cattle

kept off, and the natural propagation of these fine trees assisted by some planting, there is here the possibility of a big bonanza in a ten thousand acre forest within ten miles of the city of Honolulu.

As pasture land this portion of the ranch is unsurpassable in richness. It is the part of Honouliuli designated the fattening paddock. Cattle intended for the slaughter house are brought here to have the “gilt edge” finish put on them. About six head are slaughtered every day for the Honolulu market and forwarded by the steamer Kapiolani. The ranch is capable of supplying a much larger daily quota of beefs, but the demand is limited and the ranch is of course stocked considerably short of its capacity. There are at present on it some 5,500 head all told. But if the grasses, and other plants in their present condition, mean anything, they indicate enough and to spare for herds numbering twice five thousand.

(Daily Bulletin, Honouliuli Ranch, August 31, 1885)

Development of the ‘Ewa Sugar Plantation and O‘ahu Railway & Land Company (1890)

Henry M. Whitney’s “Tourists’ Guide...” provides an overview of developments in the ‘Ewa- Moanalua region in 1890. At the time of writing, the O‘ahu Railway & Land Company (O.R. & L. Co.), had just opened with train service passing from Honolulu to the ‘Ewa Court House. With the development of the rail system, businesses began immediately expanding, as rail access made the job of transport freight and livestock an easy task, and the ‘Ewa Plantation incorporated. Whitney’s description of the inaugural service on November 15, 1889 provides a description of the Pearl Harbor regions, documenting the continuing change in the ‘Ewa landscape, and the planning going into making “Pearl City” where new homes and business opportunities came to be built.

...Within the past year Hawaii has started in the footsteps of America by projecting a railroad around the island of O‘ahu, and actually perfecting, within the period from April 1st, 1889, to January 1st, 1890, a well-equipped railroad in running order, extending from Honolulu along the southern shore of the island to a temporary terminus at Ewa Court House, a distance of twelve miles. The incorporation of the O‘ahu Railway and Land Company with a capital stock of \$700,000 was the next step in the venture, but not an easy one by any means, as home capitalists were timid at that time, and few would believe that the soil of Oahu was worth developing to the extent of Mr. Dillingham’s plans.

(Henry Whitney, “Tourists’ Guide...”, 1890)

Recollections of Life and Events in ‘Ewa (1836 to 1900)

Sereno E. Bishop, son of Reverend A. Bishop moved to Waiawa in 1836. Though not particularly friendly to Hawaiians or their kingdom, he recorded many facets of Hawai‘i’s history, which shed light on some places and events he experienced. In addition to managing the ‘Ewa mission station, Bishop’s father also assisted in conducting surveys during the period of the Māhele. The narratives below, published in *The Friend* (1901), provide readers with some of Bishops’ recollection of his early life in ‘Ewa and changes over time.

Throughout the district of ‘Ewa the common people were generally well fed. Owing to the decay of population, great breadths of taro marsh had fallen into disuse, and there was a surplus of soil and water for raising food.

The dwellings of the common natives, I think, were in poorer condition than those in Kailua. Doubtless the moister climate caused more decay of the thatch. The people were also probably more drunken and dissolute. As in Kailua there was no dwelling of a native not of the old Hawaiian style.

(Old Memories of Hawaii by S. E Bishop. May 1901)

5.4 Military Development

In 1932, the U.S. Navy leased 206 acres of the Campbell ranch to build a steel tower mooring mast for dirigibles, and in 1940 the Navy increased its leased area to 3,500 acres. A Marine Corps airfield, known as ‘Ewa Mooring Mast Field, was built on the original leased area and completed in June 1941. The larger area of over 3,000 acres was used for the development of Naval Air Station, Barbers Point, with construction beginning in November 1941. Following the Pearl Harbor attack on December 7, 1941, the plans for the airfield changed and it became a major war facility. The World War II construction of BPNAS and Marine Corps Air Station ‘Ewa produced numerous buildings and military training and defensive features that have become important historical elements of the cultural landscape.



A collapsed wooden dynamite storage facility, WWII plane wreck and historic trash are among the artifacts that tell the story of military use of Kalaeloa from 1932 – 1999, when the BPNAS closed.



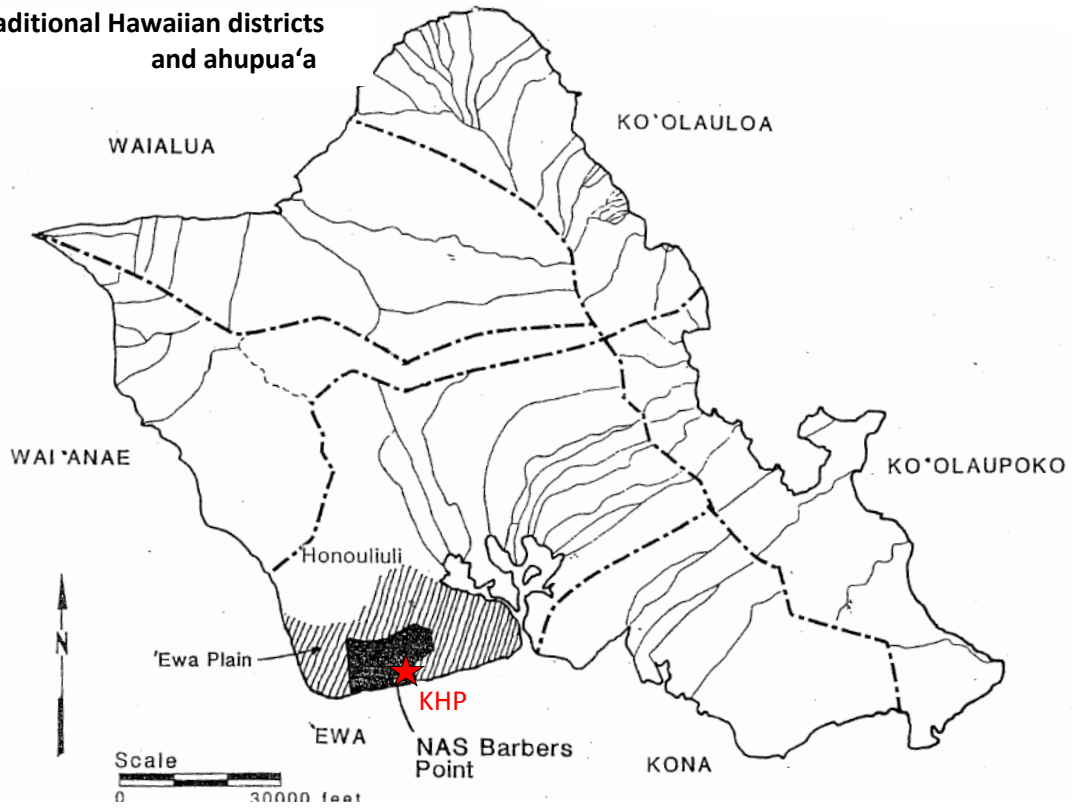
5.5 Current Land Use

When the Barbers Point Naval Air Station (BPNAS) closed in 1999, approximately 3,700 acres of land in Kalaeloa were allocated to various Federal, State, and City agencies. In 2009, federal legislation allowed the U.S. Secretary of the Navy to convey 77 acres of Kalaeloa land to HCDA. The HCDA is partnering with the KHLF and community stakeholders to implement the vision and direction set forth in the Kalaeloa Master Plan (2006) to establish an interpretive park. In 2011, the HCDA issued a right-of-entry permit to the KHLF with the intent to eventually establish a long term lease with the KHLF.

Of the 77 acres dedicated as the KHP, approximately three acres fronting the current park entrance on Long Island Street have been cleared of invasive vegetation. Visitors are guided through the interpretive area, which includes remnants of an ancient Hawaiian village. A section of the ancient Kualaka'i Trail has been uncovered and restored. Mature wiliwili trees are making a recovery on the site, and a variety of native plants are being planted. The cultural structures and biological resources are connected by an interpretive trail.

In the summer of 2012, volunteers helped build a traditional Native Hawaiian kauhale out of stone, wood, and grass. The KHLF currently offers cultural site tours and community workdays, mainly in the three-acre cleared interpretive site. In January 2014, volunteers cleared a trail from the baseyard through a forested area adjacent to the western fence line shared with Kalaeloa Airport. The trail passes by mature wiliwili trees and several cultural sites and military structures. It will need to be maintained, and long-term volunteers will help clear kiawe and brush from the cultural and historic sites.

Figure 1. Traditional Hawaiian districts and ahupua'a



Kalaeloa Heritage Park is located within the former Barbers Point Naval Air Station on the 'Ewa Plain. O'ahu is shown with traditional Hawaiian districts and ahupua'a (Tuggle 1997).

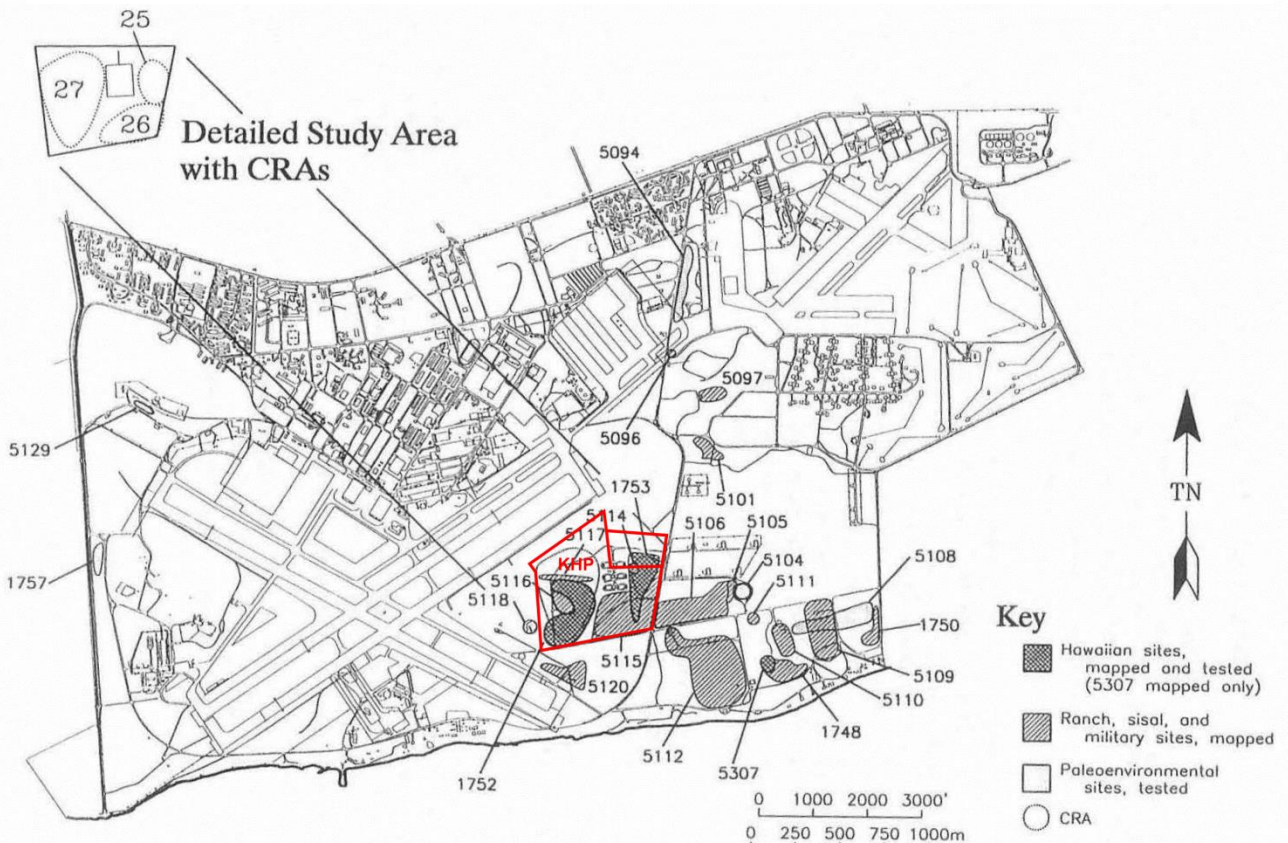


Figure 2. Sites of Phase II intensive archaeological inventory and paleontological study

6. ARCHAEOLOGICAL BACKGROUND

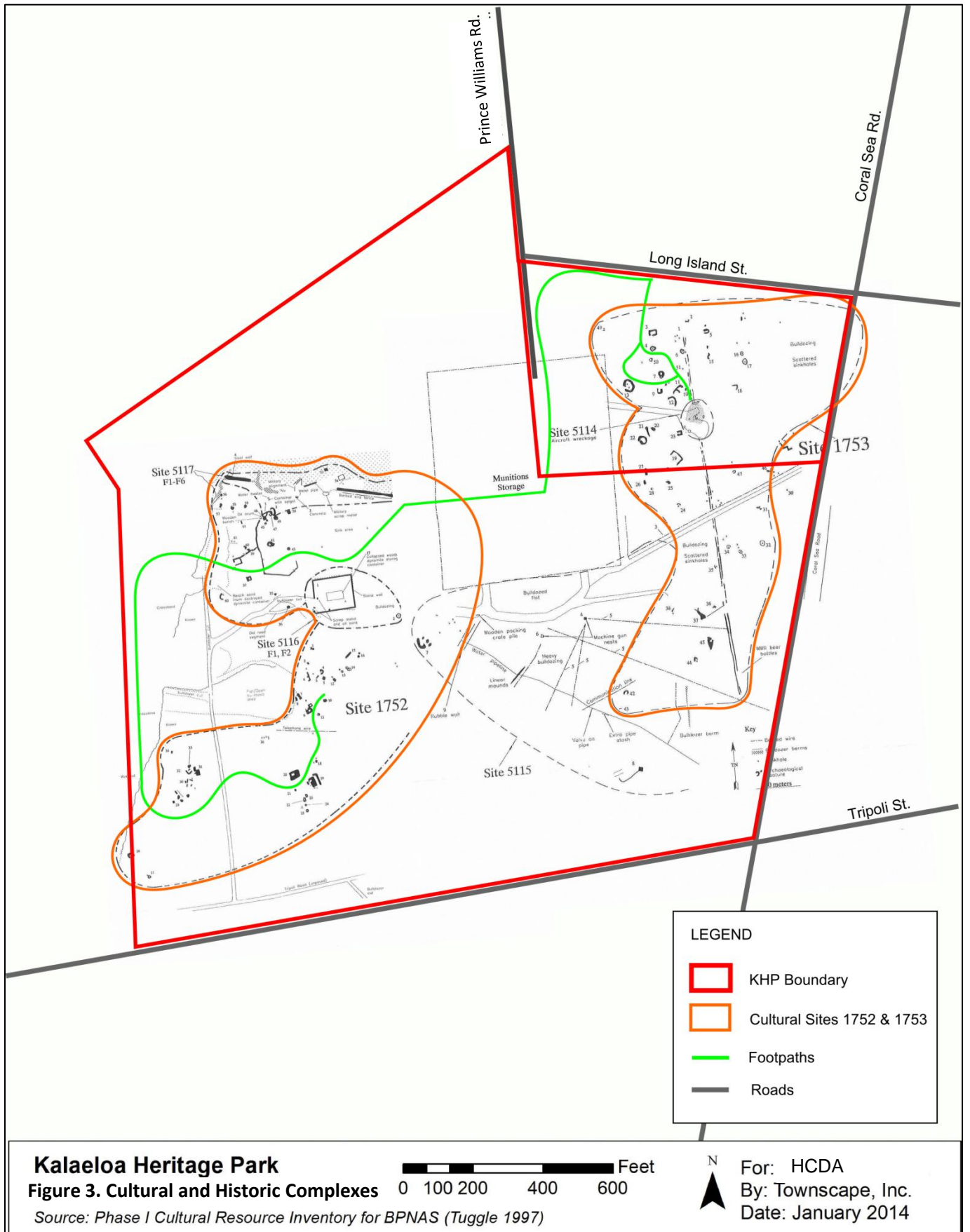
Most of the KHP is relatively undisturbed because the area was used as a military buffer zone within the former Naval Air Station (Kane 2011). Some of the most notable remaining cultural sites within the KHP include a rectangular permanent habitation structure, three L-shaped temporary enclosures, an ancient trail, sinkholes used for agriculture and water supply, sinkholes used for burials and heiau, and a burial ahu (KHLF 2012). Constructed primarily of coral, the cultural structures are unique to the 'Ewa Plain. The integration of many upright stones into their design suggests a Tahitian influence.

Historical structures from the WWII era within the KHP include a plane crash site; a sentry post and wall, defensive barbed wire, concrete pad and sinks, and machine gun nests; and a dynamite storage facility and sisal wall. Sisal is a fibrous plant in the agave family that was once cultivated on the 'Ewa Plain. Cattle ranching also left its mark on the landscape, with rock walls and enclosures that altered some of the Native Hawaiian structures.



Stone habitation enclosure in Site 1752

Photo credit: Jan Becket



6.1 Cultural Resource Inventory

In 1997, an inventory of all previous archaeological surveys was conducted as part of the Environmental Impact Statement (EIS) for the BPNAS Closure and Reuse. International Archaeological Research Institute, Inc. (IARII) provided a synthesis of the cultural resource studies of the 'Ewa Plain with assistance from a number of respected cultural experts. Following the Phase I survey, the survey data were reorganized into Cultural Resource Areas (CRAs) appropriate for Phase II survey actions and for cultural resource management planning. The cultural and historic sites identified in Cultural Resource Inventory within the boundaries of the KHP are shown in Figure 3 and described in the following sections.

The Phase II survey (Wickler and Tuggle 1997) involved the detailed recording of surface features from five previously recorded sites (Sites 1752-1756) within an area of ca. 59 acres. These sites have been re-organized into two site complexes, Sites 1752 and 1753. Radiocarbon dates indicate that the area was occupied sometime after A.D. 1400, but that intensive settlement did not take place until after about A.D. 1650. The settlements were probably abandoned during the late pre-contact to early post-contact period.

The dominance of fish and marine shell in the midden coupled with an emphasis on fishing gear and related manufacturing tools and waste material demonstrates that marine resources played an important role in the diet of residents. This importance is further emphasized by the presence of at least two fishing shrines and by the possible use of numerous fish drying platforms. Cultivation was also an important part of the economy, given the numerous agricultural features in the survey area. There are also two structures that may have been agricultural heiau. The identification of economically important Polynesian-introduced plant taxa such as ti, ipu (gourd), kukui (candlenut), 'ulu (breadfruit), and kou in the cultural deposits suggests that these species grew or were cultivated in the vicinity of the sites.

The scarcity of bird remains in Hawaiian sites from the 'Ewa Plain despite their natural abundance is also reflected in sites from the present study. In the single sinkhole with a cultural deposit and substantial amounts of bird bone there is no evidence for cultural use of the avian remains such as burning or distinctive breakage patterns.

6.2 Native Hawaiian sites within the KHP

Site 1752 Habitation and agricultural complex

Site 1752 consists of 66 individual features that make up four Hawaiian residential clusters with associated agricultural features. Each of the habitation complexes may have represented a family settlement in the larger community, with the possibility of a communal structure in at least three of the four. Three of the four complexes have one or more religious structures, and one of them may have had a temple that served for the local community or a larger social unit. The agricultural features are primarily mounds and modified sinkholes, as well as unmodified sinkholes that may have been used agriculturally. There are also several religious features in the site, and at least one human burial. Radiocarbon dating results indicate that the bulk of the occupation probably took place sometime after the mid-1600s. A variety of information indicates that the complex was abandoned in the early post-contact period.

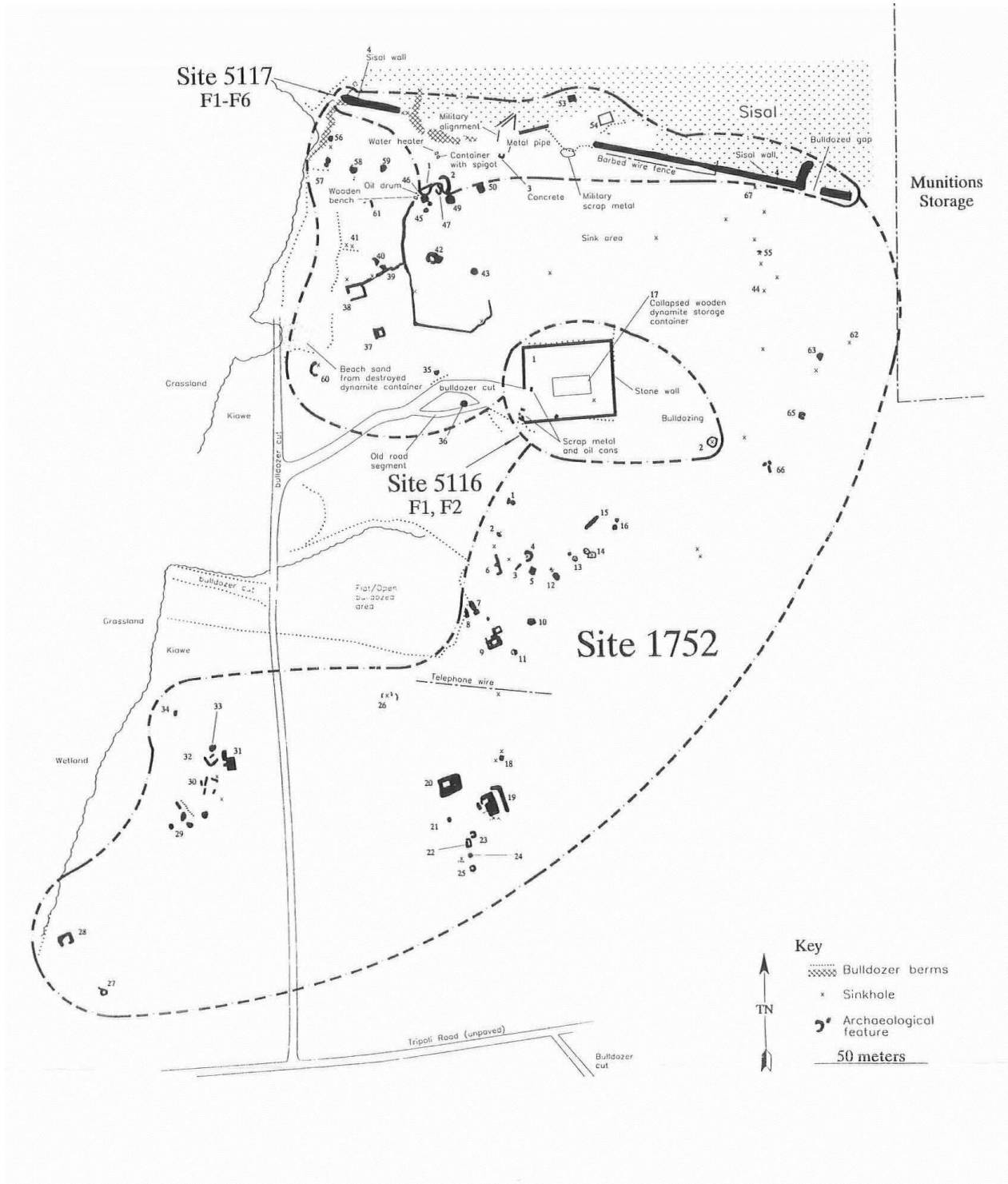


Figure 4. Map of Site 1752: Habitation and agricultural complex

Site 1752 is about 27 acres and is bounded by Tripoli Street on the south, the Salt Flat (Site 5118) on the west, the runway clearance zone and Site 5117 on the north, and an open munitions storage facility on the east. The terrain is limestone, cobble covered, and overgrown with kiawe. A WWII coral road extends into the area and there has been some disturbance of the Hawaiian features from military activity of that period.

Heading makai along the fence line of Kalaeloa Airport, the difference between bulldozed areas (flattened, with only smaller trees) vs. undisturbed areas (uneven surface and large kiawe trees) is very distinctive. The Kualaka'i salt flat is nearby to the west, and may have been the primary reason for the ancient trail that runs through the KHP (Site 1753). The U-shaped storage enclosures were used to store bird feathers and communal resources like dried fish. The *kia manu* who gathered the yellow bird feathers did not have to follow the *kapu* of prostrating before the chiefs who came to collect the feathers from him, marking a significant shift in relations between chiefs and commoners (Kane, Personal communication 2014).

Site 1752 is one of the largest complexes of Hawaiian features remaining at NAS Barbers Point. It contains substantial and well preserved habitation and religious structures, as well as burials, with numerous areas of habitation deposits. The site is recommended as eligible to the NRHP based on Criteria A, C, and D. The site is a locale of activities significant in the history of pre-contact Hawai'i (with associated substantial cultural value), has many structures of distinctive construction, and contains substantial information content relevant to Hawaiian history. In addition to significant cultural remains, important data relating to paleoenvironmental and paleontological change have been recovered from sinkhole excavations within the site area. Further, it is recommended that long-term preservation be considered for Site 1752 and 1753 (described below) as two associated complexes.



A large rectangular stone enclosure is believed to have been a communal structure in the habitation and agricultural complex of features in Site 1752. Upright posts would have come from the corners of the rock wall, supporting a thatch roof similar to the hale built in 2013.



A large sinkhole used for temporary habitation and shelter from the hot 'Ewa sun.



Many cultural sites are covered with invasive plant species like kiawe and koa haole.



Semi-enclosed structures may have been used for storing food and bird feathers.



Circular stone ahu were used for drying fish and making ceremonial offerings.

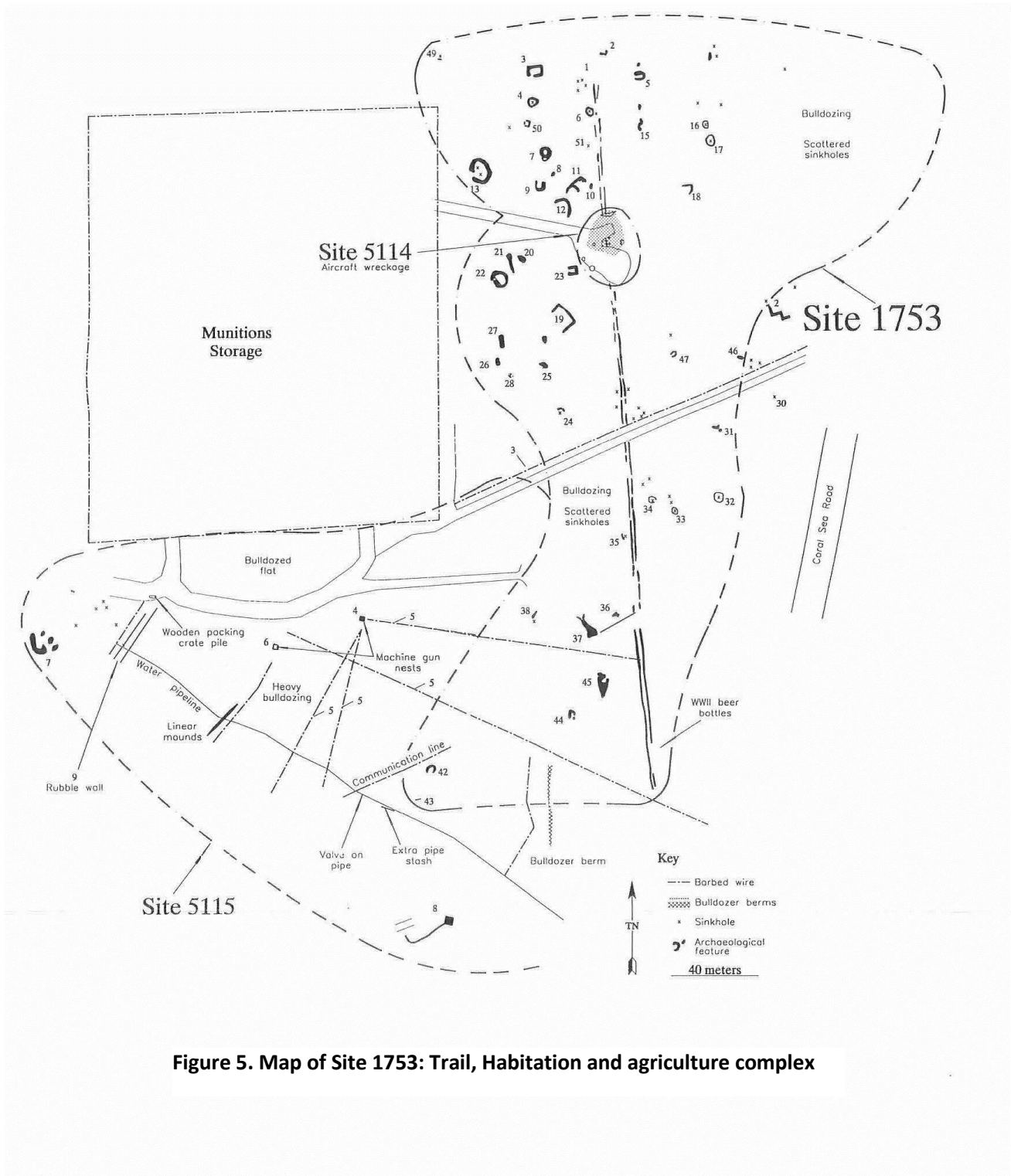


Figure 5. Map of Site 1753: Trail, Habitation and agriculture complex

Site 1753 Ancient trail, Habitation and agricultural complex

Site 1753 consists of 51 features that constitute a substantial Hawaiian settlement. The site, covering an area of about five acres, is located west of Coral Sea Road, just south of Long Island Street and north of Tripoli Street. It is bounded by an open munitions storage facility on the west, the road to the storage on the north, and Site 5115 (military features and sinkholes) on the east and south.

The site contains a variety of Hawaiian habitation structures, agricultural features (mounds and modified sinkholes), and human burials. Of particular note is the presence of a Hawaiian trail paved with limestone slabs and bordered by two parallel rock alignments with pairs of upright limestone slabs at regular intervals. The intact portion of the trail is over 300 meters in extent, with a seaward-inland bearing. It is probable that this is a portion of one of the major trails of the ‘Ewa Plain, as recorded in 1825. The ancient Hawaiian trail (mapped by Malden in 1825), is the earliest documented historical feature of this region of the ‘Ewa Plain.

A small community is identified within Site 1753, with one men’s house, and a scattering of residential structures that entail cooking, sleeping areas, and some tool production. The community’s local agricultural component is represented by the cultivation features that surround the residential cluster. It is possible that the religious structures at Site 1752 may have served the general area, including the community at Site 1753.

Site 1753 is one of the largest complexes of Hawaiian features remaining at NAS Barbers Point. It contains substantial and well preserved habitation and agricultural structures, as well as burials, with numerous areas of habitation deposits. It also contains one of the few trails recorded in all of the archaeological investigations of the region from Honouliuli to Ko’olina, a segment of what was probably the most important Hawaiian trail of the central ‘Ewa Plain (Wickler and Tuggle, 1997).

Site 1753 is recommended as eligible to the NRHP based on Criteria A, C, and D. The site is a locale of activities significant in the history of pre-contact Hawai’i (with associated substantial cultural value), has many structures of distinctive construction, and contains substantial information content relevant to Hawaiian history. In addition to significant cultural remains, important data relating to paleoenvironmental and paleontological change have been recovered from sinkhole excavations within the site area. The importance of this area is such that long-term preservation is recommended.



The ancient Hawaiian trail through ‘Ewa

Photo credit: Jan Becket



*Mature wiliwili (*Erythrina sandwichensis*) trees are making a comeback at Site 1753.*



*Ti (*cordyline fructiosa*) and other plants continue to grow in sinkholes.*



Human skeletal remains were discovered in this sinkhole near the ancient trail.



Large stone enclosure and vertical rock by a sinkhole suggests a ceremonial site.

6.3 Feature types in Sites 1752 and 1753

Enclosures are rectangular or square walled structures that surround an interior surface. Interior paving, a hearth, and possibly a storage pit are common in these structures, which are referred to as "rectangular houses". The few examples of small enclosures without entryways may be remodeled houses or religious structures. Large enclosures in the 'Ewa sample include habitation compounds that have the general appearance of kuleana house lots and possible agricultural areas with enclosure walls.

Structures are constructed of limestone cobbles and slabs by 1) stacking or 2) the placement of large upright limestone slabs in parallel rows, with the interior space filled by cobbles and smaller slabs. The slab and fill technique is much more common and was often done in individual sections. The use of "modular" construction suggests that structures may have been built in multiple phases rather than as a single event.

Semi-enclosures are walled structures that define, but do not completely enclose an interior floor area. They are usually small and poorly constructed. Five categories of semi-enclosures were identified, including C-shape, L-shape, and U-shape. Most Hawaiian archaeologists agree that semi-enclosures are residential structures, but there is considerable discussion as to the degree of permanence which their occupation represents. Common use of the term "field shelter" to describe these features implies that occupation was of a temporary nature and limited to specific subsistence tasks. Some structures may have been specialized storage features. Based on formal attributes, spatial distribution, and the results of subsurface testing, semi-enclosures within the present study area associated with Hawaiian settlement are interpreted as residential.

Platforms have prepared horizontal surfaces and all four sides elevated. Platforms are not common on the 'Ewa Plain and most are small, low, and poorly constructed. Some small, well-constructed platforms do occur which may be shrines or burials. The two platforms recorded are located in Complex 2 in Site 1752 (F19 and F20) and are free-standing rectangular structures. One is thought to be a residential foundation and a notched opening in one corner may have served as an entrance. F20 is twice as large as F 19, constructed using the slab and fill technique and faced by limestone slabs. The formal characteristics of F20 and presence of two possible shrines in the vicinity suggest that the platform had a religious function.

Platform mounds within the survey area are free standing, small, and rectangular or circular in plan. Construction is more formal than for other mounds, with stacked rock and/or upright slab facing and a prepared horizontal, rather than piled convex, upper surface. No evidence of burial chambers or crypts was found within any of the dismantled structures despite the presence of formal attributes commonly ascribed to burial structures. Alternative potential functions for platform mounds include markers (ahu), religious shrines, and fish drying.

Mounds are in two categories: formal faced mounds and informally constructed elongated or circular mounds. Faced mounds are generally larger than informal mounds and have at least three courses of vertical stacking on one or more faces. Informal clearing mounds and planting mounds are associated with the cultivation of sweet potato or other vine crops. Some may be the result of recent disturbance such as bulldozer activity by the military. Several of the faced mounds had artifacts and/or midden, suggesting that these features are non-agricultural and may be associated with residential activity. A large basalt flake and an octopus lure sinker and several pieces of shell (midden?) were found in the fill of F49 at Site 1752. Formal mounds with burials have been recorded elsewhere in Hawai'i but there is no evidence that the features within the project area were used for this purpose.

Heat-Altered Limestone Piles are common on the 'Ewa Plain but rare elsewhere in Hawai'i. Piles of burned, angular limestone fragments are actually deposits rather than structures and often contain midden. Based on the presence of heat-altered rock and association with residential structures, this feature type is interpreted as raked-out debris from hearths and earth ovens.

Upright Limestone Slabs consist of a single large elongated boulder placed in an upright position. Uprights are commonly classified as religious features and represent the simplest form of heiau, the pohaku a Kane (Kamakau 1964:32, Valeri 1985:174). Uprights can occur as isolated features or components of shrines and temples. The upright slab in Site 1752 is set into a crack in a bedrock outcrop with several supporting cobbles wedged against the base of the slab for support. The closest surface feature is the platform F20, a possible temple located 8 m to the north. These two features may be part of a cluster of religious structures which also includes a possible shrine with coral offerings. The only other upright slab is located next to a small cairn in Site 1752 in an area with modified agricultural sinkholes (F66). Given the context of this feature, it is interpreted as a possible marker or field shrine.

Modified sinkholes - Traditional Hawaiian utilization of limestone sinkholes is a hallmark of the 'Ewa Plain sites, where sinkholes are the most common natural feature in the karst landscape. Enclosed sinkholes are the most common form, with openings that are partially or fully enclosed by stone walls. Sink floors are sediment covered with a minimal amount of rubble fill in most cases. A majority of the sinks occur in clusters of two to four which are spatially discrete from residential structures. All of the sinks with formal enclosure walls are located in relatively close proximity to residential structures, unlike most sinks with informally constructed enclosures.

The majority of enclosed sinkholes are most likely agriculturally-related features in which cultigens such as ti, bananas, wauke, sugar cane, and possibly breadfruit could have been cultivated. Two sinkholes with internal structures were recorded, and based on the presence of a single human tooth in the mound fill, one structure is tentatively classified as a burial. Discovery of human remains suggests a possible cluster of burial features within the northern portion of Site 1753.

F60 is an unusual residential feature with multiple components including a large C-shaped semi-enclosure on the margin of a bedrock depression with two sinkholes, one of which has a structure built on the floor. The bedrock depression and one sinkhole have been filled with limestone rubble to create an artificial level surface within the area enclosed by the C-shape. The second sinkhole is adjacent to one end of the C-shape and has a two-tiered mound at near the entrance that apparently served as a 'ladder'. Excavations within the sinkhole revealed a substantial cultural deposit which suggests extended use of the feature.

Unmodified sinkholes - Cultural evidence from unmodified sinkholes falls into two categories: human skeletal remains and midden scatters. Skeletal remains representing Hawaiian burials were found on the floor of two sinkholes. The clustering of habitation features near sinkhole complexes is probably the strongest evidence that sinkholes were used for agriculture.

6.4 Historic sites from ranching and military

Site 5114 is a plane wreck from WWII. The engine remains, but most other parts have been removed. It is not recommended for preservation.

Site 5115 is a large complex of WWII military features, most associated with Station defense. These include two machine-gun positions, an extensive stretch of double-apron barbed wire and a sentry post.

Site 5116 is a WWII dynamite storage structure and associated roads and small features. The dynamite storage facility is a large wooden sand-filled structure that was identified by means of the 1945 Station map. The map shows four of these structures, but only one was located. The others have apparently been demolished, but their locations are identifiable by sand piles.



Site 5114, a plane wreck from World War II

Site 5117 is a portion of a historically documented sisal cultivation wall. Feral sisal was also located in the area.

Sites in the vicinity of the KHP

The areas to the south and east of the KHP contain a number of other cultural and historic sites. There are complexes of Hawaiian stone structures and sinkholes, primarily used for habitation and agriculture. Some contain large house enclosures that suggest 19th century occupation. Human skeletal remains are present in some, and there may also be a Hawaiian religious structure. WWII-era military features include a large earthen berm from a skeet shooting range, training complexes, bivouac areas, and several concrete defensive structures including anti-aircraft gun batteries, a sentry post, and a portable pillbox.

Sediment cores from Ordy Pond, to the east of the KHP, indicate the main reason for the decline of the 'Ewa native dryland forest was the Polynesian rat, brought here by early colonists (Altonn 2007). Analysis of pollen from sediment cores showed a very abrupt transition approximately 1,000 years ago, when the dryland forest rapidly disappeared and was replaced mostly by grass and weeds. Radiocarbon dating of rat bones found in Ordy Pond shows that rats were introduced in the early days of Polynesian settlement of O'ahu. Without predators or competition, the rat population exploded, radiated out across the island and destroyed native vegetation that many native bird species depended on. It was previously thought that early Polynesians were responsible for clearing the forest and hunting a number of native birds to extinction, but this sediment core data shows that the forest and birds declined before any evidence of humans on the 'Ewa plain around 1000 AD (Altonn 2007).

7. COMMUNITY CONSULTATION

The community consultation process was conducted by interviewing kama’āina and kūpuna connected to the area of the KHP. Through a series of in-person interviews, Townscape spoke with seven people.

Semiformal interviews were conducted and recorded on digital tape recorders. The audio recorded were not transcribed, but were used for reference on details noted during the interview. Interviewees each signed a consent form. The interview method followed a “talk-story” form of information sharing.

Interviewees were selected based on one or more of the following criteria: (1) had/has ties to the project area or vicinity; (2) is a known cultural practitioner; or (3) was referred by other cultural resource people.

Questions used for the interviews included:

- Ties/connections to the project area
- Knowledge of general history and present and past land use of the project area
- Knowledge of cultural sites that may be impacted by the project
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Recommendations for the project to address cultural concerns relating to the project area

Townscape contacted individuals via e-mail and/or telephone to schedule a talk-story session for this assessment. The e-mail consisted of information regarding the project area, proposed project and a map of the project area. Community members contacted are shown in Table 1.

Table 1. Community Contacts and Comments

NAME	AFFILIATION	COMMENTS
Apio, Sol	Cultural Practitioner (Mahiole Weaver)	Interviewed on April 22, 2014.
Becket, Jan	Kapolei Hawaiian Civic Club Member/Kamehameha School Teacher/Photographer	Interviewed on March 27, 2014. Shared photos taken of Kalaeloa Heritage Park.
Holder, Kala	Kapolei Hawaiian Civic Club/Kupuna	E-mail letter, no response.
Holden, Lance	Kalaeloa Heritage and Legacy Foundation Board Member	Interviewed on March 13, 2014.
Kane, Shad	Kalaeloa Heritage and Legacy Foundation Board Member	Interviewed on February 22, 2014. Also made referrals: Sol Apio, Jan Becket, Kala Holden, Rona Rodenhurst, and Henry Wo Chang.
Kane, Valerie	Kalaeloa Heritage and Legacy Foundation Board Member	Interviewed on March 13, 2014.
Lyman, Melissa	Kalaeloa Heritage and Legacy Foundation Board Member	Interviewed on March 13, 2014.
Rodenhurst, Rona	Former President of Kapolei Hawaiian Civic Club	Interviewed on March 14, 2014.
Wo Chang, Henry	Cultural Practitioner (Limu)	E-mail letter, no response.

7.1 Backgrounds of Interviewees

Kama'āina and kūpuna with knowledge of the Kalaeloa area were interviewed for this assessment. A total of seven people were interviewed.

A. Sol Apio

Sol Apio was raised in Waimanalo Homesteads, but later moved to 'Ewa with his wife. He is a retired naval shipyard mechanic. Mr. Apio weaves with native 'ie'ie roots to make traditional Hawaiian helmets, baskets and fish traps. He also makes Kou wood bowls, traditional Hawaiian war weapons (na mea kaua) and kapa. He values passing on his knowledge of the Hawaiian culture and art, and teaches through various programs and events.

B. Jan Becket

Jan Becket is a teacher at Kamehameha Schools and has been there for the past 26 years. Through his photography, he has documented parts of Kalaeloa, including areas of the proposed Kalaeloa Heritage Park.

C. Lance Holden

Lance Holden was born in 1970 and graduated from Campbell High School. His family moved to Makakilo in 1979 and he spent some time in the former Barbers Point area as a child since his father was a retired military member. Mr. Holden helped start the Kapolei Hawaiian Civic Club in 1993.

D. Shad Kane

Shad Kane was born in 1941. He spent most of his childhood years at Wahiawa Heights. He later moved to Kalihi to live with his grandfather and to attend Kamehameha Schools. Mr. Kane and his wife moved to Makakilo in 1973. He is a community leader and is involved with the Kapolei Hawaiian Civic Club, and is a Board member of the Kalaeloa Heritage and Legacy Foundation. He is currently the caretaker of Kalaeloa Heritage Park.

When Barbers Point closed, Mr. Kane represented the Civic Clubs on the Barbers Point Redevelopment Commission and was part of the Parks & Recreational Public Facilities Task Force. During that process, Mr. Kane was able to gain first-hand access to knowledge of the cultural landscape through working with archaeologists Dave Tuggle and Rubellite Johnson.

E. Valerie Kane

Valerie Kane was born in 1950 and raised in Pearl City. She and her husband moved to Makakilo in 1973. She is involved in many community activities, is a member of the Kapolei Hawaiian Civic Club, and a Board member of the Kalaeloa Heritage and Legacy Foundation.

F. Melissa Lyman

Melissa Lyman was born in 1964 and is the current president of the Kalaeloa Heritage and Legacy Foundation Board. She grew up in Mānoa and Kaka'ako and graduated from McKinley High School. She purchased a home in 'Ewa in 1992 and started the Kapolei Hawaiian Civic Club in 1993.

G. Rona Rodenhurst

Rona Rodenhurst was born and raised in 'Ewa Plantation and resides in 'Ewa Beach. She received her bachelor's degree in Hawaiian studies and her master's in Education, both from the University of Hawai'i at Mānoa. She has worked at the Office of Hawaiian Affairs as the Education and Culture officer, at Bishop Museum as the Culture Education Program Manager, and served as the Early Childhood Education Director at Keiki o ka 'Āina. She is a former president of the Kapolei Hawaiian Civic Club.

7.2 Traditional Cultural Practices

This section summarizes the different types of traditional practices, cultural resources, and mo'olelo associated with Kalaeloa. Excerpts from talk story sessions are incorporated throughout this section where applicable.

There is a high concentration of archaeological resources in the project area which has been identified as having the "most intact cultural resources." This is largely due to the fact that the project area was used as a buffer zone for the military. The maintenance yard, which is the area that has been bulldozed within the 77 acres and where the proposed multipurpose cultural center would be built, was used to attach fuses onto bombs. The property surrounding the maintenance yard served as a buffer to conceal and protect activity within the maintenance yard. Thus, most of the cultural structures still exist today within the 77 acres.

Mr. Kane shared that the resources at the KHP are an *"integration of many histories. Here in Hawaii, it's not one history...the reality of it is that it's not just Hawaiians. It's an ancient past of many different cultures of many different people, including the military. So the military history is part of it. So Kalaeloa, what's so interesting about this 77 acres, you've got components of every period—you've got ancient Hawaiian, subsequent is cattle. In addition to the military period (concrete bunkers and dynamite storage facility that has collapsed), there are also remnants of a sisal plantation on the back side of the KHP."*

The project area is located within the District of 'Ewa, ahupua'a of Honouliuli, 'ili of Kanehili, and the community of Kualaka'i.

Limestone Sink Features

Limestone sink features are important because they show how water flows underground and may provide information on past environmental conditions. These limestone sink features were used for several purposes including for agriculture, as a drinking water source, and for burials.

Similar to a river traveling above ground, the cleanest water is the fastest moving water which is in the middle of the stream. The water traveling along the banks contains the most nutrients since it is brushing up against the banks. Sinkholes used as a drinking water source are located in the middle of the river, while the agricultural sinkholes are along the banks of the river.

Site 1753 probably supported one family since it includes one sinkhole that serves as a water source and clusters of agricultural sinkholes surrounding the water source sinkhole. Although the water does not flow through the sinkholes like it once did and it is no longer used as a drinking water source or for burials, there are currently a number of sinkholes with ti leaves growing in them.

Several sinkholes have been identified as a burial sinkhole including three additional burial sinkholes that have been found at the project area. When cleaning up the site area and removing kiawe trees that have been covering some of the sinkholes, 'iwi have been seen in some of the holes. Mr. Kane comments that the 'iwi should be left in place and covered with sand gathered from the beach. Proposed project development is planned for the previously bulldozed maintenance yard area and should not negatively impact the existing limestone sink features.

Gathering for Plant Resources

Archaeological surveys have identified sweet potato mounds in this area. Mr. Kane shared that *“sweet potato is important to this geographic region.”* In the mo'olelo, the chief Maweki who is referred to as Tahitian is responsible for bringing 'uala (making reference to blue poi) from South America to Honouliuli. Sweet potato came from South America and is not Polynesian. Sweet potato was first brought to 'Ewa and then introduced to the other islands. Since this area was so arid, Hawaiians were not able to grow kalo, but instead used sweet potato as their staple food.

Within the project area, a number of wiliwili trees are found. The wiliwili wood was used anciently for flotation—to create fishing nets (and also for surfboards). However, no ongoing practices related to traditional gathering of plant resources have been identified.

Trails

In Malden's Map of 1825, a trail is identified that is about five miles long that runs through the project area. About 300 yards of the trail exists today. The trail goes all the way to H-1 Freeway, runs parallel to Kalo'i Gulch, and goes into Honouliuli Gulch.

Mr. Kane shared:

“Our mana'o is that people lived a subsistence lifestyle based on ocean resources, but instead of eating sweet potato as their staple food, the community most likely used the trail to obtain kalo. The only area where kalo would have been grown is behind Makakilo where lo'i and 'auwai exists. This trail was connected to another ancient trail where Farrington Highway is now located.”

Marine Resources

Malden's Map of 1825 identifies Kualaka'i salt pond which is located inland and is now part of the DOT Airports parcel, located east of the project area. Due to the project site's close proximity to the ocean, ocean resources made up a large part of the community's diet. The people living there at the time relied heavily on the salt from Kualaka'i salt pond to preserve their food. Mr. Aipo described going to that area in the past to go fishing.

The 'Ewa coastline has been known for its limu that grows best from the brackish water in the area where the fresh water flows into the ocean water. Ms. Lyman shared that *"the whole coast line was known for its limu and you could even find the really good one—wawae'iole. You could just pick it and eat it."* But, since the development of 'Ewa and the lack of fresh water flowing through the sinkholes, limu is not as abundant as it once was.

Ms. Val Kane described how as a child she would go with her neighbors to go fishing at 'Ewa Beach Park and *"the limu that was just all over the place that you almost could not fish since it would get caught in the fishing lines."* Mr. Aipo also mentioned that abundance of limu, particularly finding 'ele'ele that used to be along the coast.

The ocean still remains a way of life for some people in the community, but it is not as heavily used as in the past, particularly with the decline in limu in the area.

Wahi Pana

Kalaeloa is a point of land on the coast.

The story associated with Kualaka'i is about a Tahitian chief named Kaha'i who appears in genealogy as the son of Ho'okamali'i and grandson of Mo'ikeha. Mo'ikeha is the grandson of Maweke. Kaha'i is commissioned to go to Tahiti to retrieve the 'ulu tree, but he travels beyond Tahiti to Samoa to get the 'ulu tree and brings it back to Hawai'i. He then plants it somewhere in Pu'uloa.

Before Kaha'i leaves for Tahiti on another trip, he instructs his wife to tell his son that if he wants to find his father that he needs to seek the breadfruit tree of Kaha'i—ka 'ulu o kaha'i. The 'ulu tree in Polynesian culture also represents rebirth or new life. Breadfruit ('ulu) is associated with the place Kualaka'i.

Ms. Lyman shared her experience of dancing hula as a child and particularly a song that talks about picking up 'ulu from the ground. After walking through the KHP and seeing ti leaf grow from the sinkholes, she realized that the reference of picking 'ulu from the ground is probably from an 'ulu tree that grows from the sinkhole whose fruit hangs down to the ground. The mo'olelo she learned from hula are no longer myths, but stories supported by evidence she has seen at the KHP. She also shared her strong sense of connection to the place—that when she walks through the KHP, she feels that her kūpuna are watching over her, and in return she needs to watch over them as well.

8. CULTURAL LANDSCAPE

The KHP is located within a significant and unique cultural landscape that tells of Native Hawaiian settlement and historic land uses including several WWII military sites. Native Hawaiian settlement of the area was estimated to have occurred around 1400 AD (+/- 150 years) by radiocarbon dating of midden found in sinkholes. The Native Hawaiian sites constitute some of the most complex structures and most extensive settlements recorded for the 'Ewa Plain. Additionally, the area of the 'Ewa Plain around the KHP played a significant role in several oral histories and written historic accounts of old Hawaii.

Site 1753 and Site 1752 are two of the largest complexes of Hawaiian features remaining at BPNAS. They contain substantial and well preserved habitation and agricultural structures, as well as burials, with numerous areas of habitation deposits. Site 1753 also contains one of the few trails recorded in all of the archaeological investigations of the region from Honouliuli to Ko'olina, a segment of what was probably the most important Hawaiian trail of the central 'Ewa Plain.

The post-contact introduction of invasive plants, ranching, sugarcane, and sisal cultivation created many changes in the landscape. The World War II construction of BPNAS produced numerous military features that have become important historical elements of the cultural landscape. At the same time, Station construction resulted in the destruction of many earlier cultural sites (Tuggle 1997).

In every area of the former base that was left undisturbed by construction and development, remnants of the ancient past can be found. The vastness of the cultural landscape with its many archaeological features paints a picture of an ancient community that once lived at Kānehili (KHLF 2009). The proposed Interpretive Park and Multipurpose Cultural Center will allow visitors to learn about the cultural landscape of Kalaeloa by observing the ancient sites and historic artifacts, and by listening to information and stories about the past.

9. SUMMARY AND RECOMMENDATIONS

Sites 1752 and 1753 are recommended for preservation, and are considered eligible for the National Register of Historic Places (NHRP) based on the following criteria: 1) Associated with events that have made a significant contribution to the broad patterns of our history; 2) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; 3) Have yielded, or may be likely to yield, information important in prehistory or history. Preservation of historic military sites 5115, 5116 and 5117 is recommended as part of the site 1753 and 1752 Native Hawaiian complexes.

The Kalaeloa Community Development District Rules identify the KHP parcels as historically and culturally significant, whose features are to “be preserved, protected, reconstructed, rehabilitated and restored by the landowners consistent with the implementing regulations of section 106 of the National Historic Preservation Act, as amended, and chapter 6E, HRS” (HCDA 2012, p. 215-46). Continued protection of the cultural sites through the establishment of the KHP is consistent with the recommendations of previous archaeological surveys of the area.

The mission of the KHP is to promote the stewardship and preservation of Native Hawaiian cultural sites and the cultural landscape of Kalaeloa, and to educate the community about cultural traditions and practices. This will be accomplished by guiding visitors on interpretive tours of the cultural and historic sites within the KHP, and

hosting volunteer events for invasive species removal and preservation of cultural sites. In order to maintain the security and integrity of the archaeological features within the KHP, visitors to the KHP will be accompanied by a formally-trained docent or staff member.

Three acres of the park around Site 1753, just south of Long Island Street, have already been cleared and serve as the primary interpretive area. An interpretive trail clearly identifies the location of sites in this area. In 2013, community members built a Native Hawaiian hale near the current entrance to Site 1753. To the southwest, an interpretive trail through Site 1752 will remain under tree canopy with only targeted clearing of invasive plants from the immediate vicinity of the cultural sites. The trail will extend through approximately seven acres of Site 1752.

The archaeological resources described above will be preserved in place, with continued removal of invasive vegetation. Large kiawe trees growing over some of the sites require large amounts of labor to remove, and great care is taken not to move any of the stones that make up the cultural sites. Careful management of volunteer groups, with only long-time trusted volunteers allowed to access the portions of the KHP beyond the three-acre cleared site will help to minimize damage to the sites.

In order to maintain the security and integrity of the archaeological features within the KHP, visitors to the KHP will be accompanied by a formally-trained docent. The docent will provide an explanation of the site and rules of conduct before leading the group along the interpretive trail. All visitors to the KHP will be required to observe rules to protect the sites

The long range vision for the KHP includes construction of a multi-purpose cultural center where visitors will enter before going to the interpretive trail area. The site of the proposed cultural center and parking area was previously disturbed by bulldozing and military uses. Therefore, the proposed development is not expected to impact cultural or historic sites. If additional historic and cultural sites, including human burials, are uncovered during construction activities, all work in the vicinity will stop and the State Historic Preservation Division will be contacted.

People interviewed for this assessment were not aware of any ongoing cultural practices within the project area. Resources such as limu and fish gathering were on the coastal area outside of the project area. Access to these areas would not be impacted by the proposed project. The salt pond is located outside of the project area and interviewees do not believe that it is currently used for cultural practices since it is fenced off by the DOT Airports.

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