

# HO'OULU 'ĀINA NATURE PRESERVE

## FINAL ENVIRONMENTAL ASSESSMENT

'OUAUA, KALIHI, ISLAND OF O'AHU, HAWAII'



## HO'OULU 'ĀINA

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KOKUA KALIHI VALLEY COMPREHENSIVE FAMILY SERVICES  
3659 KALIHI ST., HONOLULU, HI 96819

JULY 2022



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'OUAUA, KALIHI, ISLAND OF O'AHU, HAWAI'I

TMK: (1) 1-4-014:001, 026 AND (1) 1-4-016:003

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### APPLICANT:

## HO'OULU 'ĀINA

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KOKUA KALIHI VALLEY COMPREHENSIVE FAMILY SERVICES  
3659 KALIHI ST., HONOLULU, HI 96819

### ACCEPTING AUTHORITY:

STATE OF HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE PARKS DIVISION

The document and all ancillary documents were prepared under my direction and in accordance with the content requirements of Chapter 343, Hawai'i Revised Statutes, and Title 11, Chapter 200.1, Hawai'i Administrative Rules.

### PREPARED BY:



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JULY 2022



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## Appendices

- A. Preliminary Infrastructure Assessment for Ho'oulu 'Āina. G70, December 2021.
- B. Botanical Reconnaissance Survey of Kalihi Valley Nature Park. Hawai'i Natural Heritage Program, June 2005.
- C. Native Hawaiian Cultural Impact Assessment Kalihi Valley Nature Park Project Kalihi Ahupua'a, Kona District, Island of O'ahu TMK's: 1-4-14-01 & -26, 1-4-16-03. Francine Palama, AS, ASDE, BS, July 2005.
- D. An Archaeological Assessment Report for a Property Located at TMK: 1-4-14: 01 & 26 and 1-4-14: 03 in Kalihi Ahupua'a, Kona District, Island of O'ahu. Archaeological Consultants of the Pacific, Inc., July 2005.



- E. Addendum to the 2005 Archaeological Assessment (Kouneski et al.) Kalihi Ahupua'a, Kona Moku, O'ahu Mokupuni, TMK: 1-4-14:001, 1-4-14:026, and 1-4-16:003. Nohopapa Hawai'i, August 2020.
- F. Revised and Updated Addendum to the 2005 Archaeological Assessment (Kouneski et al. 2005) for Ho'oulu 'Āina and Kōkua Kalihi Valley Comprehensive Family Services 2022 Master Plan Kalihi Ahupua'a, Kona Moku, O'ahu Mokupuni, TMK 1-4-14:001, 1-4-14:026, and 1-4-16:003. Nohopapa Hawai'i, July 2022.



Section 1

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# Introduction



## Chapter 1

# Introduction

This Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR), Title 11, Chapter 200.1, Department of Health, which set requirements for the preparation of environmental assessments. This EA is also prepared to support growth at Ho'oulu 'Āina as the Board of Land and Natural Resources (BLNR) recently renewed the lease for the site extending 30-years.

### 1.1 Project Information Summary

<b>Type of Document:</b>	Environmental Assessment (EA)
<b>Project Name:</b>	Ho'oulu 'Āina Nature Preserve
<b>Recorded Fee Owner:</b>	State of Hawai'i, DLNR, State Parks Division 1151 Punchbowl St., Room 310, Honolulu, HI 96813 Contact: Curt Cottrell, Administrator Telephone: (808) 587-0300
<b>Applicant:</b>	Ho'oulu 'Āina 3659 Kalihi St., Honolulu, HI 96819 Contact: Puni Jackson, Program Director Telephone: (808) 841-7504
<b>Agent:</b>	G70 111 S. King Street, Suite 170, Honolulu, HI 96813 Contact: Mark Kawika McKeague, AICP, Principal Telephone: (808) 523-5866
<b>Approving Agency:</b>	State of Hawai'i, DLNR, State Parks Division 1151 Punchbowl St., Room 310, Honolulu, HI 96813 Contact: Curt Cottrell, Administrator Telephone: (808) 587-0300
<b>Ch. 343, HRS Triggers:</b>	Use of State Lands, Use Within a Conservation District
<b>Project Location:</b>	Kalihi Valley State Park Reserve 3635 & 3659 Kalihi Street Honolulu, HI 96819 ( <i>Figure 1.1</i> )
<b>Tax Map Keys (TMK):</b>	TMK: (1) 1-4-014:001, 026 and (1) 1-4-016:003 ( <i>Figure 1.2</i> )
<b>Project Area:</b>	Total Property Area: Approx. 99 acres; Project Area: Approx. 50 acres
<b>State Land Use District:</b>	Conservation and Urban ( <i>Figure 1.3</i> )

<b>State Conservation District</b>	Resource Subzone ( <i>Figure 1.4</i> )
<b>Special Subzone:</b>	
<b>Special Management Area:</b>	Not Within SMA
<b>City &amp; County of Honolulu Zoning:</b>	P-1 Restricted Preservation District, P-2 General Preservation District ( <i>Figure 1.5</i> )
<b>City Development Plan:</b>	Primary Urban Center Development Plan
<b>Flood Zone:</b>	Zone D (Possible but Undetermined Hazard) and Zone X (Moderate to Low Risk Flood Zone) ( <i>Figure 1.6</i> )
<b>Anticipated Determination:</b>	Finding of No Significant Impact (FONSI)

## 1.2 Overview and Background

Ho'oulu 'Āina is situated on approximately 99 acres near the mauka end of Kalihi Street identified by Tax Map Key (TMK) Parcels (1) 1-4-015:026, (1) 1-4-016:003, and (1) 1-4-014:001 (*Figure 1.2*). Since 2005, Kōkua Kalihi Valley (KKV) has leased this property from State Department of Land and Natural Resources (DLNR) Parks Division.

Decades prior, a wealthy developer owned the Kalihi property and began to execute plans to build 120 high-end house lots. Concerned about anticipated environmental degradation, loss of access by residents to the forest and upland portions of Kalihi Valley, loss of the natural environment, as well as the need for protection of ancient cultural sites, community members and other stakeholders – led by pig hunters and a postal worker familiar with the area – pursued protection of the property and advocated for community access.

After years of advocacy and lobbying by these dedicated residents, in 1980, the City and County of Honolulu acquired the property with the intention to preserve the land, protect cultural and environmental resources, and ensure public access. At that time, the City and County designated the property as “park” land, in an effort to bureaucratically assign responsibility. In 1990, after years of inaction due to lack of funding for proper management, the Kalihi Valley Neighborhood Board No. 16 performed a public survey to remind residents of the 99 acres, and to illicit community input. It was found that the community preferred the site to be a “preserve,” not a “park,” for cultural sites to be preserved, and for no development to occur on the property.

In 1991, during the legislative session, an agreement was reached to transfer the property from the City and County of Honolulu to the State DLNR for the purpose of initiating a community space with indigenous flora and fauna preserve, as well as rehabilitation of the significant archaeological sites on property, and protection of a vital Honolulu watershed. Six years later, in 1997, conveyance of the property from the City and County to State DLNR was concluded. At that time, State Parks was given jurisdiction of the property. From 1997 to 2005, DLNR was unable to secure adequate funding to develop or maintain the site, and it fell into disrepair, with dangerously dilapidated structures and surrounding areas used as an illegal garbage dump. Large machinery, roofing, plastic piping, storage containers and several mountains of detritus were abandoned on the property.

In the early 2000's, DLNR recognized the need for support to properly care for this space, and sought involvement of private organizations to stop the abuse of the land and make the community space a reality.

While KKV had limited experience with large land management at the time the lease was executed, the nonprofit held over 33 years of experience serving the Kalihi community including a multi-site, ahupua'a approach to community health. Started in 1972 when four KKV community health workers walked door to door asking what was needed, KKV was founded in the spirit of “Neighbors being neighborly to neighbors” – a motto enduring to this day. Connecting and learning from the Kalihi community, residents identified affordable medical and dental services as their singular biggest need. Out of these conversations, KKV initiated volunteer medical and dental services, converting a site that was formerly a church into makeshift offices. The community response was overwhelmingly positive, so much so, that in 1973, KKV moved into two renovated surplus trailers to accommodate the growing number of patients. Throughout the years, KKV has taken a similar approach to its growing umbrella of services: to truly listen to the community, and respond to their greatest needs with world-class services. In 1975, KKV opened O'ahu's first shelter for abused spouses and children. In the 1980's and 1990's, KKV gradually moved from the surplus trailers into a new clinical site, and in 1986, the U.S. Public Health Service awarded KKV with its first Community Health Center grant. KKV was designated a Federally Qualified Health Center (FQHC) in 1989. KKV established a Youth Gang Prevention task force in 1991, and in 1994 KKV began providing Mental Health Services. From 2001 to 2009, KKV opened a larger medical clinic and began its Elder Care programs. By 2003, KKV created the Kalihi Valley Instructional Bike Exchange (KVIBE) for youth.

It was around this time that DLNR aimed to lease the 99 acre site in the back of Kalihi Valley and, learning of that, leadership at KKV saw the potential of this site as a space for community healing. While national conversations around the social determinants of health were still in their infancy, it was clear to KKV that land and the environment played an extremely important role in community and individual health. In addition to the Native Hawaiian residents who struggled with social, mental and physical wellness due to poverty, cultural oppression and land displacement, Kalihi saw waves of diaspora from the Pacific leaving rural homelands and agrarian lifestyles with hopes of better opportunities, only to find urban Honolulu was disconnected from the activities that keep island people healthy – farming, fishing, eating what you grow, connecting to land and to family.

Since that time, evidence shows that the feeling of “home”, a sense of belonging and connection, is an essential part of physical, mental, and community health. Kalihi community had a vision of creating a space that Hawai'i residents could connect to these essential elements of health, returning to health in a restoring and healing environment. KKV welcomed the opportunity to realize the community's vision for this property – a vision residents had been fighting for since the 1970's – creating a space that protected community access, preserved the land and its resources, and restored ancient Hawaiian pā pōhaku. The land would be a component of a healthier community, and the community could be a component in the restoration and creation of that community space. What manifested was a community-based effort that included forestry management, farming, and Native Hawaiian healing practices.

In 2004, KKV was identified as a potential partner to create the community space at the 99-acre site and began to engage in discussion with the State DLNR. On October 31<sup>st</sup>, 2005, the BLNR approved a 20-year lease (General Lease No. SP-0042) to KKV for the 99-acre site.

The approval of the lease triggered Hawai'i's Environmental Review Process under HRS §343-5(a), with the use of state or county lands which includes any use (title, lease, permit, easement, license, etc.) or an entitlement to those lands. Furthermore, TMK (1) 1-4-014:001 is located within the State Conservation District (*Figure 1.3*) within the Resource Subzone (*Figure 1.4*), and zoned P-1 Restricted Preservation and P-2 General Preservation District by the City and County of Honolulu (*Figure 1.5*). The City and County of Honolulu identifies lands within the State Conservation District as P-1 Restricted Preservation, and its usages and development standards are governed by the appropriate state agencies. Lands within the State Conservation District jurisdiction are governed by the requirements and procedures of HRS §205-5, Department of Land and Natural Resources (HRS §183C-3). According to HAR §13-5-24, KKV's intended use of the land was considered permissible within the Conservation District, Resource Subzone upon approval of a Conservation District Use Permit (CDUP). In 2006, an EA was prepared to support both the lease and the CDUP application process.

In preparation for the EA, KKV conducted community-based planning efforts with guidance from a community planning committee and members of the public to gather input on the design and vision of the property. Recognizing that the State DLNR Parks Division is the bureaucratic authority of the land, and also while honoring the history of Kalihi Valley and the community that fought to preserve the land, KKV proposed to develop the site as a "Nature Park and Active Living Center." The Nature Park and Active Living Center was designed to promote active living, cultural learning, and watershed-based environmental stewardship, and called for:

- Retention and restoration of the home located on the property
- Nature camp with overnight accommodations in the bunkhouse
- Removal of exotic plant species and reforestation of native plant species
- Energy self-sufficient and sustainable design
- Restoration of Hawaiian agricultural terraces
- Sheltered picnic areas
- Garden dedicated to native Hawaiian crops
- Wheelchair-accessible paved walkways and parking
- Access to the back of Kalihi Valley for hiking
- Tent camp sites
- Rainwater catchment system
- Community gardening

The EA received a Finding of No Significant Impact (FONSI) in May 2006. Furthermore, the BLNR found the proposed usages in the Conservation District to fulfill the objective of the State Parks Division and the Resource Subzone, and approved the CDUP for the Nature Park and Active Living Center in October 2006 under CDUP: OA-3351. Since becoming a lessee of the site, KKV has executed and continues to oversee these initial objectives. Successes include:

- Restoration of the home located on property
- Rainwater catchment systems have been developed in ma uka areas
- Removal of exotic plant species and reforestation of native plant species has happened on approximately 20 acres, and is ongoing
- A thriving community garden has been established on approximately 5 acres, with plans to expand into invasive bamboo
- All restorations of structures have included energy self-sufficient and sustainable design, where applicable. Future restoration and construction is planned to continue to implement these design criteria
- Wheelchair-accessible paved walkways and a paved parking area
- Restoration of Hawaiian agricultural terrace system is ongoing
- A garden dedicated to native Hawaiian and Pacific-island crops has been created, and is planned for expansion
- The bunkhouse was restored and refurbished with the help of University of Hawai'i at Mānoa Architecture students in 2008



As with any long-term planning endeavor, as this strategy has unfolded, and our world has changed, a few of the initial objectives have been identified as unuseful or counterproductive to the overall mission. Parts of the first EA that encouraged passive recreation have been found to undermine the intention of protecting the land and resources on property. Specifically, in the original master plan, encouraging unfettered access by hikers and campers to trails, cultural areas, and camping sites endangers native fauna and flora, as well as the pā pōhaku on property. Instead, guided accesses by trained docents is considered to be a much safer alternative (Palama, 2005), which is what has been implemented thus far. Furthermore, it should be noted that the site is still “under development,” with more need of volunteers that will help with trash removal, gardening and reforestation work, rather than “visitors” to the “park.”

The original plan also encourages Ho'oulu 'Āina to be a site for more direct access to the back of Kalihi Valley for hiking. With the rise of social media and the explosion of illegal hiking and access by social media followers, the owner of the mauka lands, the Board of Water Supply (BWS), has specifically requested that DLNR and KKV not allow trespassing onto their lands (an exemption being access and gathering-rights for Native Hawaiians). These social-media followers have constantly bombarded the trails and property at Ho'oulu 'Āina since about 2011. Many of them are not approaching with any sense of respect for the land or resources found on property. Some individuals bring bottles, trash, and food waste that they intend to leave behind; most play loud music; and many will defiantly reproach anyone who tries to interfere with their pursuit of a social media photo, even if they are illegally hiking.

Another changed aspect of the original plan is the construction of a “hula mound,” which was envisioned as a measure to include Native Hawaiian involvement in this culturally-sensitive project. Since the original plan, Hawaiian community members have clearly expressed their displeasure with such a gesture, as a “hula mound” has been more synonymous with a “stage” than an actual traditional space for hula performance. In general, the term “hula mound” has been determined to be an oppressive cultural trope rather than a true invitation to cultural inclusion. In actuality, a traditional “pā hula” can only be constructed and maintained by expert practitioners under strict cultural protocol. At this time, there are no plans for construction of this type of rigorous cultural structure, although performances of hula, oli, and mele are encouraged. These performances usually occur on the grassy area (pā) in front of the ahu.

The changes to Ho'oulu 'Āina's long-term plan have all been intentional, and solely in response to the needs of the land and the community. Ho'oulu 'Āina has annually engaged in planning efforts in order to keep up-to-date with the community. In 2012, in response to an increasing demand from the community to provide access to an environment cultivating an indigenous lifestyle, Ho'oulu 'Āina engaged in a comprehensive planning process to guide program development over the next 20 years. With input from staff, board members, and community members, a programmatic plan identifying current and future programs was created to guide future growth at Ho'oulu 'Āina. The programmatic plan provides opportunities for community volunteer members to engage in 'āina based practices to deepen indigenous knowledge of Native Hawaiian farming practices, cultural and historic resources identified within Kalihi Valley, and the health benefits of indigenous plant species.

## 1.3 Purpose of the Environmental Assessment

This EA will comply with Hawai'i's Environmental Review process, HRS Chapter 343. HRS Chapter 343 was triggered as the site is leased from the State, which constitutes the use of state or county lands which includes any use (title, lease, permit, easement, license, etc.) or an entitlement to those lands. The purpose of this EA is to provide an analysis of the updated master plan to support future growth at Ho'oulu 'Āina. Additionally, TMK parcel (1) 1-4-014:001 is located within the State Conservation District, prompting the preparation of this document. Further discussion regarding compliance with uses in the Conservation District is located in *Chapter 5*.

The State DLNR, Parks Division is the approving agency. The EA examines the potential environmental impacts of the updated master plan for Ho'oulu 'Āina and seeks agency and public comment on subject areas that should be addressed.

## 1.4 Agencies, Organizations and Individuals Contacted

Agencies, legislators and members of the community were consulted in the preparation of this EA. As the recorded fee owner, the DLNR Parks Division was consulted with. Parties contacted during the early consultation period and Draft EA comment period are listed below. Further information is detailed in *Chapter 7*.

### State

- DLNR
  - Aquatic Resources (DAR)
  - Boating and Ocean Recreation (DOBOR)
  - Conservation and Coastal Lands (OCCL)
  - Conservation and Resource Enforcement (DOCARE)
  - Engineering Division (ENG)
  - Forestry and Wildlife (DOFAW)
  - Historic Preservation District (SHPD)
  - Land Division (LAND)
  - State Parks (SP)
  - Land Division
- Senator Donna Mercado Kim, District 14 – Kapalama, 'Ālewa, Kalihi Valley, Ft. Shafter, Moanalua Gardens & Valley, Portions of Halawa and 'Āiea
- Representative John M. Mizuno, District 28 – Kalihi Valley, Kamehameha Heights, Portion of Lower Kalihi

### Organizations and Individuals

- Chair May Mizuno, Kalihi Valley NB No. 16
- Chozen-Ji Buddhist Temple
- Sisters of Sacred Hearts
- Roman Catholic Church
- Lunalilo Holdings LLC
- Neighbors within approximately 1,000 ft.

### City and County

- Councilmember Carol Fukunaga, District 6 – Makiki, Downtown Honolulu, Punchbowl, Pauoa Valley, Nu'uuanu, 'Ālewa Heights, Papakōlea, Fort Shafter, Moanalua, Hālawa, 'Āiea, Kalihi Valley, and Portions of Liliha and Kalihi
- Honolulu Board of Water Supply
- City and County of Honolulu Fire Department
- City and County of Honolulu Police Department
- Department of Transportation Services

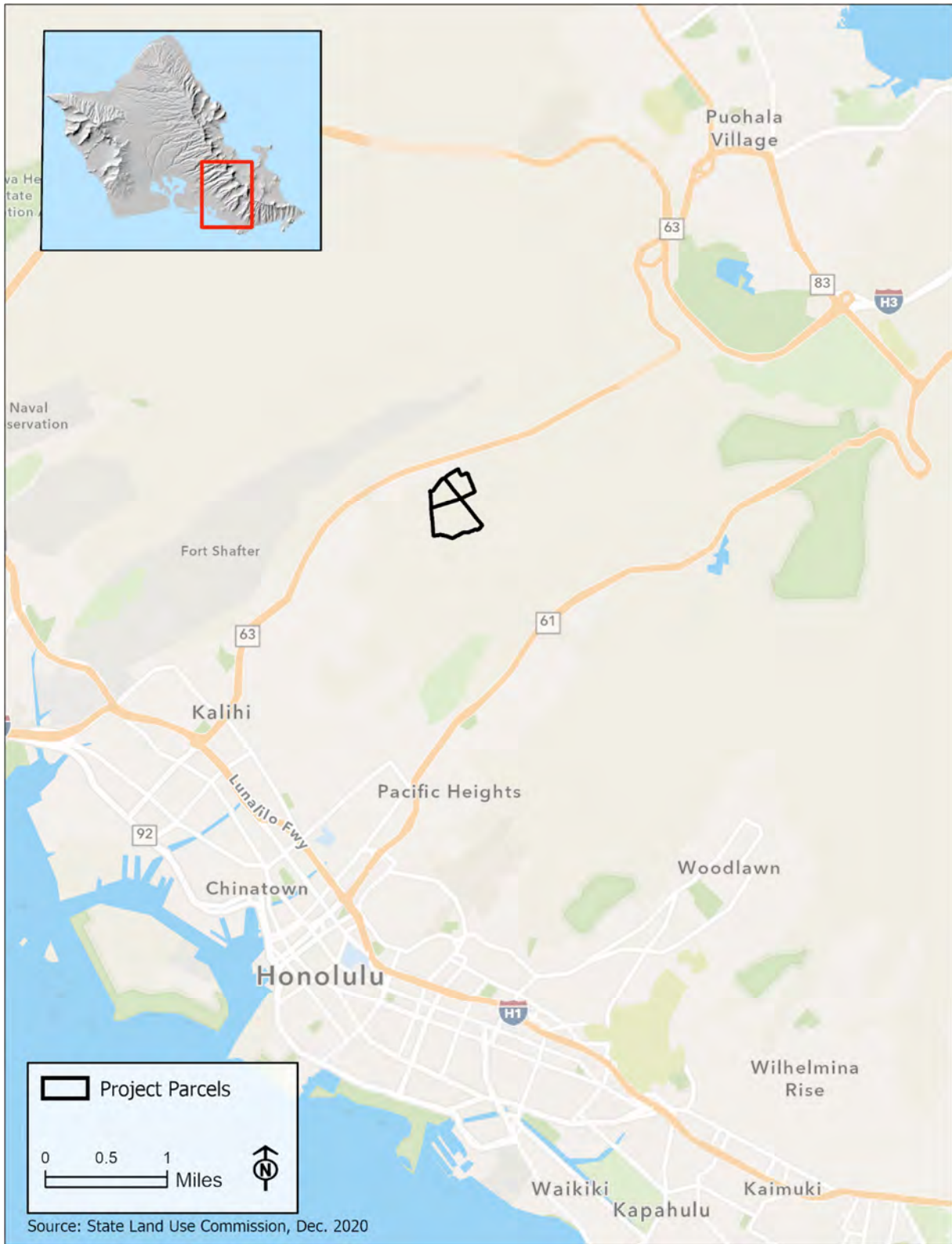


Figure 1.1

Project Location

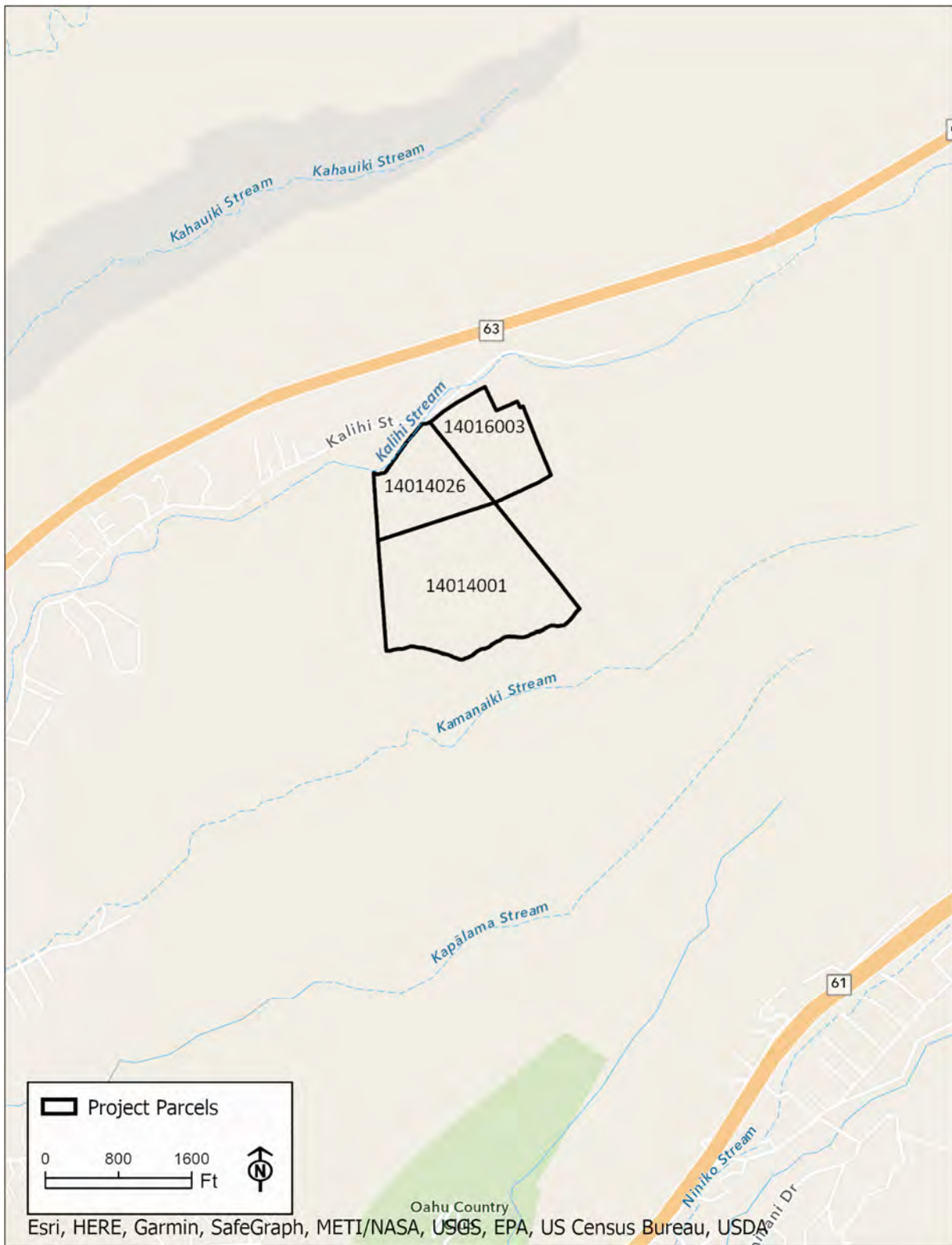


Figure 1.2

Tax Map Key

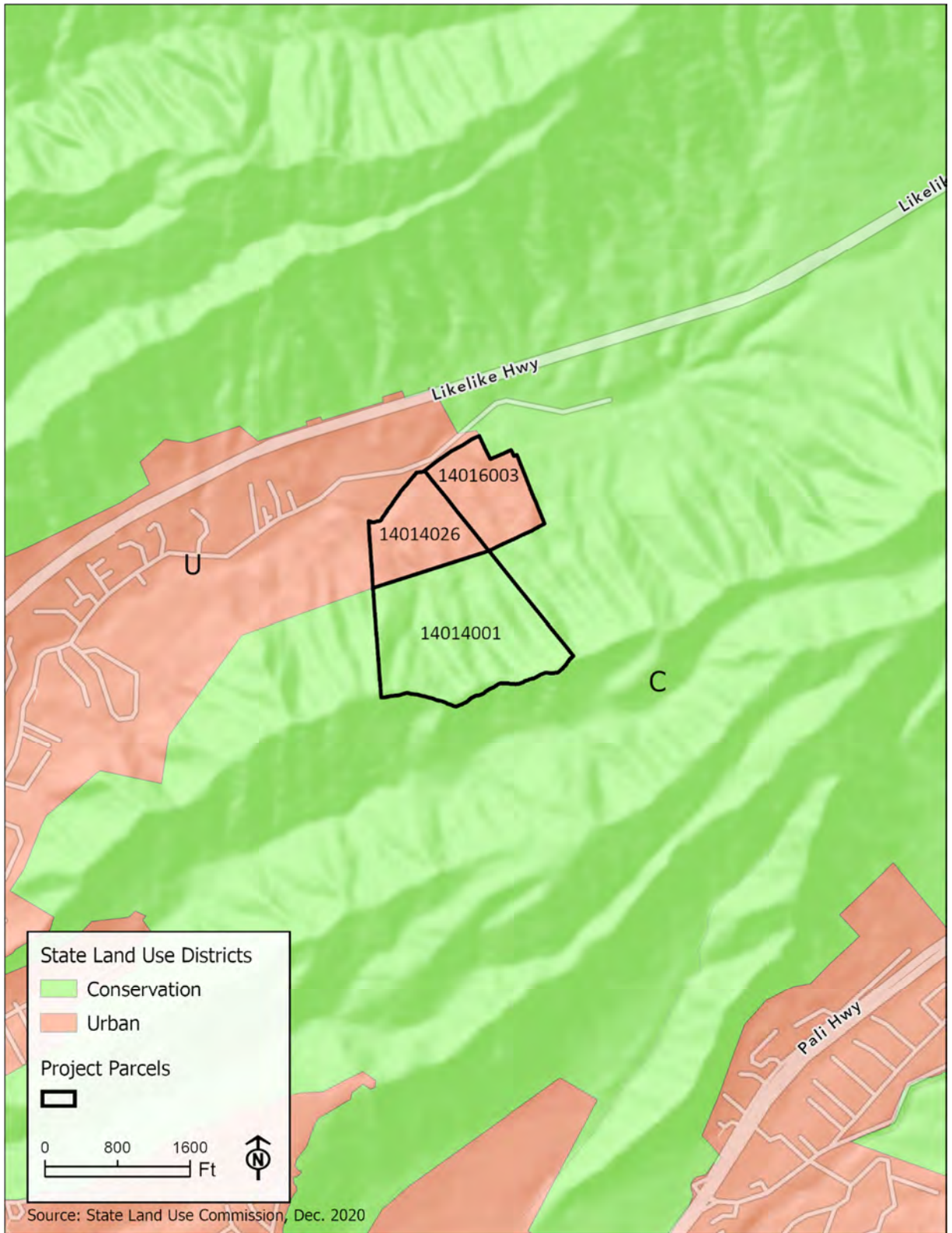


Figure 1.3

State Land Use Classification

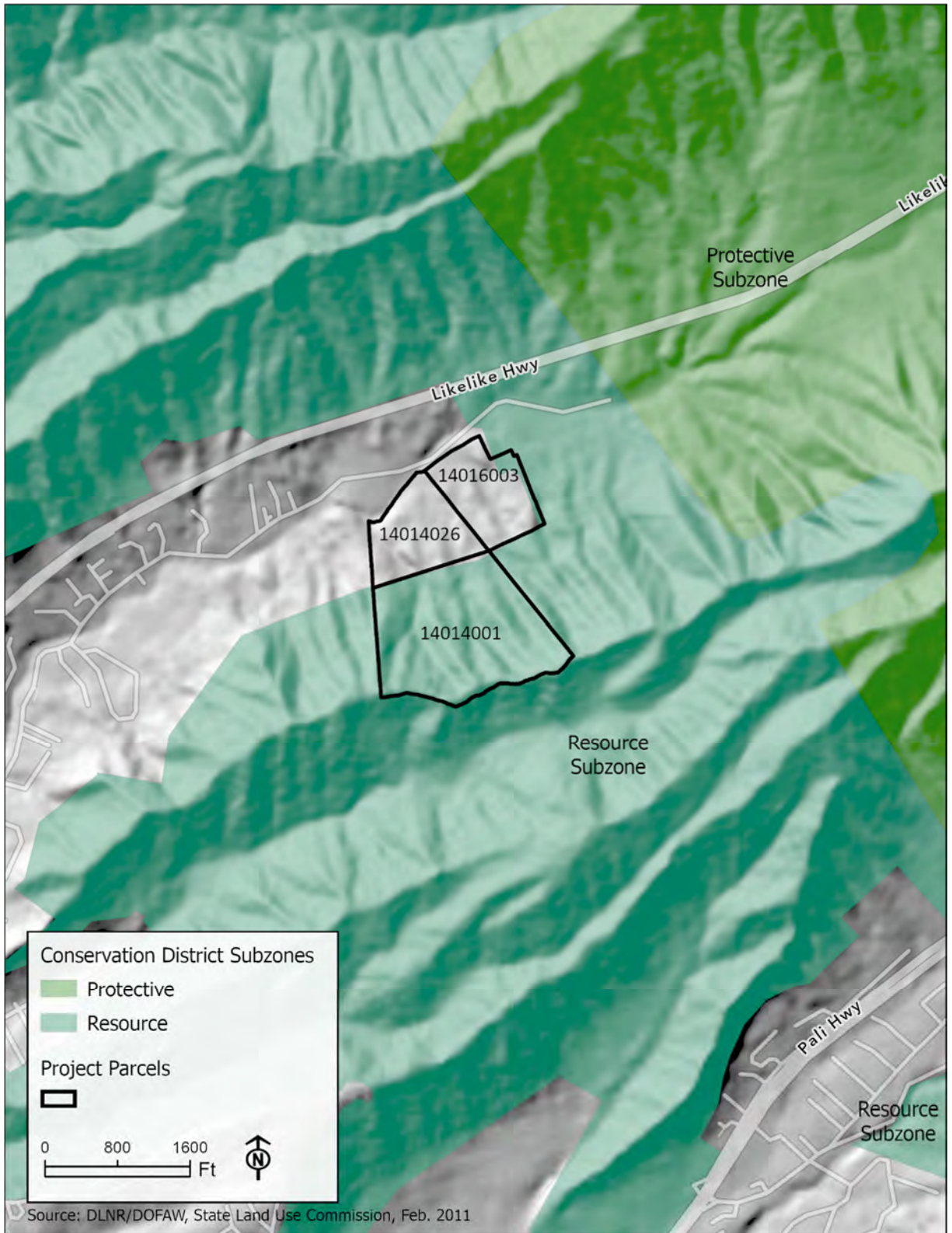


Figure 1.4

Conservation District Subzone

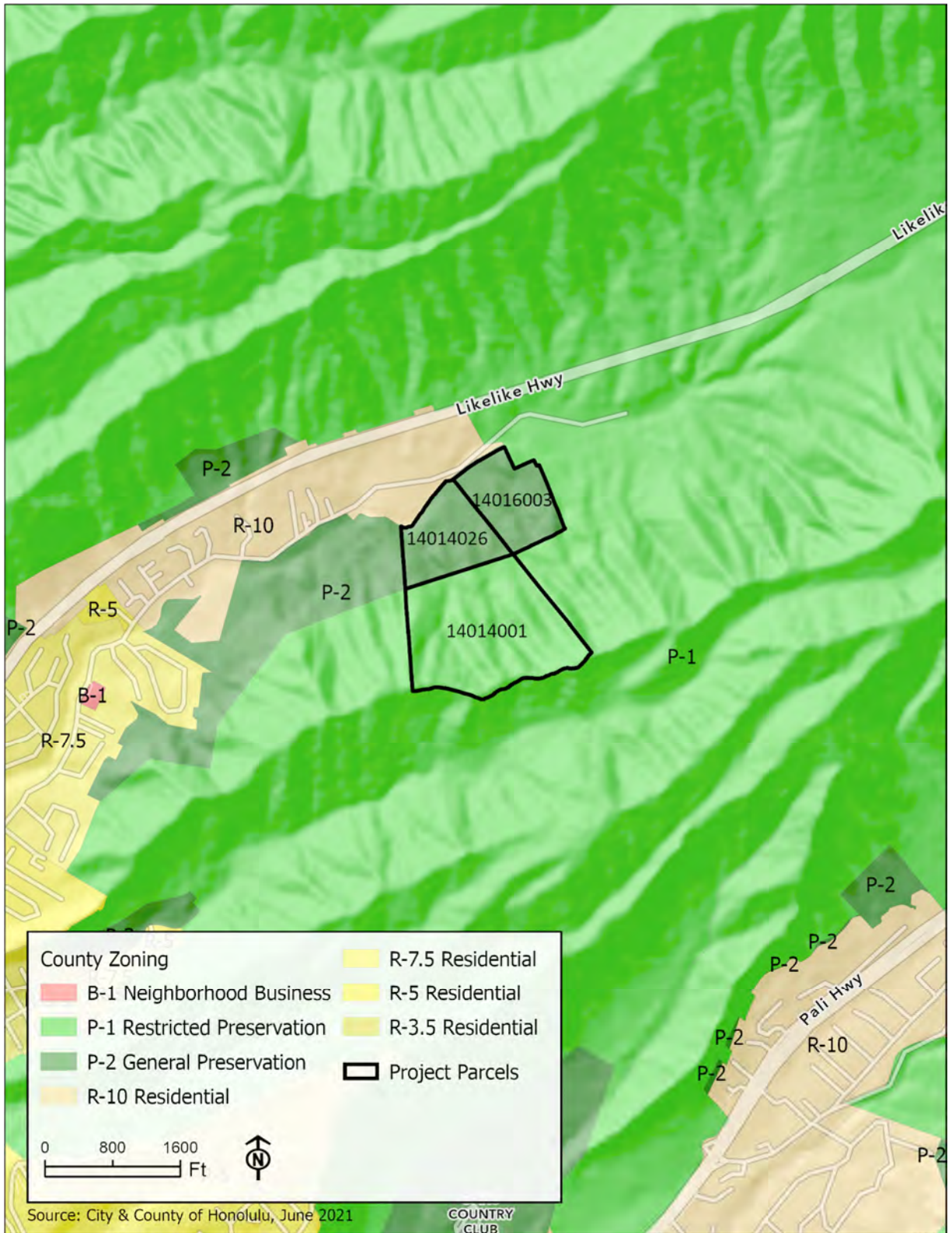


Figure 1.5

City and County of Honolulu Zoning Districts

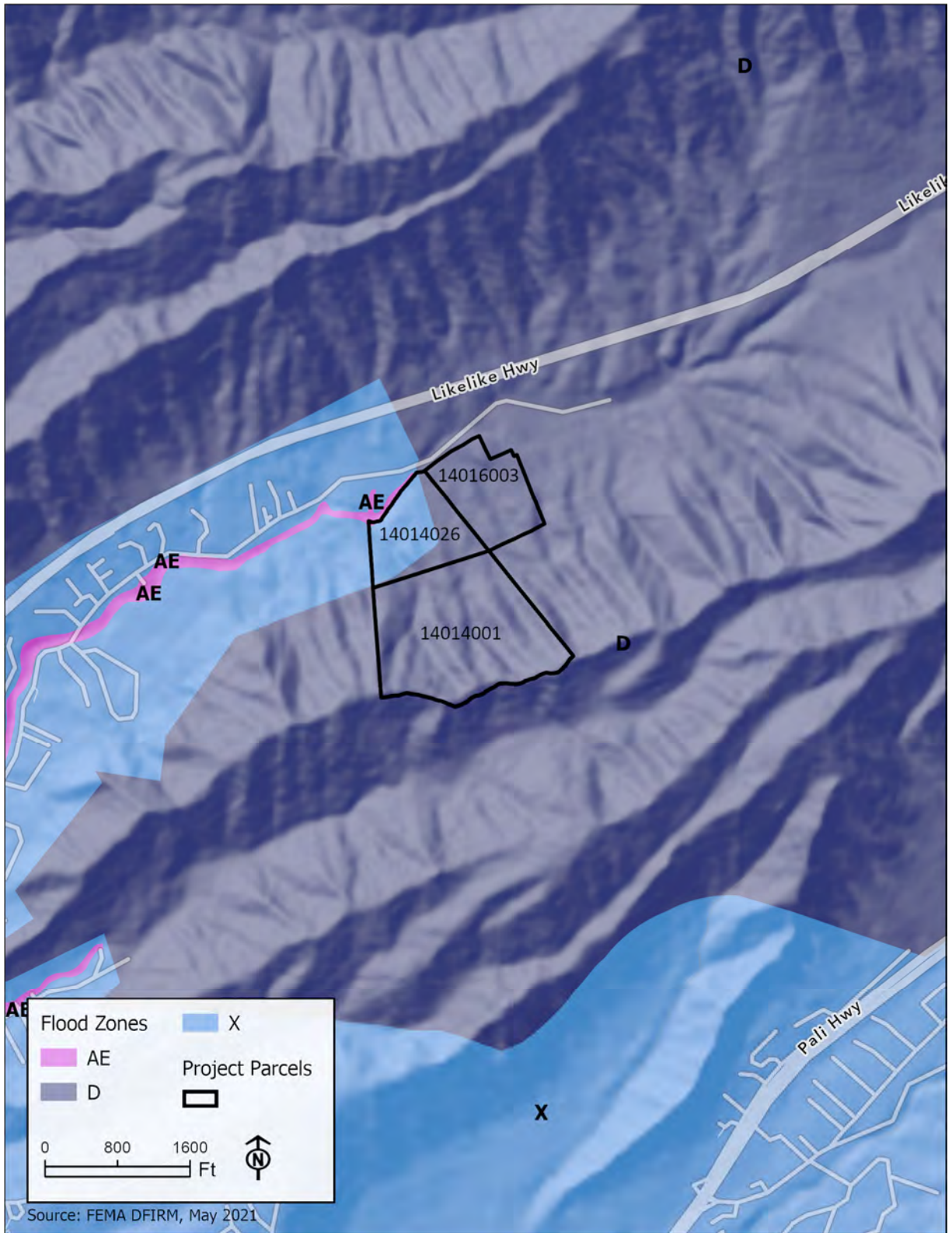


Figure 1.6

Flood Zones



Section 2

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## **Description of the Proposed Action**



## Chapter 2

# Project Description

This chapter provides the history and existing uses of the property and surrounding areas. An overview of the planned programs and facilities at Ho‘oulu ‘Āina is provided in further detail.

## 2.1 Project Area Characteristics

The area of Kalihi Uka which encompasses the area from its most mauka points at the peaks of Kilohana and Lanihuli along the Ko‘olau summit, down Kona flanks to the valley opening. A prominent ridge named Pohaka‘aloa is the traditional makai boundary of Kalihi Uka. Prior to human contact, this area was koa mesic forest. Traditionally, much of the land would have been considered “wao akua” – or the realm of the gods – where humans would never reside, and access was only allowed under the strictest of taboos. There were traditional residences throughout the valley, more near to the valley floor and the lower elevations of “wao kanaka” – the realm of man. In those times, there were extensive agricultural systems throughout the valley, filling much of the arable land.

Ho‘oulu ‘Āina is located within the ahupua‘a of Kalihi in the moku of Kona on the Island of O‘ahu (*Figure 2.1*). Puku‘i generally describes how land was traditionally divided in Hawai‘i:

The land divisions used to be so cut that they constituted segments running from the shore back into the mountains, the larger sub-division being the *ahupua‘a*, which was a section of a *moku* (island or district), and the smaller being the *‘ili*, which was a segment of an *ahupua‘a*. The complete *‘ili* was a narrow strip of the *ahupua‘a*, continuous from shore to mountain top. But some *‘ili* were broken or discontinuous, that is to say, there was a piece near the sea and another disconnected piece inland. Such was termed an *‘ili lele*, or “leaping *‘ili*.” (Family Systems of Ka‘u).

Both Māluawai and ‘Ōuaua are *‘ili lele*, which are the most common type of *‘ili* in Kalihi Valley (*Figure 2.2*). Māluawai is a lele of the larger *‘ili* of Waiaula, while ‘Ōuaua is a lele of Mokauea. Much like the *ahupua‘a*, *‘ili* can be understood as sustainable units of land division, in which all resources needed for life can be found. In general, upland lele (such as those that constitute Ho‘oulu ‘Āina) were referred to by the nickname “*‘umeke ‘ai*” or “*poi bowl*,” since these were the lands where *kalo* was greatly planted (Family Systems of Ka‘u).

The site rests upon Kalihi Valley Road and Kalihi Valley Stream at approximately 500 ft above mean sea level (msl) and extends towards the top Kamanaiki Ridge at approximately 1,400 ft above msl. Ho‘oulu ‘Āina is bounded by Kalihi Valley Road and private residents to the north, an undeveloped parcel owned by the Board of Water Supply to the east, St. Anthony Retreat Center to the west, and Kamanaiki Ridge to the south.

Today, Kalihi Valley can also be considered the area from Dillingham Boulevard to the John H. Wilson Tunnel. Kalihi Valley is mainly residential, comprised of single-family homes and a considerable number of multifamily homes, with some stores and auto-related uses interspersed. Notably, Kalihi Valley is where a few of the State’s largest public housing projects are located, home to a large immigrant community from the Philippines, Korea, Samoa, Tonga, Micronesia and other Pacific Islands. Kalihi is largely working-class. Approximately 30% of Kalihi residents use public transportation to commute to work, compared to the State’s average of 6% (21st Century Kalihi Transformation Initiative, 2017). This is the community that KKV serves.

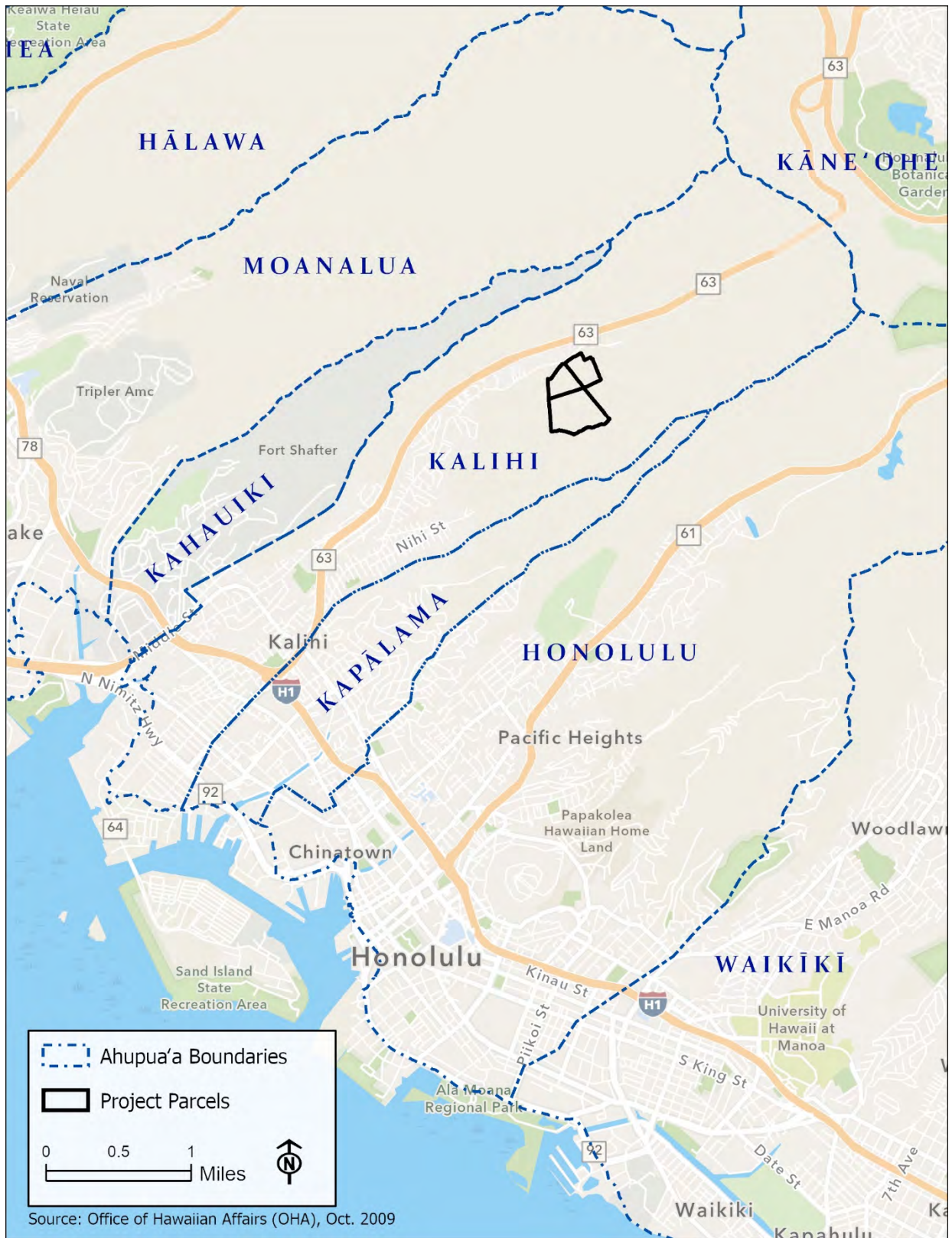
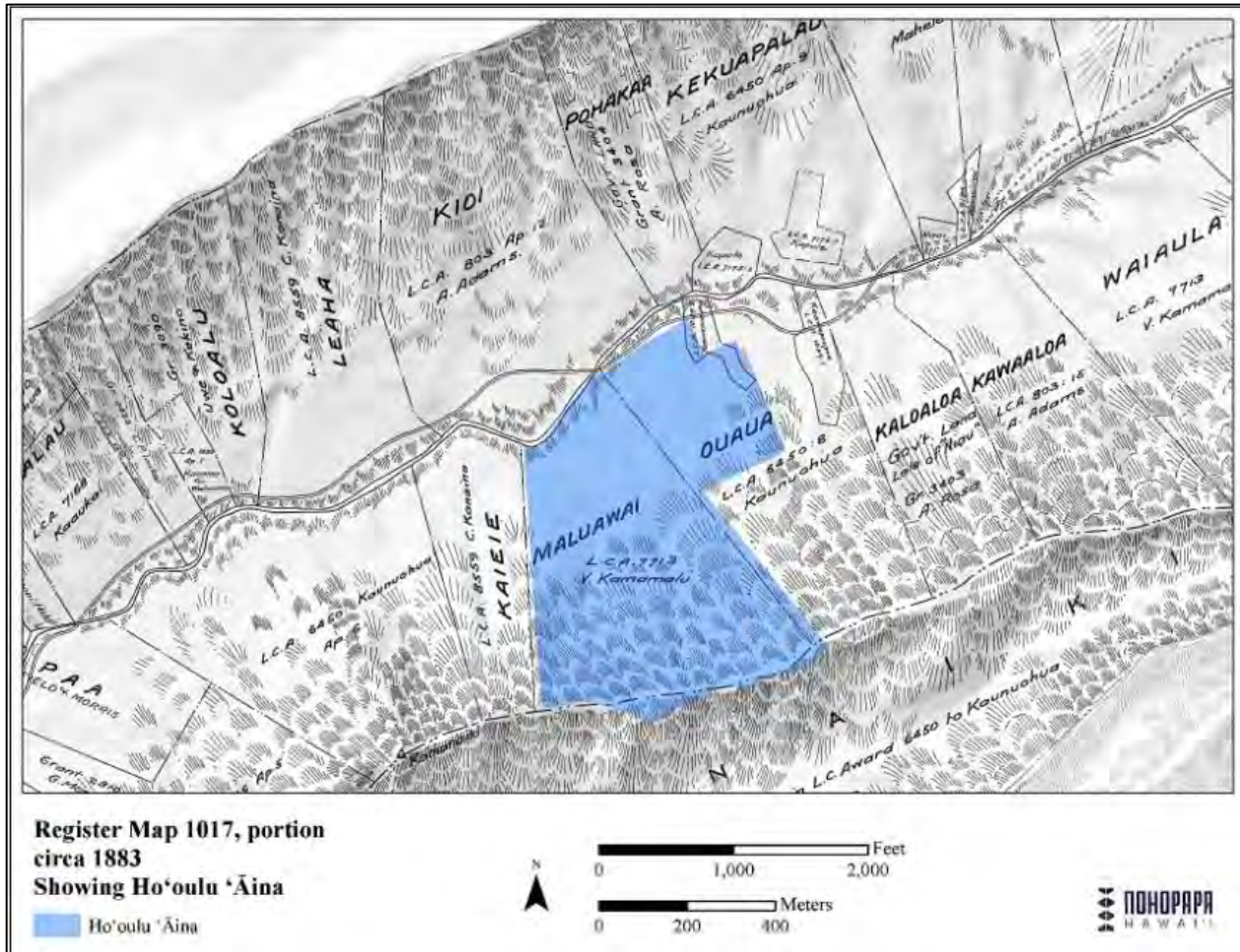


Figure 2.1

Ahupua'a Map



**Figure 2.2** 1883 Hawaiian Government Survey Map of Kalihi (Source: Nohopapa, 2020)

## 2.2 History of the Area

“Kalihi” literally translates to “the edge, border or boundary” (Pukui and Elbert 1986). Some historians claim that this name refers to how Kalihi marks “the edge” of Honolulu town. Older stories and mele, however, reveal that the ancient name for the valley was “Kalihilihi-o-Laumiha,” meaning “the eyelashes of Laumiha.” Laumiha is a goddess, born from the brain of Haumea (hanau ma ka lolo), whose name translates to “intense silence.”

The oldest historical accounts of Kalihi Valley are found in kānaka ‘ōiwi oral tradition. In mo‘olelo, Kalihi Valley is identified as a wahi pana – a storied and sacred place. The importance of this valley is evident in traditional cosmology. Many prominent Hawaiian gods are born in and choose to live in Kalihi. Notably, Papa and Wākea, the ancestral “Earth Mother” and “Sky Father” figures belonging to much of Polynesia, are strongly connected to Kalihi Valley. In Hawaiian tradition, Papahānaumoku, Papa-birther-of-islands, gives birth to the Hawaiian archipelago, and in her human form, chooses to live in the uplands of Kalihi Valley with her husband Wākea. The mountain peak Kilohana in the far back of the valley, is identified as the home of Papa and Wākea, and is a place that is greatly revered. When she is residing at Kilohana and other areas throughout the Ko‘olau mountains, Papahānaumoku is also called by the name “Haumea.”

Near Kilohana lies the 'ili of Kapō. This place is believed to be the birthplace of Kapō'ulakīna'u – a goddess of hula experts. Another name for Kapō is Laka. Kapō was born in Kalihi Uka from the eyes of Haumea. Her spirit is believed to live in the streams, rocks, and waterfalls of her birthplace. Sometimes, enlightened travelers could hear the beating of pahu drums that signaled the presence of Kapō, and could even see the significant stone where her spirit would sometimes reside. In ancient tradition, many other ākua called Kalihi Uka home. In fact, all of the great gods had stone residences in the upper valley. Kamohoali'i, the great shark god and elder brother of Pele, was also born in Kalihi Valley, from the fontanel of Haumea. He often dwelled in the steep cliffs of his valley home. Two other important Hawaiian ākua who are connected to Kalihi are Kamapua'a and his mother Hina. In one mo'olelo, Hina does not recognize her son, and Kamapua'a performs an oli in order to prove his identity. In this ancient chant, Kamapua'a explains "No Kalihi 'oe, no Kalihi wau," meaning "You (Hina) are from Kalihi, and so am I (Kamapua'a)." His chant goes on to poetically refer to the landscape of Kalihi, its unique plants and animals, and references other ancient stories of Kalihi. Kamapua'a's oli Kalihi persuades Hina of his true identity.

Many of the old mo'olelo of Kalihi describe this wahi pana as an abundant landscape – full of life and spirit. Life-giving water – ka wai ola – is plentiful in the mo'olelo. The gushing springs, gathering pools, and leaping waterfalls are central to the ancient historical record. The mo'olelo speak of the rain and streams as beloved and even familial elements. In the story of their travels, the gods Kāne and Kanaloa made their way to Kalihi Valley. At that time, it was said there was no flowing water in Kalihi. Even with the lack of ka wai ola, Kāne and Kanaloa found much 'awa growing in the valley. It grew abundantly and looked especially choice for drinking. As 'awa was their principal "food," they needed water with which to mix it (Beckwith 63). Kanaloa could not find any water to mix their 'awa, but Kāne used his 'ō'ō (digging stick/staff) and struck the bed of lava which now underlies the soil of the valley. A hold broke open out of which water leaped for them to mix their prepared 'awa. This pool of fresh water has been known since the days of old as Kapukawaiokalihi (the water hole of Kalihi), and is the original source of the fresh water stream (Beckwith 63).

The lushness of Kalihi Uka is a common historical description. Plants were spoken of growing prolifically in the upland valley. Food was known to grow abundantly, and was actively cultivated. Remains of dry-stack stone irrigation and terracing reflect the agricultural productivity in Kalihi Valley (Figures 2.3). In seeing the valley for the first time in the early 1800's, Bennett describes the agricultural potential of Kalihi as "a great extent of, probably, the finest soil in the world" (Sterling and Summers 1978). Traditional mo'olelo speak of the abundance of agricultural products that were grown in the uplands of Kalihi: mai'a (bananas) that were grown in the forest and enjoyed when they were perfectly ripe; yams also grew in the uplands, and were eaten when they were firm and mealy; kalo 'āweu (wild taro) was cultivated and pounded into a choice form of poi; native hō'i'o and kikawaiō ferns grew abundantly near streams, and were often made into a lomi dish with 'ōpae kala 'ole gathered from Kalihi stream; 'o'opu from the stream were also known to be sweet, and were especially favored fare when steamed lawalu-style, in ti-leaf bundles; lū'au made from tender kalo leaf was also readily cultivated in this area. These upland foods were often traded for and eaten with the abundant sea foods found at Kalihi Kai, such as the alamahi crab, 'opihi limpets, as well as limu.



**Figure 2.3**

**Lo'i Kalo and Gardens in Kalihi Valley  
(Source: Bishop Museum) and Remains of Dry  
Stacked Agricultural Terraces (SIHP No. 3980)**

Vegetation for lei, kapa, and other adornment were also known to be abundant. 'Olonā was an especially important resource in ancient times, and grew in the upland area. The upland forest area of Kalihi Valley was a reliable source of various native, endemic, and Polynesian-introduced plants that provided medicine and resources for canoes and other cultural and religious practices. John Papa 'Ī'ī, a prominent leader in the Hawaiian Kingdom during the 19<sup>th</sup> Century recalled his childhood memories of Kalihi Valley when the Hawaiian Kingdom issued a proclamation to gather materials for thatching "heiau houses." He remembered the journey to Kalihi Valley as it was believed to be the nearest place to obtain dry ti leaves, timber, and thatching sticks. Arriving in Kalihi Valley, he recalled the many expert canoe makers and their children of whom he played with, as Kalihi Valley held resources needed for canoe making. Additionally, he saw many taro patches in Kalihi Valley and the extensive trail networks along the taro patches that connected people to various districts on O'ahu.

Post-contact, the maka'āinana of Kalihi continued to cultivate traditional food and resource crops, while also adopting European-introduced crops that were deemed valuable and viable in the upland area. In 1848, when land became a privatized commodity in Hawai'i, the plants that were listed as cultivated in the uplands of Kalihi were: kalo, mai'a, kō, hala, 'ulu, 'alani (oranges), lemi (lemons and limes), kukui, 'ōhi'a, and koa. Kuleana land claims near the property also included agricultural systems of 'auwai and lo'i for growing kalo. Ponds were also identified within Kalihi stream that were intentionally built for the cultivation of 'o'opu (fish) and 'ōpae (shrimp).

Throughout the 19th century, several competing factors, relating to the new economic paradigm of land and resource in Hawai'i, led to the eradication of much of the native forest environment on O'ahu, especially those areas that were nearest to Honolulu town. Throughout the first few decades in the 1800's, the sandalwood trade boomed in Hawai'i, and much of the 'iliahi and surrounding forest plants were cut, cleared, and processed to export to markets in Asia. Even though 'iliahi (sandalwood) was the desired product, many more forest plants were cleared to make room for new trails, roads, and storage areas for the industry (*Figure 2.4*). Near the mid-1800's, as 'iliahi and native forest plants continued to be harvested, cattle, goats, sheep, and horses were introduced to the island of O'ahu, and large tracts of land in Kalihi were set aside for the purpose of ranching and raising ungulates. This unprecedented land use forced a great change in the environment of Kalihi Valley. Traditional forms of land-use and agriculture, which were sustainable over hundreds of generations, always honored and made space for native forest environments. With the implementation of ranching, along with unsustainable harvesting of 'iliahi for trade, and other woods for construction and firewood, quickly destroyed the native forests in Kalihi. By the start of the 1900's, the valley was largely grassland.



**Figure 2.4**

**Hauling Firewood in Kalihi Valley  
(Source: Bishop Museum)**

This kind of native-forest eradication happened in many of the mauka valleys above the growing Honolulu, with harvesting and ranching activities happening in all the valleys from Moanalua to Pālolo and beyond. With little remaining mauka forest land, and an ever-growing population, Honolulu's water supplies were greatly depleted, and water shortages were often reported in the 1900's. Realizing the importance of forests to sustaining life on an island community, government officials developed a reforestation program for much of the aforementioned mauka valleys, including Kalihi. Throughout the early 1900's, thousands of trees were planted to restore a forest environment. Many of the tree species that were selected were non-native, and were chosen for their quick-growing and prolific-reproduction attributes. Unfortunately, this meant that many of the species were invasive. It was under this reforestation effort when exotic species such as albizia, rose apple, koka, and trema were introduced to Kalihi Valley and would continue to dominate the Kalihi Valley landscape to this day.



In the later part of the 19th century, and for more than half of the 20th century, the 'Ōuaua portion of Ho'oulu 'Āina was owned by the family of Berlinda K. Marek and her husband Col. Charles S. Marek. Under the course of their ownership, in the 1930s, a home, located at 3659 Kalihi St., was constructed on the lower portion of the site along with a detached studio. They lived in the home for many years, and Col. Marek used the studio as an art workshop. He was a prolific painter. Later, the Marek 'ohana built another home further uphill and slightly mauka of this residence. That cottage is identified as the McPherson residence, and is located at 3683 Kalihi St. When KKV first came to this property, these buildings were deteriorated. KKV restored the main home and detached studio in 2006. Only the foundation remains at the former McPherson residence. Lower in the 'Ōuaua property, the Mareks also built a separate driveway to a garage. The driveway is still functional, although the garage no longer has its roof.

In the 1960's the Marek family sold the land to a developer, who also owned and managed the neighboring Māluawai section of land. The developer planned a private gated residential subdivision on the property. Under his ownership, the Māluawai portion of the property was leased to a commercial nursery operation. They planted, grew, and sold common and exotic landscaping plants. This is most likely how many invasive plants were introduced to Kalihi forests, including miconia. The nursery also sold bags of soil mined from the project area. A network of dirt roads, structures, and graded flat areas were developed by the nursery. One structure, which was built as a residence for nursery staff, is located at 3635 Kalihi St. Two large open-sided sheds, a barn-like storage space, as well as a tea house were also constructed near the home. When KKV first acquired the property, all of these structures were in disrepair. The residence was restored in 2011 through a partnership with the University of Hawai'i School of Architecture. Only the foundation of the other four structures remain at the site.

The Kalihi community was concerned about the residential subdivision, and raised concern that the proposed usage would destroy remains of the pā pōhaku and 'auwai. These concerns prompted the City to take action and acquire the site. Inaction and various legal issues followed, and the property sat with no public involvement. Transients moved into the structures, and the buildings fell into disrepair. The surrounding area was used as a dump site. Large vehicles and equipment were dumped here. The site was eventually conveyed to the State, under the direction of the State Parks Division. After more years of inaction and continued illegal use, the State sought involvement of private organizations. KKV eventually responded to the call, with a vision to utilize the space as a site to serve and improve the health of the community through connection to the land.

## 2.3 Existing Conditions

When KKV was first awarded the lease, there were at least nine structures in different states of disrepair on property: (1) Marek home, (2) Marek detached studio, (3) Marek detached garage, (4) McPherson cottage, (5) Mauka residence for nursery employees, (6 and 7) Two large, open-sided sheds, (8) A large, barn-type storage shed, and (9) a Tea house. Oral histories performed with former residents, as well as old photos, and remnants of concrete slabs suggest that there were a couple more structures on property that no longer exist. There is also a network of old roads, paved and unpaved, that traverse the property, leading to areas that have been graded flat. Constructed by the nursery proprietors and previous owners, most of these roads and graded areas were entirely covered by invasive bush. Some roads were undetectable until reforestation efforts uncovered asphalt beneath a foot of soil. There are also remains of old infrastructure on property – there is a concrete tank that used to be utilized for water catchment prior to BWS service on property; also, there are a series of old telephone poles leading from Kalihi street to the mauka residence – some of these poles were fallen when KKV first arrived; the Marek home, studio and McPherson cottage all had sewer connections, and the mauka residence had its own septic system.

Recognizing the structure's varying states of disrepair, staff members and volunteers began to remove the abandoned cars and trash and began to repair the existing structures on the property. In addition to restoration of existing structures, over 10 acres of the surrounding invasive forest have been cleared and replanted by KKV staff and volunteers. Two-acres near the former Marek home are now cultivated as an organic garden. More than five acres near the old Nursery Bunkhouse now grow indigenous agroforestry crops that are important to the Pacific Island communities of Kalihi, such as kalo, 'awa, 'ōlena, banana, papaya, and citrus. Approximately three acres in the center of the property have been cleared, and native forest plants are being re-established for the health of the Kalihi watershed and for use by cultural practitioners. Such efforts restored the health of the environment but were also indicative of the health of the community. In 2012, KKV engaged in a comprehensive planning process to guide program development at Ho'oulu 'Āina over the next 20 years. The programmatic plan identified four programs which are discussed in further detail below.

### Koa 'Āina

Koa 'Āina is the native reforestation program offered at Ho'oulu 'Āina. Volunteers are provided opportunities to restore native plant species throughout the park site. Historically, the upland area of Kalihi Valley was known as the Wao Akua, or the realm of the gods. Within the Wao Akua, wood for canoes and bird feathers for capes and other items for the ali'i flourished. Furthermore, the upland areas are an important resource acting as a vast sponge that absorbs fresh rainwater, filling streams that support aquatic life and crops in Kalihi Valley. Today, invasive vegetation such as albizia, sprawling bamboo, rose apple, clydemia, ardesia, maile pilau, and various grasses dominate the landscape, impacting water recharge rates and increasing soil erosion. Through the Koa 'Āina program, staff and volunteers remove invasive species to prepare new planting areas for native plant species. Volunteers learn about collaboration, cultural diversity, and native ecosystems while restoring the health of Kalihi's watershed and forest. *Figure 2.5* provides examples of successful efforts of native plant reforestation at the park site.



**Figure 2.5 Native Plant Species in the Lower Portion of Ho'oulu 'Āina**

#### Lohe 'Āina

Lohe 'Āina encompasses the practices to revitalize and perpetuate wahi pana (sacred spaces), and mo'olelo (cultural histories), of Kalihi Valley. Volunteers are provided opportunities to visit ancient sites, read documents in the archives, and sit with the elders who grew up here to understand the importance of the relationship the people had with the land, and specifically how the lands of Kalihi Valley sustained life for its people. Ongoing efforts to preserve archaeological sites and the cultural integrity of the wahi pana include the preservation of the agricultural terraces (*Figure 2.3*) and ancient Hawaiian pā pōhaku. Providing opportunities to deepen knowledge of the mo'olelo of Kalihi Valley, volunteers are able to understand why Kalihi Valley is a wahi pana.

#### Mahi 'Āina

Mahi 'Āina is the community food program at Ho'oulu 'Āina. Volunteers are invited to learn and engage in farming efforts and traditional medicinal practices. During the latter half of the 20<sup>th</sup> century, the topsoil was mined and sold by the nursery proprietors. Alongside the Koa 'Āina program, the Mahi 'Āina program works to replenish soils on the site for farming purposes. Areas within the lower portion of the site are designated for farming, with the Ho'okipa Center providing support for farming. In addition to refining organic farming techniques, the Mahi 'Āina program strives to empower new farmers and leaders through the Growing Farmers program and establish satellite gardens in schools and throughout the greater community. The Mahi 'Āina program restores Native Hawaiian land use practices in Kalihi Valley, providing food crops and medicinal plants to help address health inequities.

#### Hoa 'Āina

Hoa 'Āina is the community access program at Ho'oulu 'Āina where opportunities are created for volunteers to access and become *Friends of the Land*. Today, volunteers are provided educational opportunities to deepen their knowledge of cultural, ecological, and social characteristics of Hawai'i through engagement in restorative efforts at Ho'oulu 'Āina. As restoration efforts continue, staff members and knowledgeable volunteers provide a space where people from many different cultures may access the unique park environment propagating connection between the health of the people and the health of the land.

KKV has restored the Marek home, the detached studio, as well as the former mauka residence to support operations at Ho'oulu 'Āina. It is important to note that all structures at Ho'oulu 'Āina should be considered "multi-purpose." Due to the incredible amounts of rain and wind that occur quite frequently in Kalihi Uka, covered and sheltered space is a premium for the community. Every single structure has been and will continue to be used as a hosting space, when needed. KKV often erects temporary tents and empties out storage sheds in order to expand available space, but they only work so well to protect the community from the elements. Structures must be able to host educational classes, cultural workshops, and other community gatherings, as well as serve other necessary functions for programming. Sewer connections for the Marek home have been reestablished, as well as electrical and water from the grid. It was decided that the uphill portion of the property would remain off-grid, so as to keep the rural integrity of that environment. So electrical and water grid service were not restored for the mauka residence – instead, it is powered by solar panels and rain catchment, and accomodates those in need with a composting toilet. At some point in the future, the old sewer connection to the former McPherson cottage may be reestablished, although KKV's preference would be to use greener, off-grid technologies such as those used at the former bunkhouse. Additionally, three separate driveways from Kalihi Street have been restored, with one leading to the mauka, uphill portion of the property. The existing structures that have been restored to support operations are listed in *Table 2.1* and identified in *Figure 2.6*. The multi-purpose nature of the facilities are described in each discussion below.

<b>No.</b>	<b>Facility</b>	<b>Location</b>	<b>Existing Size (sf)</b>	<b>Existing Size (acreage)</b>
3	Ho'okipa Center	Lower Portion of the 100-acre site	4,000	<1
5	Apothecary	Lower Portion of the 100-acre site	864	<1
8	Hale Kahūmu	Lower Portion of the 100-acre site	120	<1
15	Hale Māmālu	Lower Portion of the 100-acre site	120	<1
17	Tutu's Hale	Upper Portion of the 100-acre site	1,200	<1
21	Mauka Hale Imu	Upper Portion of the 100-acre site	100	<1
23	Mauka Nursery	Upper Portion of the 100-acre site	2,925	<1
25	Mauka Caretakers Yurt	Upper Portion of the 100-acre site	700	<1

## 2. Ho'okipa Center

The Ho'okipa Center is identified as Site 2 in *Figure 2.6*. This Center is comprised of the former Marek home, detached studio, and surrounding paved lānai space. The Ho'okipa Center serves as the main permanent gathering space at Ho'oulu 'Āina. Prior to becoming a lessee of the site, the foundation of the current Ho'okipa Center was in varying stages of disrepair. Since becoming a lessee, the building foundation has been restored with electrical, water and sewage services. Inspired by traditional mo'olelo of Kalihi Uka, the two buildings are now named Kanikawī and Kanikawā, which reference the names of two flowers that the goddess Haumea used as medicine to help during childbirth. The small front studio takes the name Kanikawī, while the larger home is Kanikawā.

As with all of the structures at Ho'oulu 'Āina, Kanikawī serves several functions. For years, it was a designated classroom space. Since the last EA, which was published in 2005, and the advent of mobile technology (such as mobile phones and tablets with access to wireless internet) students are now able to perform much of the environmental education out in the field, which requires less dedicated classroom space. Since then, Kanikawī has served as a hosting space for small workshops, conferences, or individual work space. During the Covid pandemic, it became a vital food and supply pantry for the community. The food and supplies stored here are delivered to kūpuna and families in need in the community. It will continue to be a space to hold emergency community supplies as well as a community hosting space once the pandemic is over.

In Kanikawā, there is a kitchen that provides support for community gatherings. A large, open room is used as an office space, as well as a room for small meetings. The back room serves as the apartment of the resident caretaker for the lower portion of the property. There is a separate kitchenette and bathroom in the caretaker's residence. There are two adjacent shed roofs to Kanikawā that provide much needed space for program storage, as well as staging space for crops coming out of the garden. These sheds are approximately 120 sq ft each and are connected to the building's utilities. Volunteers often gather under these sheds before heading out into the field. Two sinks provide support to the community kitchen as well as the garden. There are two separate paved lānai spaces – one in front of Kanikawā and one in front of Kanikawā. Both lānai currently have tents to make the spaces usable for the community. When Col. Marek owned the property, the lānai in front of Kanikawā was covered with a permanent roof and clear, glass walls to protect from the elements.

The Ho'okipa Center serves the community well in its current state. There are only small adjustments to the structures and surrounding space that KKV would employ based upon permitting and available funding. In the interest of extending available outdoor space, KKV would cover both lānai with permanent roofs to make the space more protected (Site 3 identified in *Figure 2.6*). In the future, the caretaker's residence may be expanded to provide additional room for the caretaker's family.

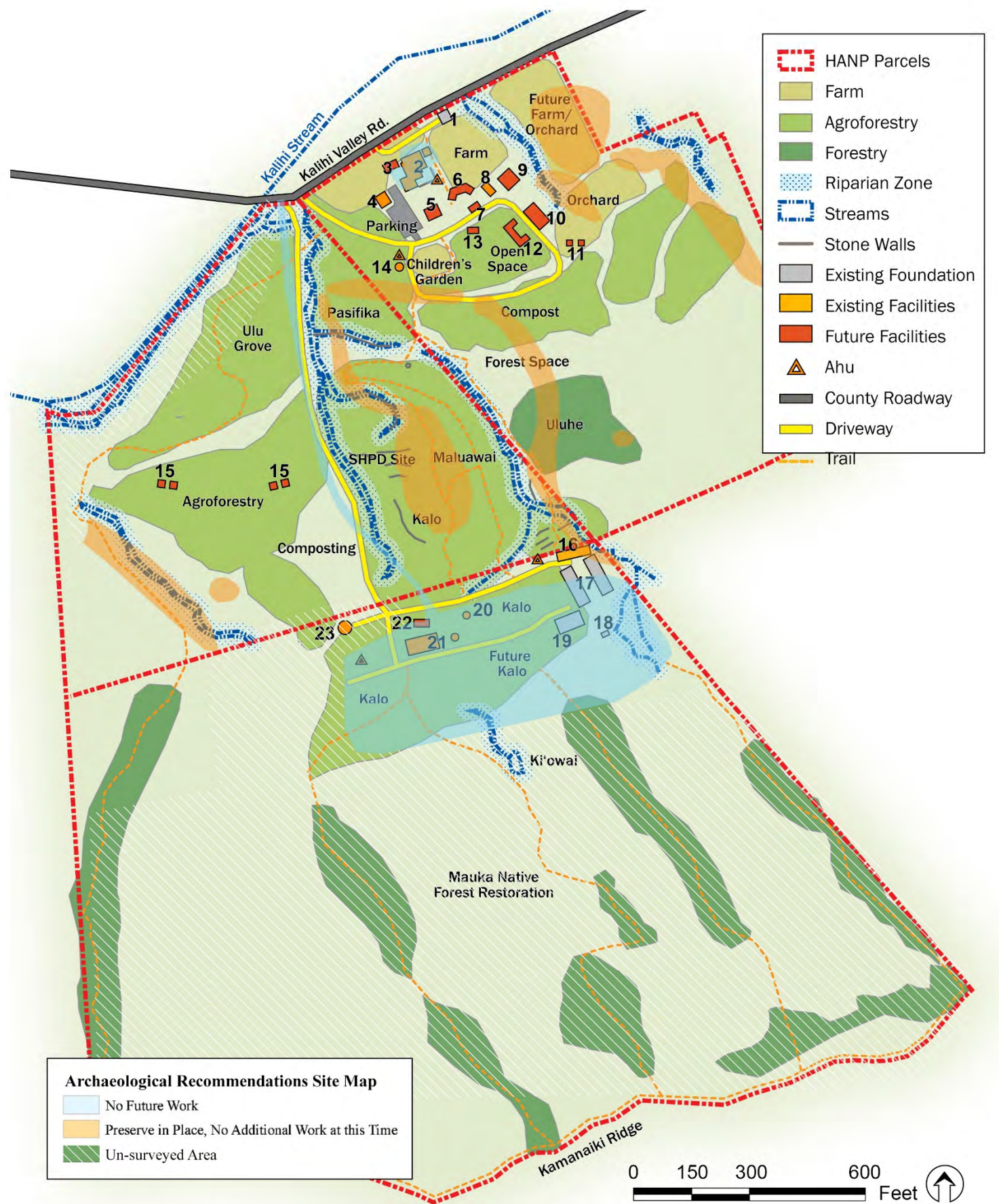
#### 4. Hale Kū Makani Apothecary

Hale Kū Makani is identified as Site 4 in *Figure 2.6* and is located within the lower portion of site, adjacent to the parking lot. KKV is currently pursuing an after-the-fact permit through the DPP for this structure. The apothecary provides kūpuna, adults, and children within the community a place to seek medical treatment and learn about la'au lapa'au practices (plant-based medicine) – restoring ancient practices that used to be common throughout Kalihi Valley. Hale Kū Makani was designed as a tiny building, with an attached covered lānai. The interior of the apothecary (*Figure 2.7*) provides opportunities to carry out lomilomi treatment, to create and store traditional medicines, and provides a space for medical practitioners to provide medical and dental services to the community. The interior and exterior spaces provide support for lapa'au as well as hosting and providing an educational space. The lānai is often used as a gathering space for work group, before they dispatch for the field.



**Figure 2.7**

**Exterior and Interior of the Apothecary**



**Lower Facilities**

1. Educational Workshop
2. Ho'okipa Center
3. Covered Outdoor Space
4. Apothecary (Permit Required)
5. Hālau Pavillion
6. Hale Mahi'ai
7. Garden Storage
8. Hale Kahūmu

9. Community Kitchen Space
10. Hale Lauiele
11. Programmatic Growth Gathering Space
12. Baseyard/Maintenance
13. Hale Wa'a
14. Hale Māmalu
15. Programmatic Growth Gathering Space

**Mauka Facilities**

16. Tutu's Hale
17. Tool/Storage Sheds
18. Hale
19. Hālau
20. Mauka Hale Imu
21. Mauka Nursery Including the Water Catchment
22. Mauka Workshop
23. Mauka Caretakers Yurt

# Ho'oulu 'Āina Nature Preserve

## 20-Year Site Master Plan



Figure 2.6

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### 8. Hale Kahūmu

Hale Kahūmu is located in the lower portion of the park site, identified as Site 8 in *Figure 2.6*. This open shed structure provides a shelter for cooking in the imu (*Figure 2.8*). When not in-use for imu, the shed stores imu-related tools such as shovels, rakes, imu rocks, and firewood. When emptied, meetings and workshops are held under the covered space.



**Figure 2.8**

**Hale Kahūmu**

### 14. Hale Māmalu

Hale Māmalu is located in the lower portion of the park site, identified as Site 14 in *Figure 2.6*. Hale Māmalu is a traditional hale (*Figure 2.9*) providing a space to support traditional healing practices including lā'au lapa'au, lomilomi, kākau uhi, ho'oponopono, and 'awa ceremony.



**Figure 2.9**

**Hale Māmalu**



## 16. Tutu's Hale

Tutu's Hale is located in the mauka portion of the site and is identified as Site 16 in *Figure 2.6*. This structure was built in the early 1960's as a residence for nursery workers. In 2011, in partnership with the University of Hawai'i School of Architecture, staff and volunteers renovated the building (*Figure 2.10*). The foundations, floors, and roof were all repaired, and since then, the home has served as an important mauka gathering space. Instead of restoring electrical and water services from the grid, solar panels and rain catchment tanks have been installed to keep the rural integrity of the mauka area. There are also composting toilet facilities.

Currently, the structure hosts day-time volunteers, workshops and work days; as well as artisans utilizing the space to create native, traditional, and progressive arts. The space has also been utilized for woodworking and teaching the art of woodworking, utilizing invasive wood repurposed from the surrounding forest (*Figure 2.10*). There have been a few times where the structure served as overnight accommodations for groups needing to make healing connections to the land, as well as visiting artists. In the future, KKV plans for this structure to host more of these kinds of overnight visits. Visitors would need to walk-in from the bottom parking area. Access for those less mobile could be provided via the restored mauka driveway. There would need to be more development and investment into equipment for cooking and food-storage, as well as more composting toilet(s) in order to host more overnight visits. All of the aforementioned systems will be off-grid and be designed to fit into the rural nature of the mauka area.



Figure 2.10

Tutu's Hale

### 21. Mauka Nursery

The Mauka Nursery was constructed in 2009 in partnership with Men's Leadership Hawai'i (MLH), and with support from DLNR Department of Forestry and Wildlife (DOFAW). The Mauka Nursery consists of a large shed roof, where native plant species are propagated in support of the Koa 'Āina and Mahi 'Āina program (*Figure 2.11*). Additionally, the Mauka Nursery provides educational opportunities for volunteers to learn about various native plant species. The Nursery is entirely off-grid, utilizing rain catchment water and solar energy. There are two 11,000 gallon tanks that are fed from the rain catchment systems. Drip irrigation is used for all of the propagated plants.

There is a separate storage shed identified as the Mauka Hale Imu (Site 20 in *Figure 2.6*) nearby that is used primarily to store equipment such as lawn mowers, fencing, and t-posts. It is about 400 sq ft and is not connected with any water or electrical services.



**Figure 2.11**

**Mauka Nursery and Storage Shed**

### 23. Mauka Caretakers Yurt

The Mauka Caretakers Yurt is the place of residence for the mauka caretaker (*Figure 2.12*). Located in the uphill portion of the site. Access to the caretaker's yurt is provided via the restored nursery access road. Water is provided to the Caretaker's Yurt through a rainwater catchment system. It is equipped with a composting toilet to minimize additional water and wastewater.



**Figure 2.12**

**Mauka Caretakers Yurt**

In addition to the existing facilities supporting operations at Ho'oulu 'Āina, the concrete-slab foundation of the former Marek and McPherson home remain on the property. The following section further describes the proposed usage of the existing foundations to support operations and Ho'oulu 'Āina and guide future growth.

## 2.4 Description of the Proposed Action

Since becoming a lessee of the site, KKV has seen an increasing demand to provide access to an environment cultivating an indigenous lifestyle with opportunities to engage in 'āina based restorative efforts. After conducting outreach and consulting with community members, KKV crafted a programmatic plan to continue restoration efforts and provide opportunities for volunteers to access the unique park environment and deepen knowledge of Native Hawaiian culture through engaging in 'āina based restorative efforts. KKV is updating the master plan to support the programmatic plan and guide future growth. The proposed master plan update will support current program operations with efforts to restore the health of the land and the health of the people.

A total of 14 facilities are proposed in the master plan update (*Table 2.2*). To minimize the building footprint at the park, past and future development is largely related to the original footprints of the old roads and structures. Of the new facilities planned, eight (8) have foundations existing or currently serve as gathering spaces that will become covered sheltered facilities to support operations. The foundation of the McPherson Cottage, Two-Large Open-Sided Sheds, Large Barn-Type Storage Shed, and the Tea House remain on the site. The remaining six (6) facilities are newly planned facilities to support program operations. Wherever possible, KKV institutes environmentally-friendly design, such as structures with passive solar heating and roads that have storm water catchment systems with native plantings. KKV searches for opportunities to employ green technologies, such as solar power and rain catchment. Also a part of KKV's mission is to use sustainable materials, especially wood sourced from invasive forest species. The locations of the planned facilities are shown in *Figure 2.6*.

<b>No.</b>	<b>Facility</b>	<b>Location</b>	<b>Foot Print (sf)</b>	<b>Foot Print (acreage)</b>
1	Educational Workshop	Lower Portion of the 100-acre site	625	<1
5	Hālau Pavilion	Lower Portion of the 100-acre site	1,800	<1
6	<b>Hale Mahi'ai</b>	<b>Lower Portion of the 100-acre site</b>	<b>1,000</b>	<b>&lt;1</b>
7	<b>Gardening Storage</b>	<b>Lower Portion of the 100-acre site</b>	<b>260</b>	<b>&lt;1</b>
9	Community Kitchen Space	Lower Portion of the 100-acre site	900	<1
10	<b>Hale Lauele</b>	<b>Lower Portion of the 100-acre site</b>	<b>7,500</b>	<b>&lt;1</b>
11	<b>Programmatic Growth Gathering Space</b>	<b>Lower Portion of the 100-acre site</b>	<b>400</b>	<b>&lt;1</b>
12	Baseyard/Maintenance	Lower Portion of the 100-acre site	900	<1
13	<b>Hale Wa'a</b>	<b>Lower Portion of the 100-acre site</b>	<b>800</b>	<b>&lt;1</b>
15	<b>Programmatic Growth Gathering Space</b>	<b>Lower Portion of the 100-acre site</b>	<b>400</b>	<b>&lt;1</b>
17	Tool/Storage Sheds	Upper Portion of the 100-acre site	4,000	<1
18	Hale	Upper Portion of the 100-acre site	225	<1
19	Hālau	Upper Portion of the 100-acre site	2,400	<1
22	<b>Mauka Workshop</b>	<b>Upper Portion of the 100-acre site</b>	<b>600</b>	<b>&lt;1</b>

**Bold** indicates new supporting facilities as part of the proposed master plan update that will be built on new foundations

### 2.4.1 Phasing of Proposed Master Plan Update

The proposed master plan update is planned in three (3) phases over the next 18 years to guide gradual and steady growth at Ho'oulu 'Āina. The phasing of proposed improvements will mitigate potential adverse effects from construction-related activity. Phase I, which will span over the next three years, includes the construction of Hale Mahi'ai and Garden Storage, Hale Lauuele, Baseyard and Site Maintenance, and Mauka Workshop. Phase II, which spans from 2025 to 2030, includes the construction of the Hālau Pavilion, Community Kitchen Space, and Hālau Wa'a. The final phase, which will span approximately 10 years from 2030 to 2040, includes the construction of the Educational Workshop, Hale for Programmatic Growth, Sheds, Hale, and Hālau. The following section provides details of the improvements broken down by each phase.

#### Phase I: 2022-2025

##### 6 & 7. Hale Mahi'ai and Garden Storage

Hale Mahi'ai is a facility planned to support the Mahi 'Āina program and food production at Ho'oulu 'Āina. Hale Mahi'ai will be located in the lower portion of the park as identified in *Figure 2.6*, which is adjacent to the location of the former McPherson cottage. Hale Mahi'ai will house the Mahi 'Āina program, and will be a space dedicated to organic farming education. The site is near the old connections to water, electrical, and sewer of the former McPherson cottage. The preference will be to utilize off-grid water and electricity for this structure.

A Garden Storage shed to store gardening supplies is planned for location in the lower portion of the park near the existing and proposed facilities as part of the proposed master plan update. The Garden Storage shed will support Hale Mahi'ai with storage of important farming tools and organic materials, such as shovels, rakes, hoes, soil, and ammendments. This shed will not be connected to any utilities.

##### 10. Hale Lauuele

Hale Lauuele is a planned facility that will support program operations at Ho'oulu 'Āina and continue to build community resilience through reconnection with the land. Hale Lauuele will be located in the lower portion of the park as identified in *Figure 2.6*. Two storage containers are currently located where Hale Lauuele is planned (*Figure 2.13*), however, the storage containers will be relocated to Site 12, the Baseyard and Site Maintenance area.



**Figure 2.13**

**Existing Storage Containers**

Plans for Hale Lauuele includes a space to store and use a portable band saw mill. The facility will recover and repurpose albizia that is removed from the forest in support of the Koa 'Āina program. Furthermore, the mill may be used to repurpose invasive trees removed from the park and invasive trees removed from other locations on the island. The saw will be attached to a trailer and will be able to be towed to different parts of the property for use. A wood shop is also planned to support the Koa 'Āina program and will be equipped with materials for traditional carving, cabinetry, and other woodworking activities allowing volunteers to learn and engage in the repurposing of non-native species through wood carving and carpentry. For fire hazard mitigation, the plans include installing professional level vacuum and ventilation systems as well as a fire sprinkler system in the building. Hale Lauuele will also be equipped with large interior spaces to shelter volunteers from the rain during workdays and provide a gathering space to learn about ecology, conservation, and Hawaiian culture including la'au lapa'au, history and ancestral knowledge of Kalihi Valley, and 'ōlelo Hawai'i (Hawaiian language). Additionally, the large interior spaces may provide a space for medical providers and practitioners in indigenous healing to provide services to the medically underserved community. Plans for these facilities include off-grid water and electrical services through rainwater catchment, solar panels, and compostable toilets to sustainably support energy needs.



Figure 2.14

Plans for Hale Lauuele (Source: AMA A/E Architects, 2021)

## 12. Baseyard and Site Maintenance

Plans for the Baseyard and Site Maintenance includes storage containers and a covered open area. These spaces will be used to care and maintain the equipment and tools required to run the extensive forestry and farming programs, as well as storage of needed materials. The existing storage containers currently located where Hale Lauele is planned will be relocated to the Baseyard and Site Maintenance area as identified by Site 12 in *Figure 2.6*. This site will also work in-tandem with Hale Lauele to move logs and as a space to cure lumber. Because of its proximity to Hale Lauele, this facility will pull needed utilities from the other new construction.

## 22. Mauka Workshop

Currently, all tools and equipment for forestry, farming, and maintenance that are used on the mauka side of the property are stored in two portable 8-foot containers. Cleaning and maintenance of the tools is primarily performed in the field. Long-term, plans are to improve the existing space with the addition of a roof that will span the portable containers. This will provide a space for tool maintenance and a bit more space for storing various gardening equipment. It is not anticipated that the Mauka Workshop will require water, wastewater, or electrical services.

## **Phase II: 2025-2030**

### 5. Hālau Pavilion

Currently, a 20x40 foot tent provides shelter for the most-used gathering space on property. This central area is near to the parking lot, and is the ideal space for gathering work groups prior to being dispatched to the field. Plans for the Hālau Pavilion include replacing the current tent space (*Figure 2.15*) with a hale inspired by traditional Hawaiian modes of construction. It will utilize lashed timber, same as traditional hale. It will serve as the main gathering space for volunteers on workdays. The planned Hālau Pavilion will be constructed in the same location as identified as Site 6 in *Figure 2.6*. The Hālau Pavilion may include connection to the City's water, sewer and electrical services, although greener technologies are preferred, if possible.



**Figure 2.15**

**Existing Conditions of Hālau Pavilion**

### 9. Community Kitchen Space

The only kitchen that currently services the lower portion of the property is the one located in the Ho'okipa Center. It is the original kitchen from the Marek home, designed to feed only one family. So far, the little kitchen has been able to support many groups that come to Ho'oulu 'Āina, as well as a few larger work parties of 200+ individuals. In the future, a larger, dedicated community kitchen space is planned to better house the cooking and serving needs of the community. The community kitchen will be located at the old McPherson cottage, where an existing concrete foundation is located (*Figure 2.16*). As Ho'oulu 'Āina continues to grow, a larger kitchen space will better facilitate traditional cooking demonstrations with foods harvested from the garden and continue to foster community cohesion through cooking and food preparation. Additionally, the new kitchen space will continue to feed the groups that come to support Ho'oulu 'Āina. This community kitchen space is not intended to replace the commercial kitchen located at Roots Café Kōkua Kalihi Valley.



**Figure 2.16**

**Existing Concrete Foundation**

### 13. Hale Wa'a

After the completion of Hale Lauale, and once the mill is up and running, KKV anticipates an increase in the number of traditional canoes that will be carved and stored on-site. Already, there have been at least five traditional canoes carved from albizia on property. Most have been traditional Hawaiian shape canoes, however, there have also been Tokelauan and Satawalese designed canoes built as well. All canoes are currently stored under a tent. The Hale Wa'a space will provide volunteers with opportunities to learn about traditional canoe carving and provide adequate storage for canoes. Hale Wa'a will be designed to reflect a traditional canoe hale located within the lower portion of the park along the driveway to allow for proper canoe transportation (*Figure 2.6*). It is not anticipated Hale Wa'a will require water, wastewater, or electrical services.

### Phase III: 2030-2040

#### 1. Educational Workshop

This space was developed by the Marek family as a driveway and separate garage. The driveway was restored and re-paved in order to support access to the lowest corner of the 'Ōuaua portion of the property. The garage remains with cinder block walls, however the roof is non-existent. Currently, the garage area is covered by overgrown vegetation (*Figure 2.17*).

Since 2011, this area has become more and more frequently accessed by illegal hikers. There are no plans for this structure in the near future, as security and safety are the current main concerns. In support of the neighboring community and the BWS, a series of signage and fencing have been implemented to deter access. Further into the future development of the property, and once the illegal hiking has been successfully deterred, this space has the potential to be restored and developed as an open garage and workspace. Additionally, a second story within the existing building footprint could be constructed to provide more educational and workshop space. Water, electricity, and sewage connections are already existing or easily accessible, although off-grid technologies would be preferred, if capable.



**Figure 2.17**

**Existing Foundation of Planned Educational Workshop**

#### 11 & 15. Hale for Programmatic Growth

Sites 12 and 16 identified in *Figure 2.6* are new facilities that will support the proposed master plan update. The Hale for Programmatic Growth includes two tiny cabins that will provide shelter from rain and a wash space to accommodate volunteers on workdays. The Hale for Programmatic Growth may also be ideal for overnight educational workshops at Ho'oulu 'Āina. Plans for these facilities include off-grid water and electrical services through rainwater catchment and solar panels.



### 17. Sheds

Two large sheds dating back to the commercial nursery operation were in disrepair when KKV first became lessees to the property. The sheds were full of old equipment, trailers, and trash, and rusted until they collapsed into two large heaps. KKV spent many months clearing the rubbish that could be moved by hand. Only foundations remain of these sheds. Building upon the current foundations, KKV will erect sheds that will store large tools and equipment at Ho'oulu 'Āina. The sheds will also provide storage for logs and other woodworking equipment with the sheds located nearby of the existing Tutu's Hale (*Figure 2.6*).

### 18. Hale

Site 19 in *Figure 2.6* is the old tea house that was established with the commercial nursery operation. The foundation of the former tea house remains, and is currently totally overgrown by invasive bush and albizia forest. Eventually, as these mauka areas are restored to native plant life, the foundations of the old tea house will be utilized to construct an open-air Hale in the mauka portion of the park. This covered space will be used as shelter for volunteers and workers, as well as quiet meditative space in the mauka reaches of the park. It is not anticipated the Hale will require water, wastewater, or electrical services.

### 19. Hālau

Site 20 in *Figure 2.6* is the location of an old, large barn-style storage shed from the commercial nursery operation. Only foundations remain of this old shed, and it is currently totally overgrown by bushes and invasive forest (*Figure 2.18*). Eventually, as more of the invasive forest is cleared, the foundations of this old shed will provide space for a hālau where volunteers will have the opportunity to learn about Native Hawaiian woodworking and art. The Hālau will be designed to reflect a traditional hale. To support operations at the Hālau, the Hālau will utilize off-grid electricity using solar panels.



**Figure 2.18**

**Dilapidated Storage Shed**

## 2.5 Required Permits and Approvals

**Final Environmental Assessment/Finding of No Significant Impact (FONSI), Chapter 343, HRS** – The lease of the site from the State DLNR, State Parks Division has triggered compliance with HRS Chapter 343 with the use of state lands. To assist Ho'oulu 'Āina in future improvements, the DLNR will need to review the Environmental Assessment for the proposed master plan update.

**Review by State Board of Land and Natural Resources (BLNR)** – Upon completion of the HRS Chapter 343 process and issuance of a Finding of No Significant Impact (FONSI), the Final EA/FONSI for the proposed master plan update will be presented to the Board for implementation over the next 30 years.

**Other Permits and Approvals** - There are other permits and approvals that are categorized as “ministerial” because they do not require approval by a commission or department director. These approvals include a Grading, Grubbing and Stockpiling Permit and Building Permits, which will be obtained in advance of construction. Approval from the State Department of Health (DOH), Wastewater Branch (WWB) will be obtained for the existing and future composting toilets as improvements progress at the park. Additionally, a National Pollutant Discharge Elimination System (NPDES) Permit will be obtained prior to the start of construction related activity.

**Description of the  
Environmental Setting,  
Potential Impacts  
and Mitigation Measures**



## Chapter 3

# Environmental Setting, Potential Impacts, and Mitigation Measures

The environmental setting, potential impacts, and mitigation measures for the proposed improvements at Ho'oulu 'Āina are discussed in the sections below.

### 3.1 Climate

#### *Existing Conditions*

Average annual temperatures in Kalihi Valley range between approximately 70- and 84-degrees Fahrenheit, depending upon the time of day and the season. Precipitation in the area is moderately heavy, with rainfall averaging well over 100 inches annually – the majority of which occurs during the months between November and April. Wind conditions in Kalihi Valley are predominantly in the form of trade winds from the Northeast that blow through the windward pass of the Ko'olau summit and down the valley toward Honolulu.

#### *Anticipated Impacts and Proposed Mitigation*

The proposed update to the master plan will have no effect on climatic conditions; therefore, no mitigation measures are required.

### 3.2 Topography

#### *Existing Conditions*

The lowest elevation of the project area is recorded at approximately 500 ft above msl, along Kalihi Stream. Kalihi Stream runs through a steep-sided channel in places nearly 40 ft deep. The site slopes up to approximately 1,400 ft above msl along the top of Kamaikai Ridge. The lower portion of the site is relatively level, gently sloping land and is where most of the facilities to support program operations at Ho'oulu 'Āina are and will be located. Existing facilities in the mauka portion of the park site are located on a relatively level, gently sloping area ranging from approximately 640 to 680 ft in elevation. Extending beyond the facilities located in the mauka portion of the site, the steep terraneous conditions extending towards the top of Kamaikai Ridge is covered with vegetation mostly comprised of nonnative vegetation. *Figure 3.1* provides a contour map showing the topographic conditions of the park site.

#### *Anticipated Impacts and Proposed Mitigation*

The proposed master plan update will not have any significant impacts to the overall topography of the park site. Modifications to site topography are addressed under *Section 3.3 Soils and Grading*.

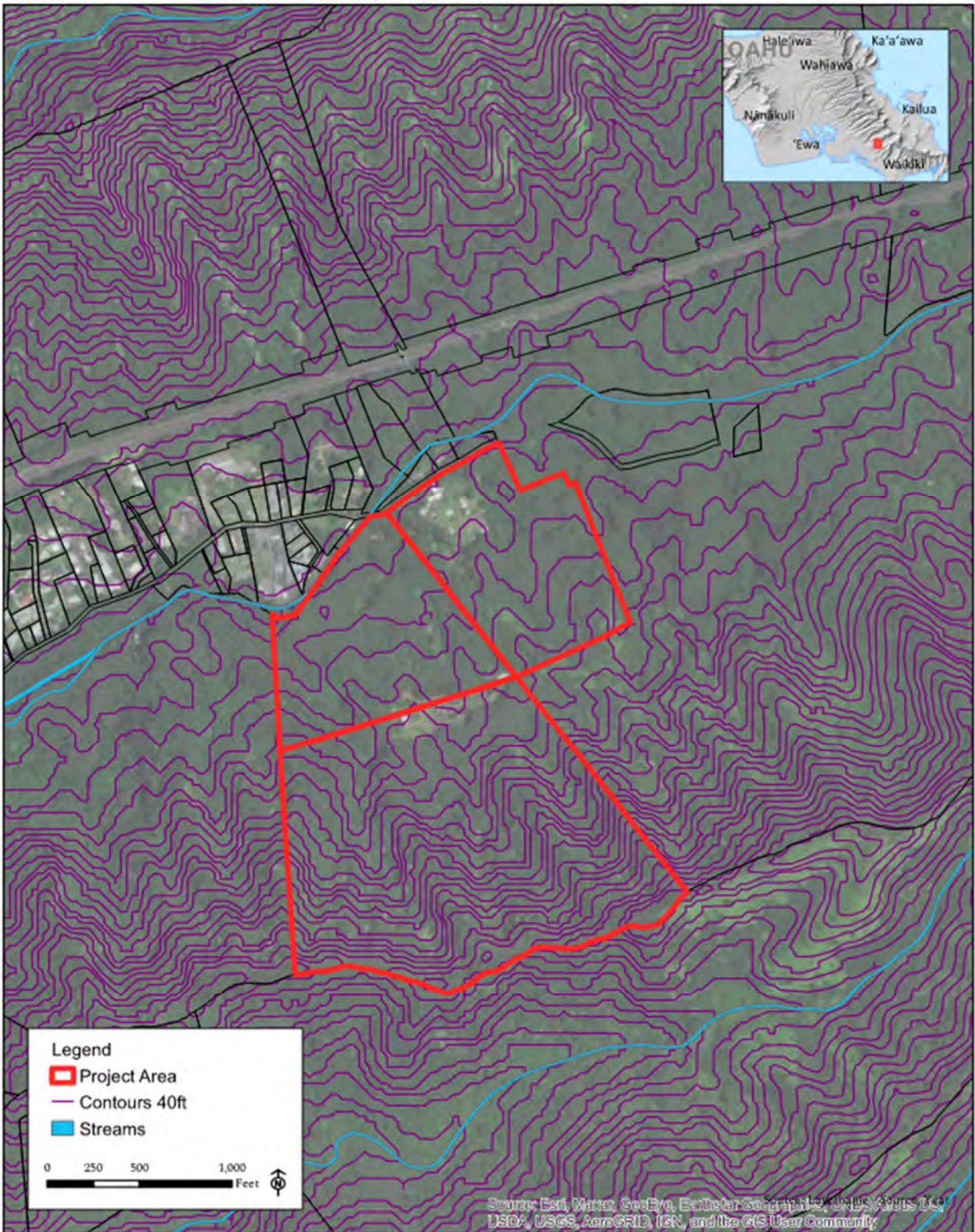


Figure 3.1

Topography

### 3.3 Soils and Grading

#### *Existing Conditions*

The project site is comprised of two soil series. The lower portion of the park is mainly comprised of soils within the Lolekaa Series, whereas Rough Mountainous Land covers the mauka portion extending towards the top of Kamañaki Ridge (*Figure 3.2*). The following discussion provides a brief description of the soils covering the site.

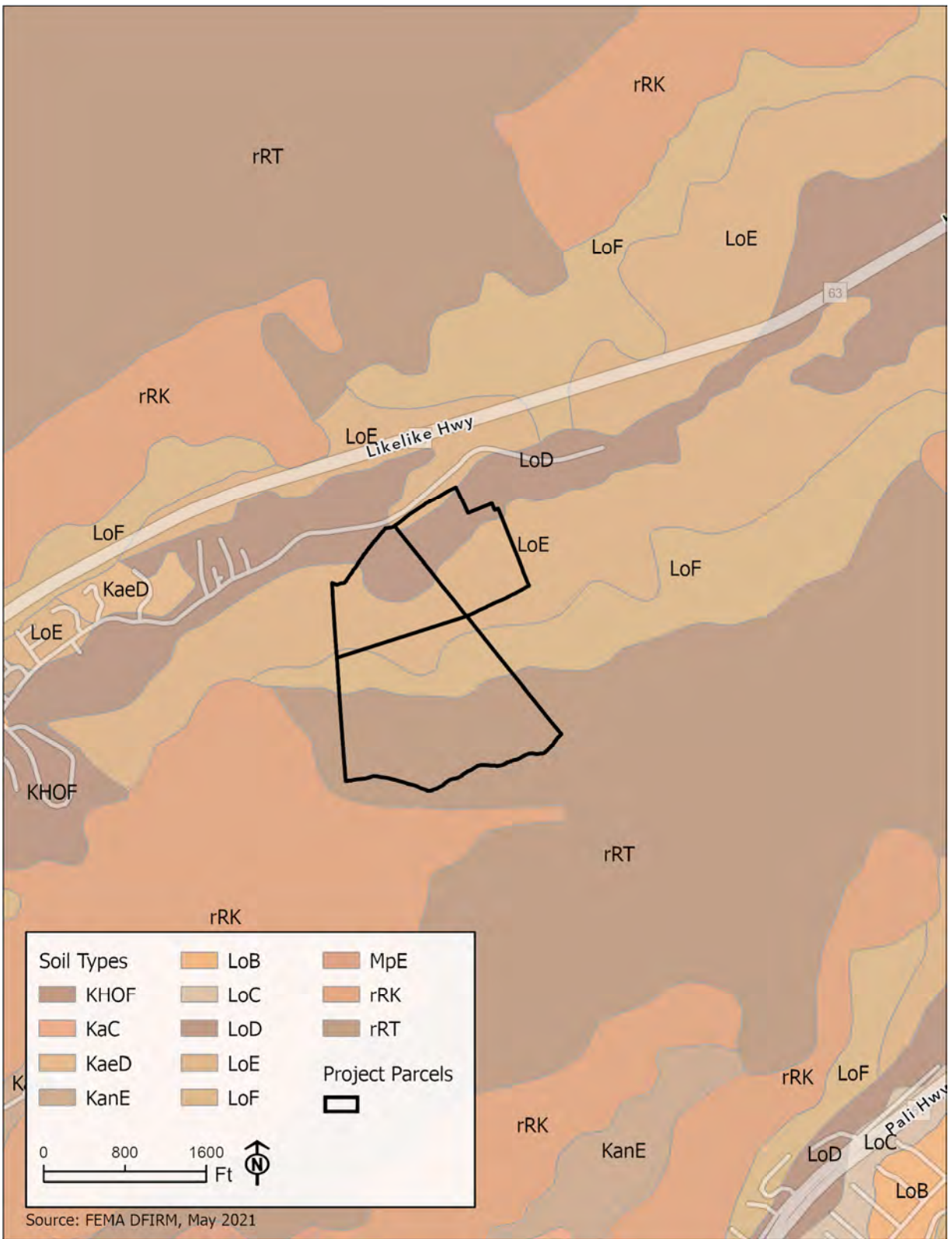
- Lolekaa Silty Clay, 15 to 25 percent slopes (LoD) – This soil occurs on the side slope of terraces and along drainageways. Runoff is medium and erosion hazard is moderate. Lands covered with this type of soil are suitable for pasture.
- Lolekaa Silty Clay, 25 to 40 percent slopes (LoE) – This soil occurs along drainageways and on fans adjacent to the Koolau Range. Runoff is medium to rapid, and the erosion hazard is moderate to severe. This soil series is also suitable for pasture.
- Lolekaa Silty Clay, 40 to 70 percent slopes (LoF) – This soil occurs along drainageways and on fans adjacent to the Koolau Range. Runoff is rapid and the erosion hazard is severe. Lands covered with this type of soil are suitable for pasture.
- Rough Mountainous Land (rRT) – This land covering may be found in mountainous areas across the State of Hawai'i and consists of very steep land broken by numerous intermittent drainage channels. This land covering is typically used for water supply, wildlife habitat, and recreation. The natural vegetation consists of ohia, false staghornfern, treefern, yellow foxtail, lantana, kukui, and puakeawe.

#### *Anticipated Impacts and Proposed Mitigation*

Topography of the site will remain relatively unchanged as major grading work is not anticipated. However, minor grading work is planned for the lower portion of the park and a Grading Permit from the City will be obtained before construction activity begins. Short-term construction related activity to restore and construct the planned facilities will be mitigated by practicing strict erosion control and dust control measures, particularly those specified in the following:

- City Grading Ordinance; Revised Ordinances of Honolulu Chapter 14-13 Provisions for Grading, Soil Erosion & Sediment Control
- State of Hawai'i, Department of Health (DOH), Water Quality Standards, Chapter 11-54
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Erosion and Sediment Control Guide for Hawai'i
- National Pollution Discharge Elimination System (NPDES) permit

Construction BMPs will be implemented to mitigate potential adverse environmental impacts that may occur as a result of the proposed master plan update. During construction, contractors will utilize erosion control and land-based sources of pollution barrier measures, which may include sediment traps, silt fences, dust fences, stabilized construction entrances, and truck wash-down areas, as appropriate to manage sediment discharge.



**Figure 3.2**

**Soil Classifications**  
 Source: U.S. Department of Agriculture Soil Conservation Service



The Koa 'Āina program provides opportunities for volunteer members to engage in reforestation efforts throughout the park. KKV has been managing reforestation efforts throughout the park site since becoming a lessee of the site and has adopted Best Management Practices (BMPs) and mitigation measures to minimize soil erosion. Mitigation measures includes organic methods of soil retention, strategic planting to maximize hydro retention, and restoring native habitats. KKV will continue to employ mitigation measures as reforestation efforts continue. In the long-term, restoring native plant species through the Koa 'Āina program will improve the health and fertility of soils, and thereby reduce runoff and erosion rates and improve rainfall absorption into ground water aquifers, which will be beneficial to the Kalihi Valley watershed. The proposed master plan update is not anticipated to significantly impact existing soil conditions or topography of the project site.

### **3.4 Drainage and Hydrology**

A *Preliminary Infrastructure Assessment for Ho'oulu 'Āina* was prepared by G70 in December 2021 and is attached in *Appendix A*.

#### ***Existing Conditions***

The project site gently slopes from the southern property line along Kalihi Stream at approximately 500 ft above msl to the top of Kamaikai Ridge at approximately 1,400 ft above msl. Immediately above the stream channel, much of the project site is relatively level, gently sloping land. Portions within the site have been graded into wide terraces or excavated during the period when the commercial nursery mined the topsoil throughout the site.

Runoff at the project site appears to flow over land or through gullies and Kalihi Stream. Two flood control ditches run parallel to Kalihi Stream in the south-west and north-east direction and feed into a gully running perpendicular to Kalihi Stream. The gully discharges runoff on the northern side of the park.

#### ***Anticipated Impacts and Proposed Mitigation***

The proposed master plan update is not anticipated to adversely affect ground or surface water resources. As previously discussed, a Grading Permit from the City will be obtained, and contractors will adhere to requirements under the permit to minimize potential construction related impacts. Additionally, an NPDES Construction Stormwater permit will be obtained. Construction, grading and drainage plans will be submitted to appropriate agencies for review and approval. The requirements of the approved NPDES permit will be adhered to during construction.

Construction BMPs and land-based sources of pollution (LBSP) barrier measures will be utilized if there is the possibility for sediment discharge into nearby waters or drainageways (e.g. any site where there will be excavation, grading, or sediment/pollutant producing activities). Construction BMPs and LBSP may include sediment fences, silt screens, bags, environmental socks, and petroleum absorption diapers that limit the amount of sediment to the maximum extent practicable.

The proposed master plan update is not anticipated to increase erosion and runoff from the project site that may impair nearby waterways. Staff members will continue to implement mitigation measures including organic methods of soil retention, strategic planting to maximize hydro retention, and restoring native habitats when removing and restoring native plant species through the Koa 'Āina program. The proposed master plan update will not alter existing drainage patterns and will improve ground water absorption rates.

## 3.5 Natural and Manmade Hazards

### *Existing Conditions*

#### Hurricanes and Tropical Storms

Hurricanes and tropical storms are both categorized as tropical cyclones, which are warm-core storms that originate over tropical waters with well-defined centers of closed surface wind circulation. A hurricane is a tropical cyclone which sustains surface winds of 64 knots (74 mph) or more. Tropical storms are categorized as an organized system of strong thunderstorms with defined circulation and maximum sustained winds of 39 to 73 mph (National Oceanic and Atmospheric Administration [NOAA], 2015).

Hurricanes are considered to be relatively rare events in the Hawaiian Islands. Records show that strong wind storms have struck all major Hawaiian Islands. The first officially recognized hurricane in Hawaiian waters was Hurricane Hiki in August 1950. Since that time, five hurricanes have caused serious damage in Hawai'i: Nina (1957), Dot (1959), 'Iwa (1982), Estelle (1986), and 'Iniki (1992).

However, with rising global temperatures, Hawai'i is expected to experience a higher incidence of tropical storm events. In most recent history, Tropical Storm Olivia made landfall on Maui and Lāna'i in 2018, causing considerable flooding, power outages, and road and school closures.

#### Earthquakes

Based on the 2015 United States Geological Survey (USGS) International Building Code (IBC) Seismic Design Map, Ho'oulu 'Āina could experience up to 0.15 earthquake ground motion accelerations (g-force). This represents the lower limits of probable force experienced by the island of O'ahu during a seismic event.

#### Flooding and Tsunami Inundation

Ho'oulu 'Āina is located in Flood Zone X (Areas determined to be outside the 500-year flood plain) and D (Possible but undetermined flood hazard) (*Figure 1.6*).

The sudden displacement of the ocean floor (earthquakes), landslides, or volcanism can generate tsunamis, which are a series of waves that can reach speeds of up to 600 mph. Upon reaching a coastline, a tsunami can become a wall of water reaching heights of 30 ft or more and capable of moving inland several hundred feet. Known major tsunami events in Hawai'i include the areas of East Hawai'i (1946, 1960, 1975) and North Shore O'ahu (1952, 1957).

Based on the Hawai'i Emergency Management Agency Tsunami Evacuation Zones map, Ho'oulu 'Āina is located within the Safe Zone. This designation indicates Ho'oulu 'Āina is at least 100 feet away from inland waterways and marinas connected to the ocean.

### Wildfires

The Hawaiian Islands are also vulnerable to wildland fires (especially during the summer months, from prolonged drought and/or high winds). The greatest danger of fire is where wildland (trees and brush) border urbanized areas, also known as the wildland-urban interface (WUI). Overgrown vegetation close to homes, pockets of open space within subdivisions, and an increase of non-native high fire-intensity plants around developed areas pose increasing threats to commercial, community, environmental, and residential resources. A great majority of wildfires are human-caused (intentionally caused or by negligence) and often start along roadsides. Wildfires can and also do occur naturally.

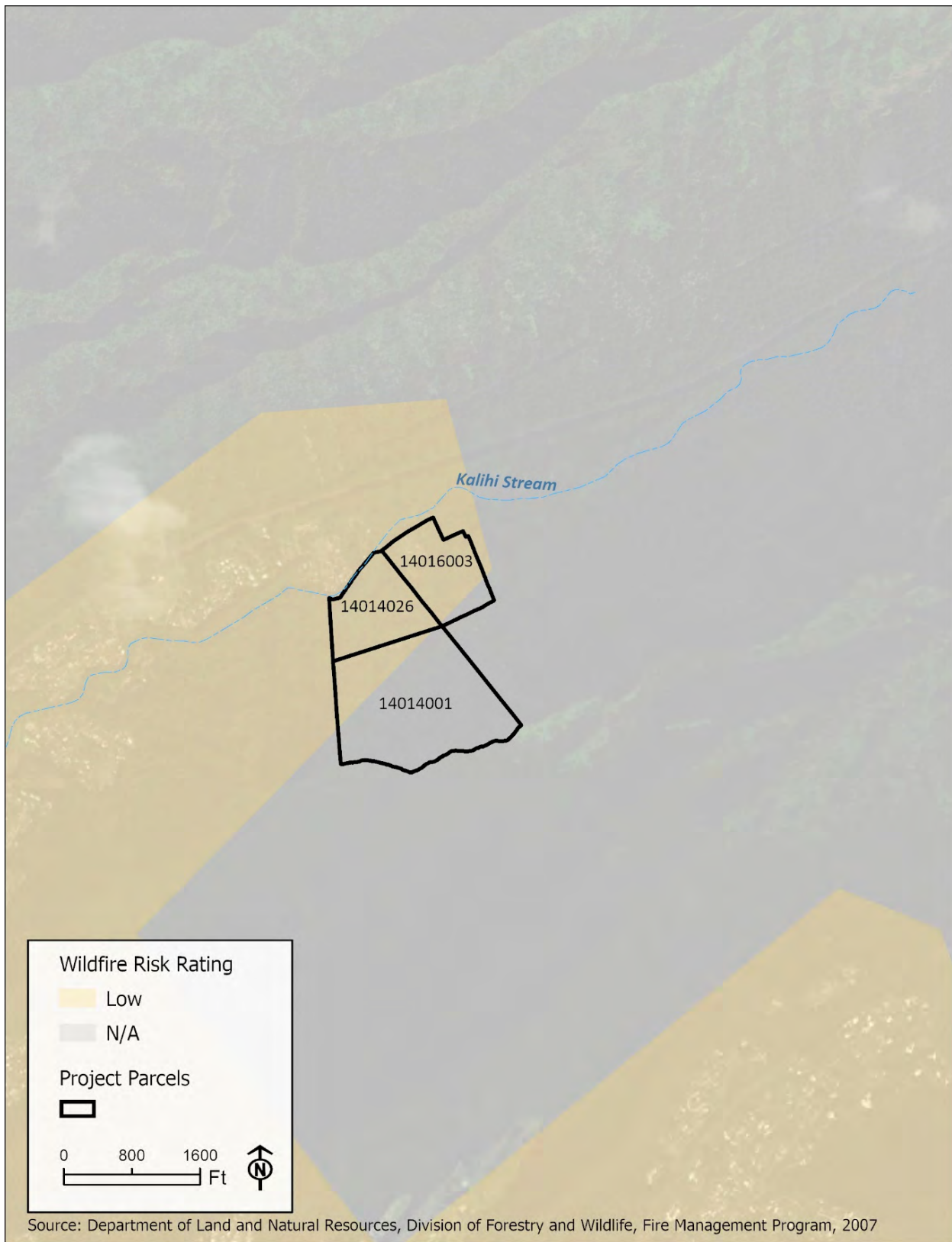
In compliance with the guidelines developed by the National Association of State Foresters, the DLNR Division of Forestry and Wildlife (DOFAW) identified at-risk wildland-urban interface communities throughout Hawai'i and rated each community's risk from wildland fires. According to DOFAW's risk rating of wildland fires, the project site is considered Low Risk for wildfires (*Figure 3.3*). The project area falls within Honolulu Fire Department's (HFD) Primary/DOFAW Co-op Response Area (*Figure 3.4*).

### Climate Change and Sea Level Rise

Rapid anthropogenic climate change is a well-established fact within the scientific community. A 2013 study by a University of Hawai'i (UH) team of researchers predicts that tropical regions will experience drastically warmer climates by the year 2047. As a result of climate change, oceans are warming and acidifying, ice sheets and glaciers are melting, and sea levels are rising.

In addition to rising temperatures, sea level rise is a notable concern for coastal communities. Sea level rise has historically driven shoreline changes throughout the Hawaiian Islands. The global annual sea level rise averaged over the last century was roughly two millimeters, with previous studies indicating that this rate is now approaching three millimeters and may accelerate in the coming decades. According to the 2017 Hawai'i Sea Level Rise Vulnerability and Adaptation Report, the sea level in Hawai'i has increased at a rate of 0.6 inches or more each decade over the past century. While predicting future sea level rise is challenging because of unknown parameters, research shows that global mean sea level may rise approximately one foot by mid-century and 2.5 to 3.2 feet by 2100, with some studies showing a possible rise of up to 6 feet. According to recommendations provided in the 2017 report, an appropriate planning target to use in the design of future projects within the exposure area would be 3.2 feet. It is also practical to expect that a hurricane will make direct landfall in Hawai'i under conditions of higher sea levels and that tsunamis will continue to arrive at Hawaiian shores.

According to a 2014 UH Sea Grant College Program report titled, *Climate Change Impacts in Hawai'i – A Summary of Climate Change and its Impacts to Hawai'i's Ecosystem and Communities*, Hawai'i is experiencing climate change impacts in unique ways. It will be increasingly important to focus on the localized impacts of climate change and sea level rise to adequately understand and prepare for the changes to come.



**Figure 3.3**

**Wildfire Risk Rating**

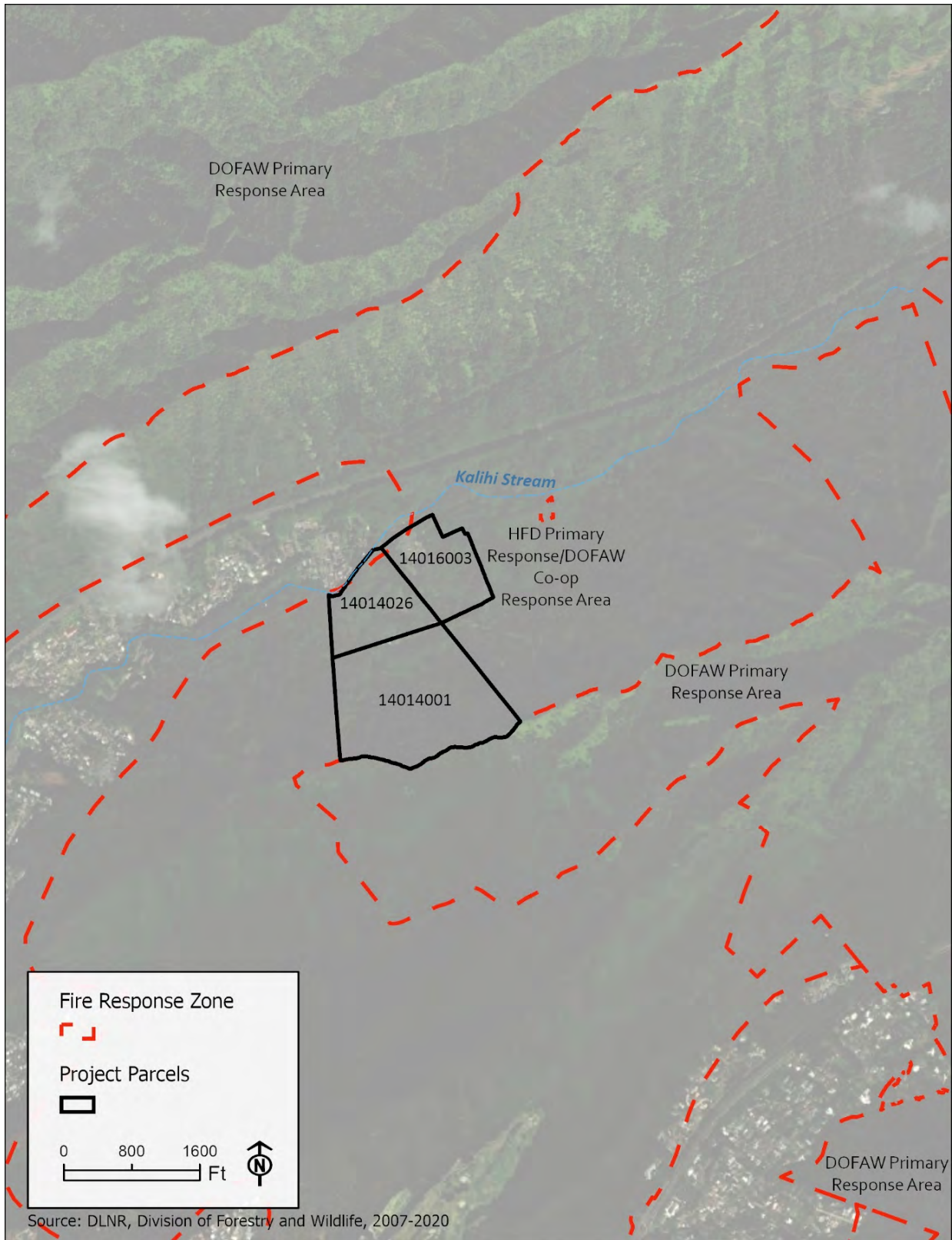


Figure 3.4

Fire Response Zone

## ***Anticipated Impacts and Proposed Mitigation***

### ***Hurricanes and Tropical Storms***

The effects of past storm events have caused minimal damage to the park site. The future threat of hurricanes at the site cannot be calculated, although the frequency of hurricane threats may increase with climate change and warming ocean waters. When a hurricane is approaching a coastal location, early evacuation is usually standard mitigation to address the possibility of accompanying storm surge with high winds. The National Weather Service provides guidance and issues a hurricane watch when a storm is expected to make landfall within 36 hours. A hurricane warning is issued when landfall is likely within 12 to 24 hours. Ho'oulu 'Āina will take cautionary measures in the event a hurricane warning is issued to ensure staff and volunteer members are safe.

### ***Earthquakes***

The planned facilities be constructed in compliance with regulatory controls to meet City and County of Honolulu Building Code requirements as appropriate to IBC seismic probabilities.

### ***Flooding and Tsunami Inundation***

Due to park's inland location and elevation at over 100 ft above msl, it is unlikely the park site will be directly impacted by a tsunami event. Furthermore, the Hawai'i Sea Level Rise Viewer (PacIOOS 2020) indicates that the park is not located within an area exposed to chronic flooding with 3.2 feet of sea level rise. The flood zone designation for the site indicates there is potential for moderate to high-risk flooding, although the probability for such flooding event has not been determined. In the event of a tsunami or flood, Ho'oulu 'Āina will exercise evacuation and safety guidance procedures.

### ***Wildfire***

The wildfire risk rating for the project area is Low and HFD has been identified as a primary responder in the event a fire breaks out. DOFAW is a cooperator if needed. KKV will carry out practices including the removal of leaf litter and other debris that accumulate around buildings and regular lawn mowing to reduce the spread of a wildfire. Restoration of the roadway leading up to the mauka nursery provides a firebreak on-site. Restoring the roadway in the lower portion of the park will also provide another firebreak on-site. Additionally, through the Koa 'Āina program, reforesting the park with native drought-tolerant plants will reduce the risk of wildfire ignition and spread. Staff members have successfully restored and replanted banana or mai'a (*musa*) throughout the park providing a well-irrigated plant to reduce the risk of wildfire. The proposed master plan update is not anticipated to increase the demand of fire protection services in the area.

### ***Climate Change and Sea Level Rise***

Although the park is not located within an area that is anticipated to be substantially impacted by 3.2 ft of sea level rise, the impacts of climate change may increase the difficulty to cultivate crops. Longer periods of extreme heat and drought could threaten crop yields. Additionally, climate change may increase the prevalence of harmful pests and parasites. Changes in temperature and precipitation may require changing the types of crops planted, dates of planting and harvesting, and pest management practices. The update to the master plan is not anticipated to contribute to additional greenhouse gas emissions associated with long-term climate change. Rather, updating the master plan will continue to allow restoration efforts at the park, improving the health of the forest, which is vital in mitigating climate change.

## 3.6 Flora and Fauna

A *Botanical Reconnaissance Survey of Kalihi Valley Nature Park* was conducted by Hawai'i Natural Heritage Program in 2005 and is attached in *Appendix B*. The following section provides a discussion of the Botanical Survey and land management that has occurred since the report was completed.

### *Existing Conditions*

#### Flora

There are no known rare or endangered plant species that have been identified at the park site. Oral histories documenting agricultural practices in Kalihi Valley along with remains of dry-stack stone irrigation and terracing provide evidence of agricultural productivity in Kalihi Valley. Following a period of agricultural productivity, grazing animals such as cows were introduced, and much of the landscape was converted into grasslands. Further, the commercial nursery that operated in the mauka portion of the park introduced exotic species including albizia, rose apple, bamboo, and royal palms that grew in abundance and became the dominant landscape covering the park.

The lower portion of the park, defined by areas below approximately 800 ft msl, is predominately covered by a forest canopy comprised of miconia (*Miconia calvescens*) and albizia (*Falcataria Moluccana*). Other common alien trees include rose apple (*Syzygium jambos*), gunpowder tree (*Trema orientalis*), black bamboo (*Phyllostachys nigra*), koka (*Bischofia javanica*), strawberry guava (*Psidium cattleianum*), common guava (*Psidium guajava*), shoebuttan ardisia (*Ardisia elliptica*), ironwood (*Casuarina equisetifolia*), fiddlewood (*Citharexylum caudatum*), kukui (*Aleurites moluccana*) and Formosan koa (*Acacia confusa*). Species introduced from Polynesia, includes kamani (*Calophyllum inophyllum*), ti (*Cordyline fruticosa*), 'ohi'a 'ai, (*Syzygium malaccensis*), coconut (*Cocos nucifer*), and hau (*Hibiscus tileaceus*).

The mauka portion of the park, defined by areas located above approximately 700 ft msl, is predominantly covered by a forest canopy comprised of invasive tree species. However, native plant species including 'ohi'a (*Metrosideros* spp.), koa (*Acacia koa*), hapu'u pulu (*Cibotium chamissoi*), 'ie'ie (*Freycinetia arborea*), papala kepau (*Pisonia umbellifera*), mamaki (*Pipturus albidus*), lama (*Diospyros sandwicensis*), alah'e (*Psydrax odorata*), and uluhe (*Dicranopteris linearis*) have been identified within the upper portion of the park.

Since becoming a lessee of the site, staff and volunteers have engaged in efforts to remove invasive plant species and restore native plant species (*Figure 2.5*). Preparation of new planting areas for native plant species includes weed removal and suppression. BMPs and mitigation measures including organic methods of soil retention, strategic planting to maximize hydro retention, and restoring native habitats are implemented to minimize the potential for soil erosion. Most notably, since the Botanical Survey was conducted, the noxious invasive Miconia has been successfully removed and eradicated from the park. Staff members collect and propagate seeds at the mauka nursery for replanting of native plant species. Native plant species are planted throughout the park based on the management goals for different zones at the property and on the availability of funding, seedlings and volunteers. Plants are categorized by ecosystem function, as under-story, mid-story and upper-story depending on size. Utilizing this method for planting allows for flexibility in species planted, based on which plants are available. Staff and volunteers have successfully restored over 10 acres of the park with native plant species.

The mauka portion of the park known as the Wao Akua or realm of the gods contained valuable resources for canoes and other woodworking activity along with feathers for capes and other items for ali'i. Additionally, the upland forest area served as an important resources acting as a vast sponge absorbing rain water to recharge the groundwater aquifer. The introduction of invasive plant species that rapidly grew throughout the park site displaced native species, impacted recharge rates and, increased soil erosion. KKV remains committed to restoring and protecting the Wao Akua by identifying and protecting existing native species and ecosystems and removing invasive species such as banyan and albizia, then holding the area in kalo or sweet potato until native plant species can be planted when the native and endemic understory is established. Invasive plant species removed from the park site are processed and repurposed on-site as recommended in the *Botanical Reconnaissance Survey of Kalihi Valley Nature Park (2005)*.

### Fauna

The lower portion of the park is not known to provide a habitat for any native animal species. However, the higher slopes of the Ko'olau Mountain Range, encompassing the mauka portion of park is designated as a critical habitat for the Hawaiian forest bird, 'Elepaio (*Chasiempis ibidis*) (Figure 3.3). The species is found in a variety of tall, closed canopy forest types with dense understory, most often in riparian forest in valleys, ranging from 100 meter to 850 meter (325 feet to 2,775 feet) in elevation. To date, no 'Elepaio sightings have been recorded by staff members at the park. As staff and volunteers continue to restore native plant species, there is hope that the 'Elepaio may return to the area.

Alien animal species that are known to inhabit the park site include a wide range of introduced bird species such as thrushes, doves, mynahs and finches. Feral pigs, mongoose, rats, and wild chickens are known to visit and feed on fallen fruit and roots. The Australian Brush-Tailed Rock Wallaby is known to inhabit the forest area of Kalihi Valley (DLNR, 2020). The Australian Wallaby is not native nor considered invasive to Hawai'i, however they are protected by state law. Furthermore, the Australian Wallaby has been documented at the park.

### ***Anticipated Impacts and Proposed Mitigation***

The proposed master plan update is not expected to adversely affect flora and fauna resources of Kalihi Valley. Restoring native plant species through the Koa 'Āina program will continue improve the ecological integrity of Kalihi Valley as invasive plant species, which pose a threat to the watershed, are removed. Restoring native plant species will help capture water, recharge the groundwater aquifer and reduce soil erosion and runoff. BMPs and mitigation measures including organic methods of soil retention, strategic planting to maximize hydro retention, and restoring native habitats will be employed when restoring native plant species to mitigate the potential for soil erosion. The planned facilities will provide necessary support for the Koa 'Āina program to continue restoration of native plant species. Additionally, the planned facilities will provide spaces for the continuation of processing and repurposing of invasive plant species where volunteers will be able engage in hands on efforts to repurpose invasive plant species. The planned facilities will be compatible with the natural landscape. Existing native plant species will continue to be monitored and staff members will continue to maintain the green space fronting Kalihi Street to ensure tree branches do not damage neighboring residences. The proposed master plan update is not expected to negatively affect flora resources at the park site.



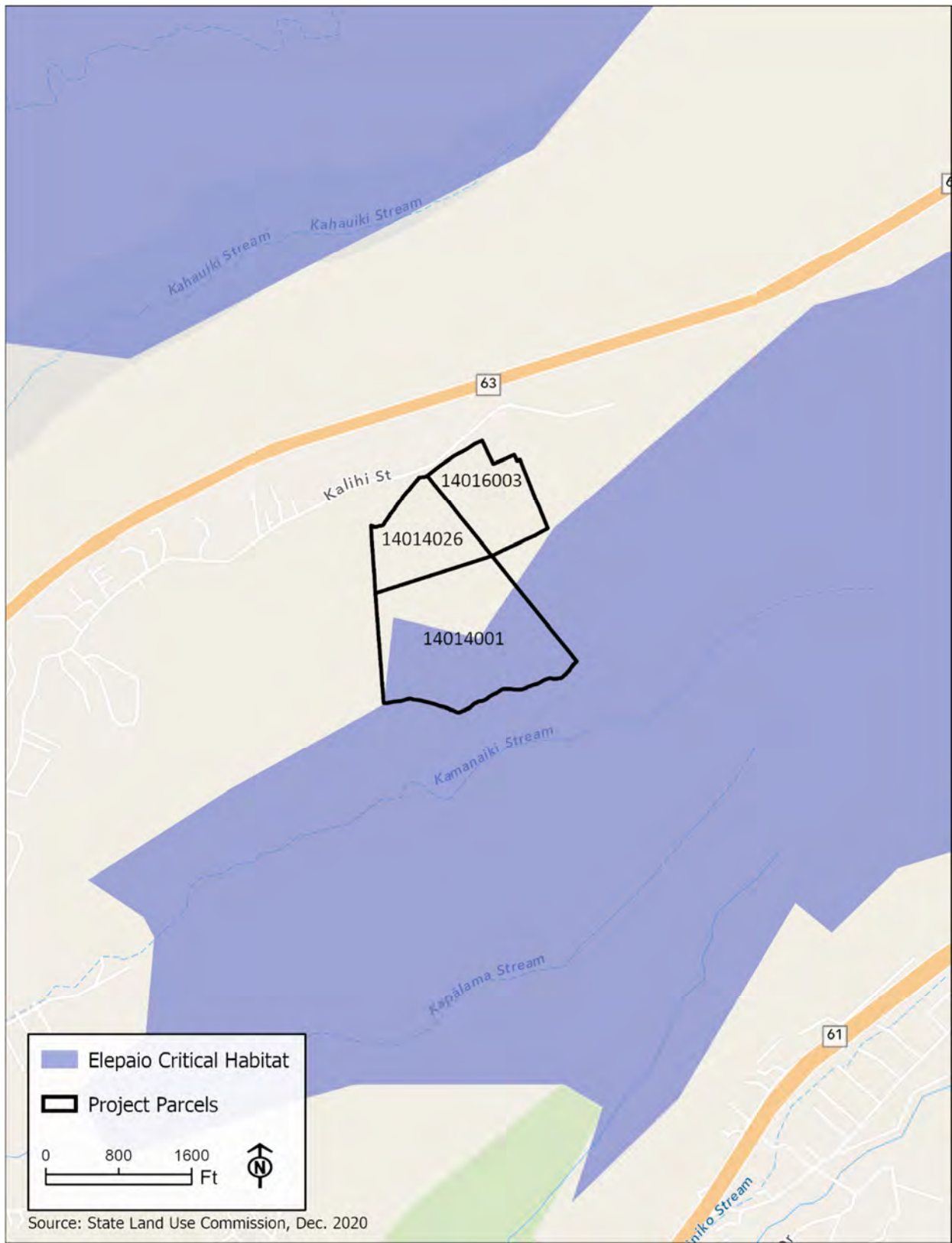


Figure 3.5

'Elepaio Critical Habitat

The U.S. Fish and Wildlife Service (USFWS) and DLNR DOFAW were consulted with to ensure the proposed master plan update will not adversely affect the designated critical habitat for the 'Elepaio and its potential recovery. The planned facilities will be constructed within the existing footprints of old facilities and will not require major clearing in the upper forest area. Clearing of vegetation will mainly include that which is covering existing foundations in varying states of disrepair. The planned facilities are located outside the designated critical habitat, and it is not anticipated the planned improvements will pose threats to the 'Elepaio or its Critical Habitat designation. Restoring native plant species within the mauka portions of the park are anticipated to improve the mauka area and provide a suitable habitat for the 'Elepaio to return to Kalihi Valley.

The State listed Hawaiian Hoary Bat or 'Ōpe'ape'a (*Lasiurus cinereus semotus*) could potentially occur in the vicinity of the project area and may roost in nearby trees. Although the 'Ōpe'ape'a has not been identified at the project site, per the 2015 Hawai'i State Wildlife Action Plan (2019), the 'Ōpe'ape'a is known to roost in native and non-native vegetation ranging from 1 to 9 meters (3 to 29 feet) above ground level. The 'Ōpe'ape'a population is threatened by habitat loss, pesticides, collisions with structures, and roost disturbance. Although the planned facilities are not located in the upper portions of the mauka forest area and therefore, will not require the clearing of dense vegetation that may provide a suitable roosting area for the 'Ōpe'ape'a, clearing of trees greater than 4.6 meters (15 ft) tall at the site should be avoided between June 1 through September 15 to avoid disturbance to bats during their birthing and pup rearing season. It is not anticipated the proposed master plan update will adversely affect the 'Ōpe'ape'a. However, DOFAW will be consulted if clearing of trees over 15 ft needs to occur during this period, or if the 'Ōpe'ape'a is identified at the site.

Waterbirds such as the Hawaiian Stilt (*Himantopus mexicanus knudseni*) have the potential to occur in the vicinity of the project area. It is against State law to harm or harass these species. If any of these species are present during construction activities, then all activities within 100 feet (30 meters) should cease, and the bird should not be approached. Work may continue after the bird leaves the area of its own accord. If a nest is discovered at any point, the O'ahu DLNR Division of Forestry and Wildlife (DOFAW) Office should be contacted.

USFWS also identified the potential for the following seabirds to occur within the vicinity of the project site: Band-rumped Storm-petrel Hawai'i DPS/'akē'akē (*Oceanodroma castro*), Hawaiian Petrel/'ua'u (*Pterodroma sandwicensis*), Newell's Shearwater/'a'o (*Puffinus auricularis newelli*), and Wedge-tailed Shearwater/'ua'u kani (*Ardenna pacificus*). Artificial lighting can adversely impact seabirds that may pass through the area at night by causing disorientation. This disorientation may result in a collision with manmade structures or the grounding of birds. To mitigate the potential downing of seabirds, construction activity for the proposed master plan update will be limited to day time hours to mitigate the need for nighttime lighting. Permanent lighting installed at the park will follow guidance related to seabird-friendly light styles to protect seabirds.

Although the Australian Brush-Tailed Rock Wallaby is not native nor considered invasive to Hawai'i, the Australian Wallaby is protected by state law. If an Australian Wallaby is found to be roaming around the park, the DLNR DOFAW will be contacted to ensure the Australian Wallaby is in good health and will return the Wallaby to the forest area.

### 3.7 Cultural Resources

A Cultural Impact Assessment (CIA), including archival research and ethnographic surveys of Kalihi Valley residents was conducted in 2005 by Francine Palama, University of Hawai'i at Mānoa in support of the original EA and is attached in *Appendix C*. The following section provides a discussion of findings from the CIA.

#### *Existing Conditions*

As previously discussed in *Section 2.1*, Kalihi Valley holds an abundance of cultural and historical significance with legends and myths associating the home of Papahānaumoku and Wākea in Kalihi Valley. Furthermore, several heiau identified and dry-stack stone irrigation reflect Kalihi's agricultural past.

At the time of the Māhele, when land was first converted to private ownership, Kalihi Valley began to transform from cropland to land for grazing cattle. Land Commission Award (LCA) records indicate that there were over 100 awards recorded within the ahupua'a of Kalihi. The Buke Māhele (1848) which holds records of LCAs identifies LCAs encompassing Ho'oulu 'Āina were awarded as Konohiki awards, lands claimed and granted to ali'i, and Kuleana awards, lands claimed and awarded to the maka'āinana (*Table 3.1*). The 'ili 'āina of Maluwai was awarded to Victoria Kamāmalu and portions within the 'ili 'āina of 'Ouaua were awarded to Kaunuohua and Keawepoepoe (*Figure 2.2*).

LCA No.	Awardee	'Āpana (Parcel)	'Ili 'Āina	Location	Type
7713	Victoria Kamāmalu		Maluwai	Majority of Ho'oulu 'Āina, central and west	Konohiki
6450	Kaunuohua (for Moehonua)	8	'Ouaua	Portion of northeast corner of Ho'oulu 'Āina	Konohiki
1049	Keawepoepoe (for Keaka)	2	'Ouaua	Portion of northeast corner of Ho'oulu 'Āina	Kuleana
8559	Charles Kanaina	3	Ka'ie'ie	Alongside and west of Ho'oulu 'Āina	Konohiki
803	Alexander Adams	12	Kioi	Alongside and north	Not Kuleana
7175	Kapule	1, 2	Kekuapalau & Pohakaa	Alongside and north of Ho'oulu 'Āina	Kuleana

Testimonies from LCA records state claims of farming and agriculture occurring in Kalihi Valley. The portion of land awarded to Keawepoepoe (LCA No. 1049) was recorded as farmland. Furthermore, the LCA awarded to Kapule (LCA No. 7175) was described as lo'i and kula lands. Although such agricultural features may not have been extensive, taro cultivation, including terrace agriculture, may have occurred where Ho'oulu 'Āina is currently located.

As part of the CIA, individuals with traditional or oral knowledge of natural and cultural resources of Kalihi Valley were contacted for interviews. Additionally, individuals with a range of skills, knowledge and interests were sought to revive and re-establish the traditional cultural and religious customs and practices in the project area.

In an interview with Kumu Hula (dance teacher) Colleen Aiu, who is the daughter of the late and great Kumu Hula Ma'iki Aiu, she recalled the story her Aunty Sarah Kailikea shared when she journeyed with Aunty Alice Holokai through Wilson Tunnel. As they were making their way to the tunnel, Aunty Sarah saw a number of people with their pahu drums, and as they continued to drive through the tunnel, Aunty Sarah heard the drums beating until about halfway through the tunnel when the drum beats stopped. Later, Aunty Sarah and Aunty Alice told Tutu Kawena what Aunty Sarah saw and heard, and Tutu Kawena shared that “long ago, there was a hula mound and hula gatherings in upper Kalihi Valley. It is the hula maiden of Kalihi Valley, Kapo or Kapo-ula-kina'u, Laka, and others. She is the daughter of Haumea.”

In another interview with Marguerite Kealanahale, she spoke of her husband's stories visiting Kalihi Valley. Her husband, Kahu (Dr.) Edward Iopa Kealanahale would frequently visit Kalihi Valley to kūkā kūkā (consult) with the kupuna as he was taught in the days of old by Mahelani Lono, the last of the kahuna trainer from Waipio Valley on Hawai'i Island. When Ms. Kealanahale would drop her husband off at the end of Kalihi Street he would carry water and Hawaiian rock salt. He would be in prayer for a total of three nights and three days. Before entering the site, he would ask for permission from the kupuna to enter and cleanse himself (asking for forgiveness or ho'oponopono) and giving thanks before entering and leaving a sacred site. She recalls her husband speaking of Kalihi Valley filled with women sprits and it belonged to the hula maidens of the valley and finding the pōhaku (stone) that was special to the hula goddess.

Ms. Toni Jean Kuulei Alatan, a former resident and homeowner of 3670 Kalihi Street and the granddaughter of Colonel Charles Marek, spoke of her experience growing up in Kalihi Valley. Growing up, her grandmother told her “Don't be afraid, you're *keiki o ka 'āina* – the child of the land and you belong here as long as you're alive, no one will ever harm you.” Adventuring and exploring throughout the back of Kalihi Valley she shared, what her grandmother told her was true. She recounted a time picking waiawī (guava) in the back of the valley. While picking waiawe, she stepped in an area and suddenly everything around her stopped moving. The hairs on the back of her neck stood up and she felt stuck in a cold spot. Looking around, everything else was moving except all that was immediately surrounding her. She ran home, told her grandma what had happened, and her grandma shared an article written by Clarisse Taylor in the Star Bulletin. Clarisse was a writer who wrote about legends and old Hawai'i. One of her books included a story of how the property in Kalihi Valley sits upon a trail of giant walking warriors. Although she didn't specify if they were night marchers, Ms. Alatan believed she somehow stepped in the trail of the walking warriors.

Ms. Alatan also shared a story about the old pump house. Growing up, she and her grandfather would go to get water because their home was located at an elevation that was too high for BWS to service. However, she always felt afraid going up to the pump house. She explained, if someone ventures further left beyond the pump house, there's a little path surrounded by bamboo. The path leads to a stone wall and there's a stake placed just beyond the wall. If someone steps on it, one would understand something really bad happened here. One day, she took a friend up with her, and he shared the energy he felt. He explained, someone died quite some time ago, but the death was violent and for some reason, the energy remained. Additionally, Ms. Alatan shared a guy who used to bootleg in the valley dug a cave, made 'okolehao (liquor distilled from ti root), and lived in a shed near the pump house.

On an adventure with her brother, Ms. Alatan was determined to find a heiau her grandmother spoke about. As they set off, they came across terraces covered by California grass. Removing the grass, rows of terraced walls were uncovered. Returning back home, Ms. Alatan shared what she found with her grandmother, who told her, it was the Hawaiians who built these terraces, which were most likely used as platforms for homes; later, when the Chinese inhabited the area, the terraces were expanded.

Lots of little things happened in Kalihi Valley that hold an abundance of historic significance. However, such lands throughout Hawai'i have been replaced by development and Native Hawaiians have been disproportionately impacted by the loss of connection they had with lands that fed and sustained life. Developing the park for usages other than park uses would affect the environment, safety, health, and culture in a way that could continue to disproportionately impact Native Hawaiian lifestyles and livelihood. The 2005 CIA recommend providing access and opportunities for Native Hawaiians to practice, perpetuate and educate others about their culture through restoring culturally sensitive and environmentally restorative activities and practices to mitigate negative impacts to the park site.

### ***Anticipated Impacts and Proposed Mitigation***

KKV understood the community's vision for the site and the importance the environment played in the health of the community and created educational opportunities through the engagement in 'āina based practices historically carried out by Native Hawaiians and other Pacific Islander populations. Such practices connected Native Hawaiians and Pacific Islanders to place and were indicative to their health. By reconnecting people back to culture, the health of the community improved, and the environment began to heal. KKV has mitigated negative impacts to cultural resources and improved the lives for Native Hawaiians and other Pacific Islander populations, as this park is a driving component of a healthier community in Kalihi Valley.

The proposed master plan update is not anticipated to negatively affect cultural resources of Ho'oulu 'Āina or the greater Kalihi Valley. Rather, the proposed master plan update will support current activities that perpetuate and educate of Native Hawaiian culture, connecting people back to place to heal and improve the health of the community. The planned facilities are intended to support program operations that will continue to preserve, perpetuate, and educate the community of Native Hawaiian culture. By supporting and continuing to provide an environment with opportunities to reconnect and engage in 'āina based restorative efforts, the proposed master plan update will continue to mitigate negative impacts to cultural resources.

## **3.8 Archaeological Resources**

An Archaeological Assessment was completed by Archaeological Consultants of the Pacific, Inc. in 2005 to support the original EA and is attached in *Appendix D*. An Addendum to the 2005 Archaeological Assessment was completed by Nohopapa Hawai'i in 2020 and is included as *Appendix E*. To support the 2022 Master Plan Update, the Addendum to the 2005 Archaeological Assessment completed by Nohopapa in 2020 was updated and is included as *Appendix F*.

Archaeological surveys of Kalihi Valley reflect the area's agricultural history. Most notably, within the ahupua'a of Kalihi Valley, the heiau identified as Ka'ie'ie has been recorded to be located in the 'ili 'āina of Ka'ie'ie, adjacent to the 'ili 'āina of Maluwai where Ho'oulu 'Āina is located. In addition to the Addendum to the 2005 Survey completed by Nohopapa Hawai'i in 2020 and 2022, two archaeological surveys for the site were completed in 1980 and 2005.

In an Archaeological Reconnaissance Survey (ARS) completed in 1980 by Archaeological Research Associates, the survey acknowledged and crafted recommendations using findings presented throughout the survey and took into account the historic significance of Maluwai as a place with an extensive agricultural past. The study identified an “agricultural complex” which has been designated as a State Inventory of Historic Places (SIHP) Site No. 3980 (*Figure 3.6*).

Within the agricultural complex, several archaeological features have been identified including ‘auwai (traditional irrigation ditches), terraces, and retaining walls. The 1980 ARS also noted the two houses that were once occupied, two private nursery operations, paved trails in disrepair, borrow pits and bulldozed house lots, large grassy areas that may have been previously bulldozed or artificially leveled, and abandoned machinery and automobiles, signifying an alteration of land use that were on-going.

In 2005, Archaeological Consultants of the Pacific, Inc. conducted an 80% pedestrian survey of the site, below the 700-foot contour line. Through the course of the pedestrian survey, a total of 11 archaeological sites, each containing several features within each site, were identified. Site and feature numbers were identified as temporary designations as the location of each archaeological site was approximated. Due to the scope of work, the Archaeological Assessment (AA) recommended the landowners preserve the identified archaeological sites given the need for further investigation. The 2005 AA also recommended subsurface testing through an Inventory Level Survey to determine the age of sites and to assign each site a SIHP number.

An Addendum to the 2005 Archaeological Assessment was conducted by Nohopapa Hawai‘i in 2020 and revised in 2022 in support of the master plan. The Updated Addendum to the 2005 Archaeological Assessment integrated cultural, historical and archaeological data that has documented Kalihi Valley as a wahi pana. Findings from the 2022 Archaeological Assessment are presented in the following section.

### ***Existing Conditions***

Findings from the 2005 AA along with planning efforts undertaken by Ho‘oulu ‘Āina were compiled to provide an approximate location of the 11 identified archaeological sites (*Figure 3.6*). The remnants of infrastructure to support kalo cultivation including ‘auwai, lo‘i, possibly a mānowai or po‘owai, and possibly cleared or platformed areas for pā hale are reinforced by findings in the CIA, which identified fields and terraces covered by overgrown California grass. Additionally, the ARS completed in 1980 provided further evidence acknowledging extensive kalo cultivation in Kalihi Valley. The 11 identified archaeological sites and features are listed in *Table 3.2*.

As discussed in *Section 2.1*, Kalihi Valley was once intensively cultivated by the Native Hawaiian people. At the time of the Māhele, when land was first converted to private ownership, Kalihi Valley began to transform from cropland to land for grazing cattle. Following the distribution of land under the Māhele, nursery proprietors introduced exotic species such as albizia, rose apple, bamboo, and royal palms to the site. When the City purchased the site and then conveyed to the State Parks Division, the site became an illegal dumping ground. Land uses following the period of agricultural productivity in the pre-contact area may have impacted original and traditional Native Hawaiian cultural sites. However, some of the remnants from uses throughout the post-contact era are now considered and documented as historic sites.



Figure 3.6

Approximate Location of Identified Archaeological Sites  
(Nohopapa, 2022)

Sites 1 and 2 are located right outside the agroforestry area within the northwestern area of the site. Based on archaeological findings, it is believed Site 1 contains features, including stacked walls, mounds, and retaining walls used to divert water, that may be dated back to the pre-contact era. Site 2 is believed to be a “possible historic refuse scatter” that may be related to habitation.

Site 3 contains remnants of the nursery operation and the road used to access the nursery. Features associated with Site 3 date back to the historic times (50 years or older) and were utilized throughout the modern era.

Sites 4, 5, and 7 are identified within SIHP No. 3980. Features within SIHP No. 3980 are believed to have originated from Native Hawaiian agricultural practices. Three series of 'auwai and terraced lo'i kalo fields have been identified in varying stages of disrepair (*Figure 2.3*). Māhele documents, the 1980 ARS and ethnographic interviews included in the 2005 CIA provide supporting evidence of such uses dating back to the pre-contact era.

**Table 3.2 Identified Historic Sites**

Site No.	Source	Feature	Type	Provenance	Function
1	2005 AA (Kouneski et al. 2005)	A	Stream bank retaining walls	Undetermined	Water diversion
		B	Rock walls		Water diversion
		C	'Auwai		Water diversion into stream
		D	'Auwai		Water diversion
		E	'Auwai		Water diversion into stream
2	2005 AA (Kouneski et al. 2005)	N/A	Midden	Historic	Habitation related
3	2005 AA (Kouneski et al. 2005), 2005 CIA (Palama 2005)	Nursery	Historic to Modern	Commercial nursery, road, and habitation	Constructed ~ 1950 and used intermittently through the 1980s
SIHP 3980 (Temp 4,5,7)	1980 ARS (Connoly 1980), 2005 AA (Kouneski et al. 2005), 2005 CIA (Palama 2005)	4.A	Stream bank retaining walls	Traditional Hawaiian	Agriculture and/or water diversion
		4.B-D	Rock mounds		
		4.E	Rock alignment		
		4.F	Terrace & rock mound		
		4.G-K	Terraces		
		4.L-O	Rock mounds		
		4.P	Terrace		
		5.A	Stream bank retaining wall		
		5.B	Terrace		
		5.C	Stone platform		
		5.D	Stream bank retaining wall		
		5.E	Stone dam		
		7.A	Stream bank retaining walls		Possible habitation
7.B	Rock mound				
6	2005 AA (Kouneski et al. 2005)	N/A	Historic House	Historic to Modern	Modern habitation
8	2005 AA (Kouneski et al. 2005)	A	Stone-retained slope	Undetermined	Habitation related
		B	Dilapidated house	Historic	
		C	Pump house		
		D	Well		
		E	Stream bank retaining wall	Undetermined	
9	2005 AA (Kouneski et al. 2005)	N/A	Rock Mound	Undetermined	Boundary/land mark



10	2005 AA (Kouneski et al. 2005)	N/A	Stream bank retaining wall	Undetermined	Water diversion
11	2005 AA (Kouneski et al. 2005)	A	Historic refuse site	Undetermined	Habitation
		B	Rock alignment	Undetermined	Habitation
		C	Historic midden scatter	Undetermined	Habitation

Site 6 was identified as the old Marek residence that was constructed in the 1930s. Since the home was constructed, add-ons were completed throughout the modern period. The home has since been renovated and is now the current Ho'okipa Center.

Site 8 contains four features including a stone-retained slope, a dilapidated house, a pump house, a well, and a mortar stream bank retaining wall. Although the structural integrity of the home has been removed, the concrete foundation of the former home remains. The pump house, well, and stream bank retaining wall have been identified as features to be assessed in future studies.

Site 9 is identified as an ahu constructed of cobbles and a boulder. The location of the ahu is in the forest area within the 'ili 'āina of 'Ouaua. Since becoming a lessee of the site, several other ahu have been preserved and are identified in *Figure 2.6*.

Site 10 is identified as a stream bank retaining wall used to divert water. The construction and age of the stream bank is undetermined as the structure may be interpreted to date back to Native Hawaiian origin, however, similar structures were identified on the opposite side of Kalihi Stream indicating the retaining wall may be related to early construction of Kalihi Street.

Site 11 contains three features including two historic refuse scatters and a stone alignment that is believed to be associated with temporary habitation. In an interview with Ms. Alatan, she explained that a bootlegger once resided at this location. The approximate location of this site is believed to be in the lower portion of the site, within the 'ili 'āina of 'Ouaua, behind the Marek residence.

### ***Anticipated Impacts and Proposed Mitigation***

Since becoming a lessee of the site, staff and volunteers have remained committed to preserving and restoring the historic integrity of Kalihi Valley. *Figure 3.7* presents recommendations for the identified archaeological sites.

The findings in the 2005 AA are consistent with the findings in the 1980 ARS. However, it should be noted that in compliance with the findings from the 1980 ARS, and the findings in the 2005 AA, the 2005 AA and the 2020 Archaeological Assessment Addendum, and Updated Addendum to the Archaeological Assessment should be properly titled. Typically, an Archaeological Assessment is the result of a field investigation that does not find any historical properties. The 2005 report notes that although it is entitled "An Archaeological Assessment" for reasons having to do with nomenclature associated with HRS 6E, the document represents the completion of the initial identification of historic properties.

As previously discussed, a total of eleven (11) archaeological sites were identified at the project site, reflecting Kalihi Valley's agricultural past. Sites 3 and 6 are consistent with the uses of the park from the historic to modern period; no further archaeological work is recommended by the 2020 Addendum and Updated 2022 Addendum. Site 3 contains remnants of the nursery; however the site lacks historical integrity and therefore fails to meet the evaluation of significance to merit consideration for the National Register of Historic Places. The former Marek residence is identified as Site 6 and is currently utilized as the main operational center. Sites 1, 2, 8, 9, 10, and 11 contain various agricultural features, and it is recommended these sites are preserved in place. Per the 2020 Addendum, no further archaeological work is recommended at this time as the proposed master plan update does not outline activities that will affect the preservation of the identified agricultural features. However, if plans for the park are to change, the associated sites should be considered for review based on the proposed actions. Furthermore, if a future study looks at Site 8, in addition to the features described in the 2005 AA, the pūnāwai, the spring that feeds the well and pump, should be located and considered. However, plans for the park are not subject to usages outside of what has been identified in this EA, and it is not anticipated additional surveying for these features will be warranted.

The identified agricultural complex which encompasses Sites 4, 5, and 7 have been designated as SIHP No. 3980. Recognizing the cultural and historic significance of the agricultural complex, the 2022 Master Plan Update looks to preserve the agricultural complex through cultural conservation. Staff members will look to introduce kalo farming back to the area. Based on the 2022 Master Plan Update, it is recommended the agricultural features are to be preserved in place and no further archaeological work is recommended at this time. If plans for this area are to change, the associated features should be considered for review based on the proposed actions.

KKV remains committed to restoring and perpetuating the historic and cultural integrity of Kalihi Valley. The planned facilities will continue to support the Lohe 'Āina program allowing staff and volunteers with opportunities to preserve identified historic and archaeological sites and features. It is not anticipated that identified archaeological features will be adversely affected. In the event that any previously unidentified historic sites or remains are encountered, the appropriate steps in the historic preservation review process will be administered. If any future management actions are planned, such actions will be coordinated by DLNR.



Figure 3.7

Recommendations for Identified Archaeological Sites  
(Nohopapa Hawai'i, 2022)

## 3.9 Socioeconomic Characteristics

### *Existing Conditions*

Ho'oulu 'Āina is located within Census Tract 65 identified as Upper Kalihi Valley. Adjacent census tracts include Tract 64.02 (Kamanaiki Street), Tract 63.02 (Kalena Drive), and Tract 66 (Kahauiki Drive). Data taken from the 2020 Census reports that Census Tract 65 has a population of approximately 4,694, approximately 0.4% of the population in Honolulu. Approximately 59.5% of the population within Census Tract 65 identify as Asian alone, which is higher than the percentage of individuals that identify as Asian alone in Honolulu, approximately 42.9%. A total of approximately 1,112 households have been identified within Census Tract 65, approximately 0.3% of the number of households reported in Honolulu. In comparison to adjacent Census Tracts, Census Tract 65 is the second most populated census tract, containing one of the largest populations of those who identify as Asian in Kalihi Valley. A little less than half, approximately 44% of the population residing in Census Tract 65 have indicated they speak a language other than English, whereas approximately 28% of the population residing in Honolulu indicated they speak a language other than English at home. The median household income for Census Tract 65 is \$121,184.

### *Anticipated Impacts and Proposed Mitigation*

The proposed master plan update will support restorative operations and is not anticipated to adversely affect the residential population of the area. The planned improvements are not expected to adversely affect the natural character of Kalihi Valley. Although the Hale for Programmatic Growth is proposed to accommodate temporary overnight accommodations, no long-term permanent housing will be developed with the planned improvements. Therefore, the proposed improvements are not anticipated to affect land and housing speculation, property values of area homes, or affordable housing in the area.

## 3.10 Visual Resources

### *Existing Conditions*

Ho'oulu 'Āina is located in the Primary Urban Center on the on the island of O'ahu. This area boasts unique scenery and outstanding natural beauty, which includes views of Kalihi Valley, Kamanaiki Ridge, and the lush valleys of the dense forests (*Figure 3.8a to 3.8g*).

The park site is notable for its rural characteristics and for maintaining natural resources and open space in urban Honolulu. Local planning guidelines and objectives uphold the importance of maintaining the rural character of the area, as well as protecting open space while supporting new development that reinforces the local culture and conforms to the natural landscape.



Figure 3.8

Ho'oulu 'Āina Photo Key



**Figure 3.8a**

**Restored Areas with Native Plant Species**



**Figure 3.8b**

**View from Lower Portion of Ho'oulu 'Āina (West)**



**Figure 3.8c** View from Lower Portion of Ho'oulu 'Āina Facing Kamaikai Ridge (East)



**Figure 3.8d** Dense Forest Area Throughout Park



**Figure 3.8e**

**Dense Forest Area of Kalihi Valley**



**Figure 3.8f**

**View from Mauka Portion of Ho'oulu 'Āina (West)**





**Figure 3.8g** View from Mauka Portion of Ho'oulu 'Āina Facing Kamaikai Ridge (East)

#### ***Anticipated Impacts and Proposed Mitigation***

The natural environment of Kalihi Valley will be maintained and enhanced by operations at Ho'oulu 'Āina. Through the Koa 'Āina program, invasive plant species will continue to be removed and restoration of native plant species and agricultural terraces will improve visual characteristics at the park site. The planned facilities will be compatible with the natural landscape and the area's existing visual qualities. The planned improvements will not alter the existing characteristics of the area, nor will they further reduce the visual quality of the area. Views of Kalihi Valley and Kamaikai Ridge will not be adversely affected.

The applicant is aware that solar energy photovoltaic (PV) systems located in or near the approach path of aircrafts may create hazardous conditions for pilots due to glint and glare reflections. The applicant will be prepared to mitigate potential hazards if the PV panels create hazardous conditions for pilots.

### **3.11 Utilities**

A *Preliminary Infrastructure Assessment for Ho'oulu 'Āina* was prepared by G70 in December 2021 and is attached in *Appendix A*. The following section provides key highlights and assesses potential impacts of infrastructure and utility needs.

## ***Existing Conditions***

### Water

The project site is serviced by the Board of Water Supply's (BWS) 8-inch water main located within the Kalihi Street Right of Way. BWS records indicate a ¾-inch domestic water meter (Meter No. 15036851) distributes water from the main throughout the park via an 8-inch ductile iron pipe that is located on TMK 1-4-014:026 and a 16-inch ductile iron pipe that runs through TMK 1-4-016:003. Records indicate an easement granting BWS access to the 8-inch ductile iron pipe has been executed.

According to the BWS, the existing Honolulu water system capacity has been reduced due to the shutdown of the Halawa Shaft pumping station as a protection measure to prevent migration of fuel contamination from the Red Hill Bulk Storage Tank. While pumping water from the Halawa Shaft has stopped, BWS will be drawing on other water sources to replace the 20% provided by the Halawa Shaft. The usage of water will be monitored closely and if necessary, conservation measures will be implemented if consumption surpasses pumpage.

### Wastewater

Based on correspondence with the DOH WWB, the project site does not contain cesspools or septic tank systems. The park is connected to the City and County of Honolulu's Sewer System. Four existing 6-inch sewer laterals connect to an 8-inch Vitrified Clay Pipe (VCP) sewer main that runs within Kalihi Street to service the project site.

### Electrical Power

Existing facilities located in the lower portion of the park are provided electrical services by Electric Co. (HECO) via 12 kilovolt (kV) distribution lines extending off Kalihi Street. Facilities located in the mauka portion of the park are provided off-grid electrical services via solar panels.

### Fire Protection

A fire hydrant (#M07257) is located along Kalihi Street and is approximately 250 linear feet away from the lower portion of the park site. The nearby fire hydrant has a static pressure of 41 pounds per square inch (psi) and a residual pressure of 35 psi at a flow of 1,000 gallons per minute (gpm).

## ***Anticipated Impacts and Proposed Mitigation***

### Water

The park will continue to be supplied with water service from BWS' existing 8-inch main located within Kalihi Street as the BWS confirmed the existing water system can adequately accommodate the planned improvements (letter dated June 20, 2022). However, the applicant understands the availability of water will be confirmed when the building application is submitted for approval and cross-connection control and backflow prevention requirements are completed. An additional water meter and water lateral may be connected to the existing 8-inch main, or an existing lateral may be utilized if the lateral is sufficiently sized to service the water demand with the planned improvements. However, the applicant understands that BWS encourages the use of water conservation measures and plans to increase the use of water conservation measures on-site through the implementation of low flush toilets, nonpotable water for irrigation using rainwater catchment, and landscaping through native reforestation for sustainable growth.

To ensure BWS has access to the waterlines located at the park, an easement granting BWS access to the 16-inch ductile iron pipe on TMK 1-4-016:003 will be forthcoming.

### Wastewater

The planned improvements are not anticipated to significantly increase the amount of wastewater generated at the project site and it is anticipated the existing sewer laterals and the existing 8-inch VCP sewer main will adequately service the park. However, to ensure the existing sewer laterals and the main can adequately serve the park, Ho'oulu 'Āina will submit a Sewer Connection Application. Approval from the State DOH WWB will be obtained for the existing composting toilets and forthcoming composting toilets as improvements progress at the park.

### Electrical Power

The planned improvements are not anticipated to increase demand for electrical services. The existing overhead power poles located along Kalihi Street will be utilized for power needs of facilities planned in the lower portion of the park. Planned facilities in the mauka portion of the park site will be equipped with solar panels for off-grid electrical services. Long-term plans for Ho'oulu 'Āina includes expanding off-grid electrical services for all facilities at the park.

### Fire Protection

The planned facilities will be designed and equipped with fire access and water supply systems based on the State Fire Code: National Fire Protection Agency (NFPA) 1, Uniform Fire Code, 2018 Edition and all additional amendments as part of HAR Title 12, Subtitle 7, Chapter 45.2 with City and County of Honolulu amendments. Additional requirements outlined in the BWS Water System Standards, dated 2002 will also be incorporated in the design for fire protection.

As outlined in the NFPA 1, 2018 Edition, facilities will need to be accessible to the fire department in case of an emergency. In alignment with the NFPA 1, 2018, the master plan update ensures that facilities are located no more than 150 feet from a fire department access road. Moreover, as the design of the planned facilities continues to progress, facilities will be designed in accordance with fire code standards. Improvements to fire department access roads on-site will ensure roads are accessible to the fire department.

Based on the standard requirements for fire access and water supply systems, upgrading and increasing the width of the driveway and installing signage along the entire length of the roadway may be required. Additionally, KKV will continue to maintain overhead vegetation to maintain unobstructed overhead vertical clearance. The planned improvements include extension of the driveway and roadway within the lower portion of the park that will provide an adequate turning radius and an appropriate turnaround for fire accessibility.

To provide a water supply that adequately supplies the required fire flow as determined by the BWS Water Supply Standards, dated 2002, a new meter and lateral may be installed for fire protection services and a booster pump may also be installed due to existing pressure and elevation differences. Upon completion of the design for the planned facilities, HFD will be consulted with to ensure each structure or facility is properly equipped with Fire Department Connections (FDCs) for sprinkler systems and supplied with an adequate water supply.

## 3.12 Roadways, Access and Traffic Conditions

### *Existing Conditions*

Kalihi Street extends approximately five miles from the lower portion of Kalihi, beginning at Auiki Street, to the upper portion of Kalihi Valley. Past the intersection of Kalaepaa Drive and Kalihi Street, Kalihi Street narrows in width, ranging from 21 feet to as narrow as 13 feet where the street terminates approximately 0.7 miles past Ho'oulu 'Āina. Kalihi Street may also be accessed via Nalanieha Street off Likelike Highway (State Route 63). The lower makai portion of Kalihi Street is comprised of a mix of commercial, industrial, and a few residential structures, whereas the upper portion of Kalihi Street is mainly residential. Ho'oulu 'Āina is located at the tail end of residential development along Kalihi Street. Extending past Ho'oulu 'Āina along Kalihi Street, the area remains undeveloped. Traffic conditions in Kalihi Valley are similar to traffic conditions in residential neighborhoods. Peak vehicular roadway usage occurs during weekday morning rush hour and throughout evening rush hour.

Bus service to Ho'oulu 'Āina is provided via Route 7 which stops at the intersection of Kalihi Street and Kale Place, located approximately 0.8 miles from the park. Bus riders must then walk the rest of the way to Ho'oulu 'Āina. KKV also provides shuttle services to Ho'oulu 'Āina for volunteers and encourages large groups to carpool or utilize the shuttle service.

Prior to the driveway entrance of Ho'oulu 'Āina is a bridge crossing Kalihi Street (Bridge No. 003148001200001, Kalihi Street Bridge No. 3). According to the *Hawai'i State Historic Bridge Inventory & Evaluation 2013*, Kalihi Street Bridge No. 3 is a steel stinger/multi-beam structure constructed in 1942. Evaluation of the bridge rated found the workmanship of the bridge as good. The bridge consists of 4x12 steel stringers laid on the diagonal with guard railings painted wood. The decking consists of 4x12 timber and was replaced in 2009 and 2012 with the same design and like-to-like replacement materials.

A driveway along Kalihi Street provides access to the paved on-site parking lot and main gathering areas of Ho'oulu 'Āina. Ho'oulu 'Āina is equipped with approximately 20 stalls in the paved on-site lot and an additional 10 parking stalls for overflow parking in the gravel lot. Another driveway provides a second point of access behind the Ho'okipa Center, however, this point of access has been gated off and the driveway is currently overgrown with vegetation.

### *Anticipated Impacts and Proposed Mitigation*

Kalihi Valley residents may be temporarily affected by a slight increase in truck traffic during construction-related activities, but these short-term impacts to Kalihi Valley residents will be mitigated by restricting the delivery of construction materials and equipment to off-peak hours throughout the day. Additionally, neighboring residence adjacent to and within close proximity of Ho'oulu 'Āina will be notified of construction related deliveries, and the slight traffic delays that may occur during the short-term construction phase.

The existing driveway along Kalihi Street will continue to serve as the main point of access to Ho'oulu 'Āina. Staff members will maintain overhead vegetation to ensure adequate sight lines and overhead clearance is unobstructed by vegetation. Additionally, overhead vegetation will continue to be maintained to ensure branches do not fall and damage neighboring residents.

The planned improvements are not anticipated to significantly affect current traffic patterns in Kalihi Valley or the greater area of Kalihi. Improvements are not anticipated to increase the number of volunteer members and the current on-site parking lot will continue to provide parking for staff and volunteers. Volunteer workdays will continue to be scheduled during the weekends to avoid impacting daily traffic throughout the work week. Additionally, shuttle services provided from KKV to Ho'oulu 'Āina will continue to shuttle volunteers and carpooling will be encouraged to reduce the number of vehicles accessing the site and the need for additional parking spaces. The planned improvements are not anticipated to affect bus operations serving Kalihi Valley.

### **3.13 Air Quality**

#### *Existing Conditions*

Air quality at Ho'oulu 'Āina is primarily affected by air pollutants from natural and/or vehicular sources. Natural sources of air pollution that may affect the air quality of the study area include aero-allergens from plants, and wind-blown dust from bare soil areas. Depending upon the prevailing wind direction, emissions from motor vehicles traveling on Likelike Highway may be dispersed in the area. There are no adverse odor conditions emanating from Ho'oulu 'Āina. The U.S. Environmental Protection Agency (EPA) established the National Ambient Air Quality Standards (NAAQS) per the requirements of the Clean Air Act (last amended in 1990) to protect public health and welfare and prevent the significant deterioration of air quality. These standards account for seven major air pollutants: carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), ozone (O<sub>3</sub>), particulate matter smaller than 10 microns (PM<sub>10</sub>), particulate matter smaller than 2.5 microns (PM<sub>2.5</sub>), sulfur oxides (SO<sub>x</sub>), and lead. DOH, Clean Air Branch (CAB) has also established State Ambient Air Quality Standards (SAAQS) for six of these air pollutants to regulate air quality statewide. The SAAQS for carbon monoxide and nitrogen dioxide are more stringent than NAAQS. Hawai'i also has a stringent standard for hydrogen sulfide, which is a common odorous pollutant associated with wastewater treatment facilities.

Tradewinds that regularly blow from a northeasterly direction moving air pollutants on land to the southwest positively influence air quality at Ho'oulu 'Āina and throughout the State. In general, air quality in the State of Hawai'i continues to be one of the best in the Nation, and criteria pollutant levels remain well below NAAQS and SAAQS.

DOH, CAB regularly samples ambient air quality at monitoring stations throughout the State and annually publishes this information. On O'ahu, there are six monitoring stations. The DOH Air Monitoring Station nearest Ho'oulu 'Āina is in Honolulu off Punchbowl Street, directly across the street from Queen's Medical Center. This Monitoring Station measures CO, SO<sub>2</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>. The air quality index for this station is currently good.

According to the Annual Summary 2019 Hawai'i Air Quality Data, air quality monitoring data compiled by the DOH indicates that the established air quality standards for all monitored parameters are consistently met throughout the State and on the Island of O'ahu (excluding exceedances for fireworks and volcano emissions).

### ***Anticipated Impacts and Proposed Mitigation***

Short-term construction related activity is not expected to generate significant air quality impacts. There will be limited grading required and with little impact to the environment. Effective air pollution control measures will need to be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. BMPs will be implemented during construction of the project to minimize potential impacts and may include job site watering to minimize dust loss during construction, and proper maintenance of construction equipment and vehicles to minimize emissions.

Operations at Ho'oulu 'Āina will not generate adverse air quality impacts. Vehicles traveling to and from Ho'oulu 'Āina will generate emissions; however, this traffic will be minimal.

## **3.14 Noise**

### ***Existing Conditions***

Title 11, Chapter 46, or the Hawai'i Administrative Rules defines maximum permissible sound levels which are intended to protect, control, and abate noise pollution from stationary sources and construction, industrial, and agricultural equipment. As detailed below, maximum permissible sound levels in various zoning districts are set for excessive noise sources during the day (7 a.m. to 10 p.m.) and night (10 p.m. to 7 a.m.) at the property line where the activity occurs.

- Class A – Residential, conservation, preservation, public space, open space, or similar type zones – 55 decibel (dBA) (day) and 45 dBA (night)
- Class B – Multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type zones – 60 dBA (day) and 50 dBA (night)
- Class C – Agriculture, country, industrial, or similar type zones – 70 dBA (day) and 70 dBA (night)

Noise generated by operations at Ho'oulu 'Āina are relatively minimal. Noises in the surrounding area are associated by winds and birds, and vehicles and trucks traveling in the neighborhood and along Likelike Highway. Dense vegetation and relative distance from adjacent neighbors provide a natural barrier from noises produced at Ho'oulu 'Āina.

### ***Anticipated Impacts and Proposed Mitigation***

Delivery and construction related noise is not expected to be significant. Furthermore, State regulations and County Building Permit conditions limits construction activity throughout the daytime and the amount of noise generated from construction activities. The planned facilities will generate noise, however due to hours of operation limited to daytime usage, operations at Ho'oulu 'Āina are not anticipated to be significantly disruptive. Dense vegetation and relative distance from nearby residential lots will continue to provide a natural vegetative buffer and reduce noise spillover. The proposed master plan update is not anticipated to produce significant adverse impacts.

## 3.15 Public Services and Facilities

### *Existing Conditions and Anticipated Impacts*

#### Medical Facilities

The closest hospital is approximately 4.2 miles away from Ho'oulu 'Āina at the Kuakini Medical Center in Honolulu. Other medical facilities in the area include Kōkua Kalihi Valley Comprehensive Family Services 3 miles away, Kalihi Family Medical Clinic 3.7 miles away, Aloha Free Clinic 3.7 miles away, Primary Care Clinic of Hawai'i – Kalihi 3.6 miles away, and Cachola Medical Clinic 3.6 miles away. Staff members and community volunteers may infrequently require service from local medical facilities, although this will not affect the service capacity of these medical facilities.

#### Educational Facilities

There are seven elementary schools (Kalihi Elementary, Ka'ewai Elementary, Kalihi Uka Elementary, Linapuni Elementary, Fern Elementary, Kapalama Elementary, Lanakila Elementary, and Ma'ema'e Elementary) within a five-mile radius of Ho'oulu 'Āina. The nearest intermediate school and high school are located at Sanford B. Dole Intermediate School and Farrington High School, which are approximately 2.8 miles and 3.6 miles away from Ho'oulu 'Āina, respectively.

The proposed master plan update is unlikely to have an adverse effect on existing educational facilities. Schools across the island will continue to be provided opportunities to visit Ho'oulu 'Āina.

#### Recreational Facilities

Aside from the existing opportunities provided at Ho'oulu 'Āina, the primary recreation area in Kalihi Valley is the Kalihi Valley District Park, DeCourt Park, and Kupehau Slopes Park. Additionally, Ho'omaluhia Botanical Garden is located on the other side of the Ko'olau Mountain Range approximately 8.7 miles from Ho'oulu 'Āina. These public recreational facilities will not be affected by the proposed master plan update.

#### Police and Fire Services

Ho'oulu 'Āina falls within HPD's District 5. The main station for District 5 is located approximately 2.6 miles away from Ho'oulu 'Āina adjacent to Fire Station 32 Kalihi Uka. The Kalihi Police Station and Fire Station 32 dispatch police and fire services in the Kalihi Valley area. It is not anticipated the proposed master plan update will affect police and fire services in the Kalihi Valley area.

#### Refuse

The City and County of Honolulu, Department of Environmental Services provides weekly refuse services to the site. Large waste is transported by staff members to landfill sites. The proposed master plan update is not anticipated to increase generation of solid waste and it is not anticipated the City's refuse services will be adversely affected by the planned improvements.

### **3.16 Potential Cumulative and Secondary Impacts**

Cumulative impacts are the result of incremental effects of an activity when combined with other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. The cumulative impacts of the proposed master plan update will be positive as the planned facilities will support 'āina based restorative efforts that has served a critical component of a healthy community. The planned facilities will support:

- Native reforestation efforts with facilities to store tools and propagate seeds for planting
- Cultural restoration efforts with gathering spaces to share mo'olelo of Kalihi Valley
- Farming practices with facilities to store tools and spaces to share knowledge of traditional food crops

Continuing to support restorative efforts at Ho'oulu 'Āina will improve the ecological integrity and preserve the cultural histories of Kalihi Valley. Additionally, improving the park with facilities for volunteers to engage in 'āina based restorative efforts will continue to improve the health of the community. Overall, the proposed master plan update will be positive for the Kalihi Valley watershed and community.

Secondary effects are impacts that are associated with an activity but do not result directly from the activity. No secondary adverse impacts are anticipated with the proposed master plan update. The proposed master plan update will provide beneficial secondary effects for the community of Kalihi Valley and the greater community on O'ahu. Ho'oulu 'Āina is a unique environment in urban Honolulu that provides people of all different cultures to engage in 'āina based restorative efforts and access to a space cultivating an indigenous lifestyle, with a deep focus on conservation efforts through Native Hawaiian practices.



Section 4

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# **Alternatives to the Proposed Project**





## Chapter 4

# Alternatives to the Proposed Project

The following presents an analysis of the alternatives to the proposed project.

### 4.1 Alternative A – No-Action Alternative

The “No-Action” alternative is the baseline against which all other alternatives are measured. “No-action” refers to the future site conditions that would result should the project not proceed.

The No-Action Alternative would involve not proceeding with the proposed master plan update. There would be no improvements made to existing foundations and the planned facilities would not be constructed, thereby eliminating necessary support and functionality for program operations at Ho‘oulu ‘Āina.

KKV recognizes that the health and productivity of the ‘āina is directly tied to the health of the community. Since becoming a lessee of the site, KKV has provided opportunities for people of all backgrounds to access an environment cultivating indigenous lifestyles with opportunities to engage in ‘āina based practices. Providing access to this space with opportunities to engage in ‘āina based practices has successfully restored the cultural and historic integrity of Kalihi Valley and has addressed and reduced health disparities. Without the proposed master plan update, KKV would not be provided with the support needed to aid program operations.

Furthermore, the No-Action Alternative would not support the recently renewed 30-year lease extension. The proposed master plan update provides the support needed to aid programmatic growth at Ho‘oulu ‘Āina. Without such efforts, KKV may be at risk of the lease being revoked, and the park may be at risk of reverting to an illegal dumping ground covered with invasive plant species, posing threats to the ecological integrity and watershed of Kalihi Valley. For these reasons, the No-Action Alternative was not considered a viable alternative.

### 4.2 Alternative B – Delayed Action

A Delayed Action alternative refers to a delay in the proposed update to the master plan. Similar to the No Action alternative, delaying any sort of update to the master plan would delay support needed to aid restorative operations. Delaying action could jeopardize securing grants for the planned facilities, and thereby jeopardize the recently renewed 30-year lease if action is not taken within a reasonable time period. If the lease is revoked, the park is at risk of reverting to an illegal dumping ground covered with invasive plant species, posing threats to the ecological integrity and watershed of Kalihi Valley. For these reasons, a Delayed Action alternative was not considered a viable alternative.

### **4.3 Alternative C – Recreational Usages**

An alternative to the proposed master plan update could include reverting to the original proposed plan outlined in the 2005 EA. Although KKV has and continues to accomplish what was outlined in the 2005 EA which includes retention and restoration of the home, removal of invasive plant species and reforestation of native plant species, energy self-sufficient and sustainable design, restoration of Hawaiian agricultural terraces, community gardening, establishment of rainwater catchment system, and wheelchair-accessible paved walkways and parking, the 2005 EA also included recreational usages such as a nature camp with overnight accommodations, hiking and biking trails, and picnic areas.

However, implementing recreational usages, such as tent camp sites for overnight accommodations, hiking and biking trails and picnic areas would steer the usage of the park in another direction. Although a recreational park would provide a public benefit, such usages could potentially harm the environment and the historic archaeological sites identified throughout the park site. Hikers and bikers accessing trails throughout the park may bring in seedlings on their boots or bikes from non-native plant species and disperse seeds throughout the park. Hikers and bikers could go off the trails and potentially harm or destroy historic archaeological sites. Campers and picnickers could potentially create additional litter and waste at the park site creating unsightly areas throughout the park. Recreational usages at the park site could potentially increase the number of individuals accessing the site daily and increase traffic in Kalihi Valley. Hiking trails and recreational parks have been identified in *Section 3.15 Public Services*, and it is not anticipated that updating the master plan to support program operations at Ho'oulu 'Āina will adversely affect nearby recreational parks or hiking trails.

Overall, utilizing Ho'oulu 'Āina for recreational usages could potentially affect the environment, safety, health, and culture in a way that could conceivably have a negative impact on the community. Additionally, community surveys indicate that the Kalihi Uka community is strongly opposed to recreational uses that accommodate overnight camping, unfettered hiking and biking, and picnicking areas. Ho'oulu 'Āina is a unique park environment that allows individuals of all backgrounds to deepen knowledge of Native Hawaiian culture through engaging in 'āina based restorative efforts, providing a healing space that is culturally and place based. For these reasons, updating the master plan to include recreational usages originally proposed in the 2005 EA have been dismissed from further consideration.

### **4.4 Preferred Alternative/Proposed Action – Updating the Master Plan to Support Restorative Program Operations**

The preferred alternative is the updated master plan to support restorative operations at Ho'oulu 'Āina (*Figure 2.6*). Since becoming a lessee of the site, Ho'oulu 'Āina has seen an increasing demand from the community to provide access to an environment cultivating an indigenous lifestyle and with opportunities to engage in 'āina based practices. In an effort to meet the demand, KKV engaged in a comprehensive planning process and outlined a programmatic plan to guide future growth. To support the programmatic plan and guide future growth, KKV is proposing to update the master plan with facilities that will provide opportunities for community volunteer members to engage in 'āina based practices and deepen indigenous knowledge of Native Hawaiian farming practices, cultural and historic resources, and native forestry to restore the health of the community.

The proposed master plan update supports programmatic growth and is in alignment with the conditions and terms in the recently renewed 30-year lease. The planned improvements will not alter the existing character or setting of the park site and will continue to provide a space cultivating an indigenous lifestyle with opportunities to engage in 'āina based practices in the urban setting of Honolulu. Providing access to a unique park environment with opportunities to engage in 'āina based restorative activities has successfully restored the cultural and historic integrity of Kalihi Valley and has addressed and reduced health disparities. Furthermore, restoration efforts will continue to improve the ecological integrity and watershed of Kalihi Valley. The proposed master plan update is not anticipated to result in any significant adverse environmental, ecological, or social impacts. Continuing to allow programmatic growth at Ho'oulu 'Āina will be positive for the forest, the community, the public, and the watershed as a whole.



Section 5

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# Plans and Policies





## Chapter 5

# Plans and Policies

The consistency of the planned improvements with applicable State of Hawai'i and City & County of Honolulu planning and land use objectives, policies, principles and guidelines are discussed below.

### 5.1 Americans with Disabilities Act

In 1991, the Federal government enacted the Americans with Disabilities Act (ADA) to provide equal accessibility for persons with disabilities. Part of this statute requires building designs to consider and incorporate the needs of persons with disabilities. HRS §103-50 states, "...all plans and specifications for the construction of public buildings, facilities, and sites shall be prepared so that the buildings, facilities, and sites are accessible to and usable to persons with disabilities." The Disability and Communication Access Board (DCAB) shall adopt rules for the design of buildings, facilities, and site, by or on behalf of the State and Counties.

An advisory issued by DCAB that became effective January 2, 2017 enacts outdoor recreational guidelines as required by the State of Hawai'i. The Hawai'i Outdoor Developed Areas Accessibility Guidelines apply to camping areas, picnic areas, trails and viewing areas by persons with disabilities, and are in addition to sections of the ADA Accessibility Guidelines, 36 CFR 1191.

#### Discussion

The proposed master plan update will comply with ADA and DCAB accessibility requirements for outdoor areas.

### 5.2 Hawai'i State Plan

The Hawai'i State Plan establishes a statewide planning system that provides goals, objectives, and policies that detail priority directions and concerns of the State of Hawai'i; these will be discussed as they relate to the planned improvements.

It is the goal of the State, under the Hawai'i State Planning Act (Chapter 226, HRS), to achieve the following:

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i present and future generations.
- A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

Specific objectives and policies of the State Plan that pertain to the planned improvements are as follows:

**Section 226-6 Objectives and Policies for the economy—in general:**

*(b) To achieve the general economic objectives, it shall be the policy of this State to:*

- (19) Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.*

**Discussion**

The proposed master plan update is complementary to the State's objectives for the general economy. The planned facilities will provide the additional support that is needed to carry out program operations, including native reforestation efforts through the Koa 'Āina program will continue to promote and protect native plant species throughout the park site in support of a healthy economy. The planned improvements will support program operations at Ho'oulu 'Āina and to continue to protect and restore natural and cultural resources of Kalihi Valley.

**Section 226-7 Objectives and policies for the economy – agriculture.**

*(a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:*

- (2) Growth and development of diversified agriculture throughout the State.*
- (3) An agriculture industry that continues to constitute a dynamic and essential component of Hawai'i's strategic, economic, and social well-being.*

*(b) To achieve the agriculture objectives, it shall be the policy of this State to:*

- (2) Encourage agriculture by making the best use of natural resources.*
- (11) Increase the attractiveness and opportunities for an agricultural education and livelihood.*
- (16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.*
- (17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i'a, māla, and irrigated lo'i, and growth of traditional Hawaiian crops, such as kalo, 'uala, and 'ulu.*
- (18) Increase and develop small scale farms.*

**Discussion**

The proposed master plan update supports the State's policies and objectives for the economy with regard to agriculture. The Mahi 'Āina program provides opportunities for volunteer members to engage in farming practices, reflecting upon Kalihi's agricultural past. The planned facilities will aid farming and agricultural production at Ho'oulu 'Āina. Volunteer members will deepen their knowledge of Native Hawaiian farming practices and the health benefits and medicinal usages of traditional Hawaiian crops. The planned improvements will support program operations at Ho'oulu 'Āina and continue to provide a unique park setting with agricultural opportunities in urban Honolulu.

**Section 226-11 Objectives and policies for the physical environment—land-based, shoreline, and marine resources:**

- (a) *Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:*
  - (1) *Prudent use of Hawai'i's land-based, shoreline, and marine resources.*
  - (2) *Effective protection of Hawai'i's unique and fragile environmental resources.*
- (b) *To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:*
  - (1) *Exercise an overall conservation ethic in the use of Hawai'i's natural resources.*
  - (2) *Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.*
  - (3) *Take into account the physical attributes of areas when planning and designing activities and facilities.*
  - (4) *Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.*
  - (6) *Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.*
  - (8) *Pursue compatible relationships among activities, facilities, and natural resources.*
  - (9) *Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.*

**Discussion**

The proposed master plan update is consistent with the State's objectives and policies regarding land based, shoreline, and marine resources. Since becoming a lessee of the site, staff members have engaged in efforts to preserve historic archaeological features, indigenous crops, and cultural historic practices cultivated in Kalihi Valley. The proposed master plan update will provide the additional support to carry out restoration efforts and will not impact the existing characteristics of the area.

Furthermore, restoring native plant species within the mauka portion of the park is anticipated to provide a suitable habitat for the 'Elepaio to return to Kalihi Valley. Overall, the proposed master plan update will support program operations at Ho'oulu 'Āina and to continue to provide a space in the urban setting of Honolulu with opportunities to engage in 'āina based restorative activities.

**Section 226-12 Objectives and policies for the physical environment—scenic, natural beauty, and historic resources:**

- (a) *Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.*
- (b) *To achieve the scenic, natural beauty, and historic resources objectives, it shall be the policy of this State to:*
  - (1) *Promote the preservation and restoration of significant natural and historic resources.*

- (3) *Promote the preservation of views and vistas to enhance the landscapes, and other natural features.*
- (4) *Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.*
- (5) *Encourage the design of developments and activities that complement the natural beauty of the islands.*

## **Discussion**

The proposed master plan update supports the State's objectives and policies to preserve and restore natural and historic resources. Ho'oulu 'Āina provides an environment for volunteer members to deepen their knowledge of Hawai'i's rich culture along with land and resource management through engaging in 'āina based restorative activities. Volunteers are provided opportunities to engage in Native Hawaiian farming practices, restoration of cultural and historic resources identified within Kalihi Valley, and the health benefits of traditional Hawaiian crops. Since becoming a lessee of the site, Ho'oulu 'Āina has successfully preserved several ahu and are actively involved in preserving several historic archaeological sites. The proposed master plan update will provide the additional support to carry out restoration efforts and continue to preserve natural and historic resources.

### **Section 226-13 Objectives and policies for the physical environment—land, air, and water quality:**

- (a) *Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:*
  - (1) *Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.*
  - (2) *Greater public awareness and appreciation of Hawai'i's environmental resources.*
- (b) *To achieve the land, air, and water quality objectives, it shall be the policy of this State to:*
  - (1) *Foster educational activities that promote a better understanding of Hawai'i's limited environmental resources.*
  - (2) *Promote the proper management of Hawai'i's land and water resources.*
  - (3) *Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.*
  - (4) *Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.*
  - (6) *Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.*
  - (8) *Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.*

## **Discussion**

The proposed master plan update supports the State's policies with regard to land, air, and water quality. Ho'oulu 'Āina provides opportunities for people of all backgrounds to deepen their knowledge of Hawai'i's rich culture along with land and resource management through engaging in 'āina based restorative activities. Volunteers are provided opportunities to engage in Native Hawaiian farming practices and learn of the health benefits and medicinal uses of traditional Hawaiian crops. The proposed master plan update will provide the additional support for restoration efforts and continue to deepen knowledge of land and resource management.

### **Section 226-16 Objectives and policies for facility systems–water:**

- (a) *Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.*
- (b) *To achieve the facility systems water objective, it shall be the policy of this State to:*
  - (3) *Reclaim and encourage the productive use of runoff water and wastewater discharges.*
  - (4) *Assist in improving water quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.*

## **Discussion**

The proposed master plan update supports the State's policies and objectives with regard to water. Water conservation measures including low flush toilets, nonpotable water for irrigation using rainwater catchment, and landscaping through native reforestation have been incorporated into the proposed master plan update to support sustainable growth and the State's objectives for water facility systems.

### **Section 226-20 Objectives and policies for socio-cultural advancement–health:**

- (a) *Planning for the State's socio-cultural advancement with regard to health shall be directed towards the achievement of the following objectives:*
  - (3) *Elimination of health disparities by identifying and addressing social determinants of health.*
- (b) *To achieve the health objectives, it shall be the policy of this State to:*
  - (4) *Foster an awareness of the need for personal health maintenance and preventative health care through education and other measures.*
  - (5) *Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.*
  - (7) *Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve the native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.*

## **Discussion**

KKV recognizes that changes in past land uses have disproportionately impacted and dispossessed Native Hawaiian livelihoods. However, it is the intention of this project to provide a unique environment with opportunities to practice, perpetuate, and educate others about their culture. By doing so, restorative efforts at Ho'oulu 'Āina provide a place-based and culturally-based environment that has addressed and reduced health disparities amongst Native Hawaiians and the greater community. The planned improvements will support operations at Ho'oulu 'Āina and continue to provide a unique healing environment in Kalihi Valley for people of all backgrounds to engage in 'āina based restorative efforts, improving the health of the environment and the health of the community.

### **Section 226-21 Objectives and policies for socio-cultural advancement–education:**

- (a) *Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.*
- (b) *To achieve the education objective, it shall be the policy of this State to:*
  - (1) *Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.*
  - (2) *Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.*
  - (4) *Promote educational programs which enhance understanding of Hawai'i's cultural heritage.*

## **Discussion**

The proposed master plan update supports the State's objective for socio-cultural advancement with regard to education. Ho'oulu 'Āina provides a unique park environment for volunteer members to deepen their knowledge of Hawai'i's rich culture along with land and resource management through engaging in 'āina based restorative efforts. School groups are invited to visit Ho'oulu 'Āina to promote awareness and understanding of Hawai'i's cultural heritage. The planned improvements will support operations at Ho'oulu 'Āina and continue to provide opportunities for educational programs and activities suitable for people of all backgrounds, students, and individuals wanting to deepen their knowledge about Hawai'i's cultural heritage.

### **Section 226-23 Objectives and policies for socio-cultural advancement–leisure:**

- (a) *Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.*
- (b) *To achieve the leisure objective, it shall be the policy of this State to:*
  - (1) *Foster and preserve Hawai'i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.*
  - (2) *Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.*
  - (3) *Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.*

- (4) *Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.*
- (6) *Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.*
- (10) *Assure adequate access to significant natural and cultural resources in public ownership.*

### **Discussion**

The proposed master plan update supports the State's objective for socio-cultural advancement with regard to leisure. Since becoming a lessee of the site, Ho'oulu 'Āina has provided a unique park environment in the urban setting of Honolulu for individuals to deepen their knowledge of Hawai'i's rich culture along with land and resource management through engaging in 'āina based restorative efforts. The planned improvements will support operations at Ho'oulu 'Āina and continue to provide access to an environment with significant natural and cultural resources and unique opportunities for individuals to deepen their knowledge of Hawai'i's natural and cultural resources.

### **Section 226-25 Objectives and policies for socio-cultural advancement–culture:**

- (a) *Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people.*
- (b) *To achieve the culture objective, it shall be the policy of this State to:*
  - (1) *Foster increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and the history of Hawai'i.*
  - (2) *Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawai'i's people and which are sensitive and responsive to family and community needs.*
  - (3) *Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai'i.*
  - (4) *Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawai'i's people and visitors.*

### **Discussion**

The proposed master plan update supports the State's socio-cultural advancement objective to provide opportunities that enhance and promote Hawaiian cultural identities, traditions, values, customs, and arts. Ho'oulu 'Āina has engaged in a variety of efforts to restore historic and traditional land uses of Kalihi Valley. Furthermore, Ho'oulu 'Āina is a unique park providing educational opportunities to deepen knowledge of Native Hawaiian culture through engaging in 'āina based restorative efforts. The planned improvements will support operations at Ho'oulu 'Āina and continue to provide a unique park setting in urban Honolulu perpetuating and educating about Native Hawaiian culture.

## Section 226-102 Overall Direction

*The State shall strive to improve the quality of life for Hawai'i's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.*

### Discussion

Ho'oulu 'Āina supports the overall direction of the State of Hawai'i in the areas of land resource management and sustainability. The planned improvements will provide additional support for program operations. The unique park setting provides access to an environment in urban Honolulu with opportunities to deepen knowledge of Hawai'i's rich culture along with land and resource management through 'āina based restorative activities. By deepening knowledge of Native Hawaiian culture and land management, the health of the environment will continue to improve along with the health of the community.

## 5.3 Hawai'i 2050 Sustainability Plan

The long-term strategy of the Hawai'i 2050 Sustainability Plan is supported by its main goals and objectives of respect for culture, character, beauty, and history of the State's island communities; balance among economic, community, and environmental priorities; and an effort to meet the needs of the present without compromising the ability of future generations to meet their own needs. To continue coordination and implementation of Hawai'i's sustainability and climate adaptation goals, principles, and policies, pursuant to HRS §226-65, the Hawai'i 2050 Sustainability Plan has been updated to align the state's goals, policies, and actions in accordance with the United Nations Sustainability Development Goals and recommend sustainability and climate change actions for the 2020-2030 decade. The updated plan identified eight (8) focus areas that will help Hawai'i become more equitable, climate resilient, and sustainable during this decade of action. The focus areas that are pertinent to the proposed update to the master plan for the site are as follows:

**Focus Area 4:** *Advance sustainable communities through strategies that improve land use and access to green space, advance sustainable practices in schools, and encourage sustainable buildings and infrastructure.*

**Focus Area 7:** *Preserve the natural environment, including a focus on clean water, marine resources and ecosystems, and natural resource protection.*

**Focus Area 8:** *Perpetuate traditional ecological knowledge and values as Hawai'i collectively tackles these sustainability and climate changes.*



## **Discussion**

The proposed master plan update will support action items of the Hawai'i 2050 Sustainability Plan and is in alignment with the identified focus areas. Individuals and school groups are invited to engage in efforts to restore native plant species and historic archaeological sites and engage in farming practices to learn about health benefits and medicinal uses of Native Hawaiian crops. Since becoming a lessee of the site, Ho'oulu 'Āina has engaged in efforts to reforest native plant species, improving the health of the forest and watershed of Kalihi Valley. Furthermore, the proposed master plan update will provide additional support to continue reforestation efforts of native plant species and continue to improve the forest health and watershed of Kalihi Valley. Ho'oulu 'Āina perpetuates Native Hawaiian education and culture in urban Honolulu.

## **5.4 Hawai'i State Land Use District Guidelines**

Under HRS §205, all lands of the State are to be classified in one of four categories: urban, rural, agricultural, and conservation lands. The State Land Use Commission (LUC), an agency of the State Department of Business, Economic Development, and Tourism (DBEDT), is responsible for each district's standards and for determining the boundaries of each district (HRS §205-2(a)). The LUC is also responsible for administering all requests for district reclassifications and/or amendments to district boundaries, pursuant to HRS §205-4, and HAR §15-15 as amended. Under this Chapter, all lands in Hawai'i are classified into four land use districts: (1) Conservation, (2) Agricultural; (3) Urban, and (4) Rural.

The upper portion of Ho'oulu 'Āina is located within the State Land Use Conservation District (*Figure 1.3*). The Conservation District generally includes lands necessary for protecting watersheds, water resources, and water supplies. This District also includes lands necessary for the conservation, preservation, and enhancement of scenic, cultural, historic, or archaeological sites and sites of unique physiographic or ecologic significance. These are also lands necessary for providing and preserving parklands, wilderness and beach reserves, for conserving natural ecosystems of indigenous or endemic plants, fish, and wildlife. All offshore and outlying islands of the State are classified conservation unless otherwise designated on the land use district maps. Typically, conservation lands may not be normally adaptable or presently needed for urban, rural, or agricultural use. Jurisdiction of this district lies primarily with the State Department of Land and Natural Resources.

Since 1964, the Board of Land and Natural Resources (BLNR) has adopted and administered land use regulations for the Conservation District pursuant to State Land Use Law (Act 187) of 1961. Act 187 defined Conservation as meaning the protection of watersheds and water supplies; preserving scenic areas; providing park lands, wilderness and beach reserves; conserving endemic plants, fish, and wildlife; preventing floods and soil erosion; forestry; and other related activities.

Land use regulation within the Conservation District is outlined in HAR §13-5 as amended. Conservation lands are further classified into the following subzones: Protective; Limited; Resource; General; or Special. Ho'oulu 'Āina is located within the Resource Subzone. The objective of the Resource Subzone is to ensure, with proper management, the sustainable use of the natural resources of those areas. The Resource Subzone encompasses lands that are:

- (1) Lands necessary for providing future parkland and lands presently used for national, state, county, or private parks;
- (2) Lands suitable for growing and harvesting of commercial timber or other forest products;

- (3) Lands suitable for outdoor recreational uses such as hunting, fishing, hiking, camping, and picnicking;
- (4) Offshore islands of the State of Hawai'i, unless placed in a (P) or (L) subzone;
- (5) Lands and state marine waters seaward of the shoreline or to the extent of the State's jurisdiction, unless placed in a (P) or (L) subzone

As outlined in HAR §13-5-24, within the Resource Subzone, Botanical Gardens, Private Parks, and Nature Centers operated by a for profit or non-profit establishment offering nature-based outdoor educational activities with supporting facilities are allowed upon approval of a board permit. In compliance with rules governing the use of lands within the Resource Subzone, KKV submitted a Conservation District Use Permit (CDUP) with a management plan to the BLNR to implement the master plan for the Nature Park and Active Living Center for the site. The BLNR approved of the CDUP in October 2006, under CDUP: OA-3351.

### **Discussion**

As classified by the State of Hawai'i LUC, Ho'oulu 'Āina is situated within the State Conservation District. A CDUP outlining the park usage and setting within the Conservation Resource Subzone was approved in 2006 (CDUP: OA-3351). DLNR OCCL was consulted with on January 21, 2022 and was notified that the proposed uses in the Conservation District are considered an accessory use and allowable under CDUP: OA-3351.

## **5.5 Hawai'i Coastal Zone Management Program**

The Coastal Zone Management Act of 1972 (16 USC Section 1451), as amended through Public Law 104-150, created the coastal management program and the National Estuarine Research Reserve system. The coastal states are authorized to develop and implement a state coastal zone management program. Hawai'i Coastal Zone Management (CZM) Program received federal approval in the late 1970's. The objectives of the State's Hawai'i CZM Program, HRS §205A-2, are to protect valuable and vulnerable coastal resources such as coastal ecosystems, special scenic and cultural values and recreational opportunities. The objectives and policies of the program addresses measures to reduce coastal hazards and to improve the review process for activities proposed within the coastal zone.

The State's CZM Program charges each County with designating and administering Special Management Areas (SMA) within the State's coastal areas to implement guidelines for potential development impacts on the shoreline, near shore, and ocean area environments. Any "development," as defined by the CZM Law, located with the SMA requires an SMA Use Permit.

### **Discussion**

Although Ho'oulu 'Āina is located outside of the SMA as delineated by the City and County of Honolulu, HRS §205A requires all state and county agencies to enforce CZM objectives and policies as set forth in HRS §205A-2. The following table examines the project's conformance with the objectives of the Hawai'i CZM Law.

<b>Table 5.1 CZM Objectives/Policy Applicable to the Project</b>	
<b>Subject Area</b>	<b>Objective/Policy</b>
Recreational resources	Ho'oulu 'Āina is not located along the shoreline and will not affect existing public access to coastal recreational resources.
Historic resources	Archaeological studies have been conducted for this Environmental Assessment (EA), where archaeological resources were identified and analyzed.
Scenic and open space resources	As discussed in <i>Section 3.10</i> , the proposed master plan update is not expected to adversely affect vistas or scenic resources. The design of facilities will be reflective of the natural environment and the area's existing visual qualities. The planned facilities are not anticipated to alter the existing characteristics of the area, nor will they further reduce the visual quality of the area.
Coastal ecosystems	Ho'oulu 'Āina will promote water quantity and quality planning and management practices that maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.
Economic uses	Not applicable.
Coastal hazards	Restoration and maintenance efforts that occur in Ho'oulu 'Āina will not cause coastal flooding.
Managing development	All improvement activities will be conducted in compliance with State and County environmental rules and regulations. This EA is prepared in accordance with HRS, Chapter 343 and HAR, Chapter 11-200.1 and complies with the requirements for assessing and communicating the potential short and long-term impacts.
Public participation	Public notification of the proposed action will be provided with publication of the Draft EA. See <i>Chapter 7</i> of this EA for a list of agencies, organizations and individuals consulted in the preparation of this EA.
Beach protection	Not applicable.
Marine resources	The planned improvements are not anticipated to adversely affect marine resources. Although the park is located in Kalihi Valley and is far inland from the coastal area, appropriate BMPs, as discussed throughout this EA, will be used during construction to prevent the release of materials that have the potential to affect marine and coastal resources.

## 5.6 City and County of Honolulu General Plan

The General Plan for the City was adopted in 1977 and has been subsequently amended (most recently in 2002). The General Plan is a comprehensive statement of the long-range social, economic, environmental and design objectives for the general welfare and prosperity of the people of O'ahu. The objectives and policies are organized into 11 subject areas and are intended to guide and coordinate City land use plans and regulations, and budgeting policies and decisions for public facility capital improvements, operations and maintenance.

A Draft 2035 O'ahu General Plan Update was published for public review in November 2012, and the Revised General Plan was submitted to the City Council in April 2018 for approval. A Final Revised General Plan Update is still pending. Updating the master plan for the site is consistent with the applicable objectives and policies of the existing City and County of Honolulu General Plan as amended in 2002, described below.

## **The Economy**

**Objective A: To promote employment opportunities that will enable all people of O'ahu to attain a decent standard of living.**

- *Policy 1. Encourage the growth and diversification of O'ahu's economic base.*

**Objective C: To maintain the viability of agriculture on O'ahu.**

- *Policy 1. Assist the agricultural industry to ensure the continuation of agriculture as an important source of income and employment.*
- *Policy 2. Support agricultural diversification in all agricultural areas on O'ahu.*
- *Policy 3. Support the development of markets for local products, particularly those with the potential for economic growth.*
- *Policy 6. Encourage the more intensive use of productive agricultural land.*
- *Policy 7. Encourage the use of more efficient production practices by agriculture, including the efficient use of water.*
- *Policy 8. Encourage the more efficient use of non-potable water for agricultural use.*

## **Natural Environment**

**Objective A: To protect and preserve the natural environment.**

- *Policy 1. Protect O'ahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.*
- *Policy 2. Seek the restoration of environmentally damaged areas and natural resources.*
- *Policy 4. Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water- recharge areas, distinctive land forms, and existing vegetation.*
- *Policy 6. Design surface drainage and flood-control systems in a manner which will help preserve their natural settings.*
- *Policy 7. Protect the natural environment from damaging levels of air, water, and noise pollution.*
- *Policy 8. Protect plants, birds, and other animals that are unique to the State of Hawai'i and the Island of O'ahu.*
- *Policy 9. Protect mature trees on public and private lands and encourage their integration into new developments.*
- *Policy 10. Increase public awareness and appreciation of O'ahu's land, air and water resources.*

**Objective B: To preserve and enhance the natural monuments and scenic views of O'ahu for the benefit of both residents and visitors.**

- *Policy 1. Protect the Island's well-known resources: its mountains and craters; forests and watershed areas; marshes, rivers, and streams; shorelines, fishponds, and bays; and reefs and offshore islands.*

- *Policy 2. Protect O'ahu's scenic views, especially those seen from highly developed and heavily traveled areas.*
- *Policy 4. Provide opportunities for recreational and educational use and physical contact with O'ahu's natural environment.*

### **Physical Development and Urban Design**

**Objective D: To maintain those development characteristics in the urban-fringe and rural areas which make them desirable place to live.**

- *Policy 4. Maintain rural areas which are intended to provide environments supportive of lifestyle choices which are dependent on the availability of land suitable for small to moderate size agricultural pursuits, a relatively open and scenic setting, and/or small town, country atmosphere consisting of communities which are small in size, very low density and low rise in character, and may contain a mixture of uses.*

### **Health and Education**

**Objective B: To provide a wide range of educational opportunities for the people of O'ahu.**

- *Policy 2. Encourage the provision of informal educational programs for people of all age groups.*

### **Culture and Recreation**

**Objective A: To foster the multiethnic culture of Hawai'i.**

- *Policy 1. Encourage the preservation and enhancement of Hawai'i's diverse cultures.*
- *Policy 2. Encourage greater public awareness, understanding, and appreciation of cultural heritage and contributions to Hawai'i made by the City's various ethnic groups.*
- *Policy 3. Encourage opportunities for better interaction among people with different ethnic, social, and cultural backgrounds.*
- *Policy 4. Encourage the protection of the ethnic identities of the older communities of O'ahu.*

**Objective B: To protect O'ahu's cultural, historic, architectural, and archaeological resources.**

- *Policy 1. Encourage the restoration and preservation of early Hawaiian structures, artifacts, and landmarks.*
- *Policy 2. Identify, and to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.*
- *Policy 4. Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts.*
- *Policy 5. Seek public and private funds, and public participation and support, to protect social, cultural, historic, architectural, and archaeological resources.*

**Objective D: To provide a wide range of recreational facilities and services that are readily available to all residents of O'ahu.**

- *Policy 1. Develop and maintain community-based parks to meet the needs of the different communities on O'ahu.*
- *Policy 3. Develop and maintain urban parks, squares, and beautification areas in high density urban places.*
- *Policy 6. Provide convenient access to all beaches and inland recreation areas.*
- *Policy 7. Provide for recreation programs which serve a broad spectrum of the population.*
- *Policy 12. Provide for safe and secure use of public parks, beaches, and recreation facilities.*

### **Discussion**

The proposed master plan update will continue to provide agricultural opportunities supporting diversification of Hawai'i's economy. Ho'oulu 'Āina provides a unique park environment with opportunities for individuals to deepen their knowledge of Native Hawaiian culture through engaging in 'āina based restorative efforts. Individuals are provided opportunities to restore native vegetation and historic archaeological sites and engage in farming and growing traditional agricultural crops. Through engaging in restoration efforts, the health of the environment begins to improve alongside the health of the community. The proposed master plan update will provide the needed support to allow operations at Ho'oulu 'Āina to continue and provide a unique park environment within urban Honolulu with educational opportunities to deepen knowledge of Native Hawaiian culture.

## **5.7 City and County of Honolulu Land Use Ordinance Guidelines**

The purpose of the Land Use Ordinance (LUO) is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the County General Plan and development plans. The LUO is also intended to provide reasonable development and design standards. These standards are applicable to the location, height, bulk and size of structures, yard areas, off-street parking facilities, and open spaces, and the use of structures and land for agriculture, industry, business, residences or other purposes (Revised Ordinance for the City and County of Honolulu, Chapter 21).

### **Discussion**

The Park is located within the City and County of Honolulu P-2 General Preservation and P-1 Restricted Preservation District (*Figure 1.5*). The intent of the Preservation District is to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value. Ho'oulu 'Āina has been determined to be a "public use and structure" for the purposes of the LUO, which is permitted in the P-2 General Preservation zoning district (*CDUP: OA-3351*).

Lands located within the State Conservation District are zoned P-1 Restricted Preservation District. Under HRS §205-12, the counties administer and enforce land uses in all districts other than the Conservation District. All uses, structures, and development standards in the P-1 Restricted Preservation District shall be governed by the requirements and procedures of HRS §205, Department of Land and Natural Resources (HRS §183C-3). See *Section 5.4* for further discussion.

## 5.8 City and County of Honolulu Primary Urban Center Development Plan

The island of O'ahu is divided into eight regional plan areas. Two areas are identified as “development plans,” (DPs) which provide guidance for future growth and development, while the other six areas are addressed in “sustainable communities plans” (SCP) in keeping with modest development patterns and rural characteristics. Each plan implements the objectives and policies of the General Plan for the City and County of Honolulu and provides guidance on public policy, investment, and decision-making within each respective region. Together with the General Plan, they guide population and land use growth over a 20- to 25-year time span.

Ho'oulu 'Āina is located within the region encompassed by the Primary Urban Center Development Plan (PUC DP) (*Figure 5.1*). The PUC DP is currently in the review process of being updated and a Preview Draft of the Updated Development Plan was published in December 2020. As of January 2022, a Final PUC DP is still pending.

The 2004 PUC DP's vision for the PUC focuses on the long-term protection of community resources, the preservation of its residential character, and the adoption of public improvement programs and development regulations that reflect a stable population. The PUC DP establishes the region's role in O'ahu's development pattern by defining policies in Land Use and Transportation and Infrastructure and Public Facilities. The following section discusses the applicable policies and guidelines outlined in the 2004 PUC DP.

### Section 3.1 Protecting and Enhancing Natural, Cultural, and Scenic Resources

Policies:

- *Preserve historic and cultural sites. Preserve and protect sites that have high preservation value because of their good condition or unique features. Protection includes planning and design of adjacent uses to avoid conflicts or abrupt contrasts that detract from or destroy the physical integrity and historic or cultural value of the site. Retain, wherever possible, significant vistas associated with historic, natural and man-made features. Allow adaptive reuse of historic buildings to serve a new function and/or enhance interpretive value without destroying the historic value of a site.*
- *Preserve and protect natural resource and constraint areas. Establish an Urban Community Boundary to define the area for urban development. Place large contiguous areas of natural resource and constraint areas designated for Preservation, including all lands within the State Conservation District, outside of the Urban Community Boundary.*
- *Provide parks and active recreation areas. Develop and maintain parks and other outdoor public spaces in a manner that expands opportunities for both active and passive recreation. Increase and enhance recreational open space in the most densely settled parts of the PUC.*

Guidelines:

- *Preserve the architectural character, landscape setting and visual context of historic landmarks through appropriate zoning standards and development controls, as necessary, and public outreach programs such as design guidelines for the maintenance, renovation or expansion of older dwellings.*

- *In Preservation areas, avoid disturbance to native species and prevent the visual intrusion of structures, including utility and telecommunication installations, when seen from below and from hiking trails.*
- *Recognizing that it is difficult to acquire additional park land in the PUC, develop innovative approaches to make optimum use of existing parks and recreation resources, such as:*
  - *Building partnerships between City, State and private, nonprofit organizations for joint use of facilities and complementary recreation programs*
  - *Reassessing and reassigning, as appropriate the use of existing park land.*

### **Discussion**

The proposed master plan update will support a lease extension fulfilling the PUC DP's goals of providing access to a unique park environment in the PUC. Ho'oulu 'Āina provides opportunities for individuals to deepen their knowledge of Hawai'i's rich culture alongside land and resource management through engaging in 'āina based restorative efforts. People of all backgrounds to engage in 'āina based restorative efforts to preserve and protect historic and cultural sites and natural resources. The proposed master plan update will support a lease extension and continue to provide access to a unique park environment within the PUC.

### **Section 4.1 Water Allocation and System Development**

#### **Policies:**

- *Adapt water conservation practices in the design of new developments and modification of existing uses, including landscaped areas.*
- *Protect and maintain watersheds to ensure adequate supply of high quality water with sufficient infiltration recharge into groundwater aquifers.*

#### **Guidelines:**

- *Conserve the use of potable water by implementing the following measures, as feasible and appropriate:*
  - *Install low-flush toilets, flow restrictors rain catchment barrels, plumbing fixture meters, and other water conserving devices in commercial and residential developments.*
  - *Reuse tertiary treated wastewater effluent, brackish water sources, storm runoff and surface reservoirs for the irrigation of golf courses, parks, other open landscaped areas, and industrial use.*

### **Discussion**

As discussed throughout this EA, Ho'oulu 'Āina is a unique park in the urban setting of Honolulu. Since becoming a lessee of the site, KKV has invested in sustainable practices and methods to support restorative programs, including rainwater catchment systems and composting toilets. The proposed master plan update will provide the needed support to carry out 'āina based restorative efforts and continue to improve the ecological integrity and protect the watershed of Kalihi Valley. The proposed supporting facilities will be supported by composting toilets and rainwater catchment systems will continue to be utilized to repurpose water for potable and non-potable uses.



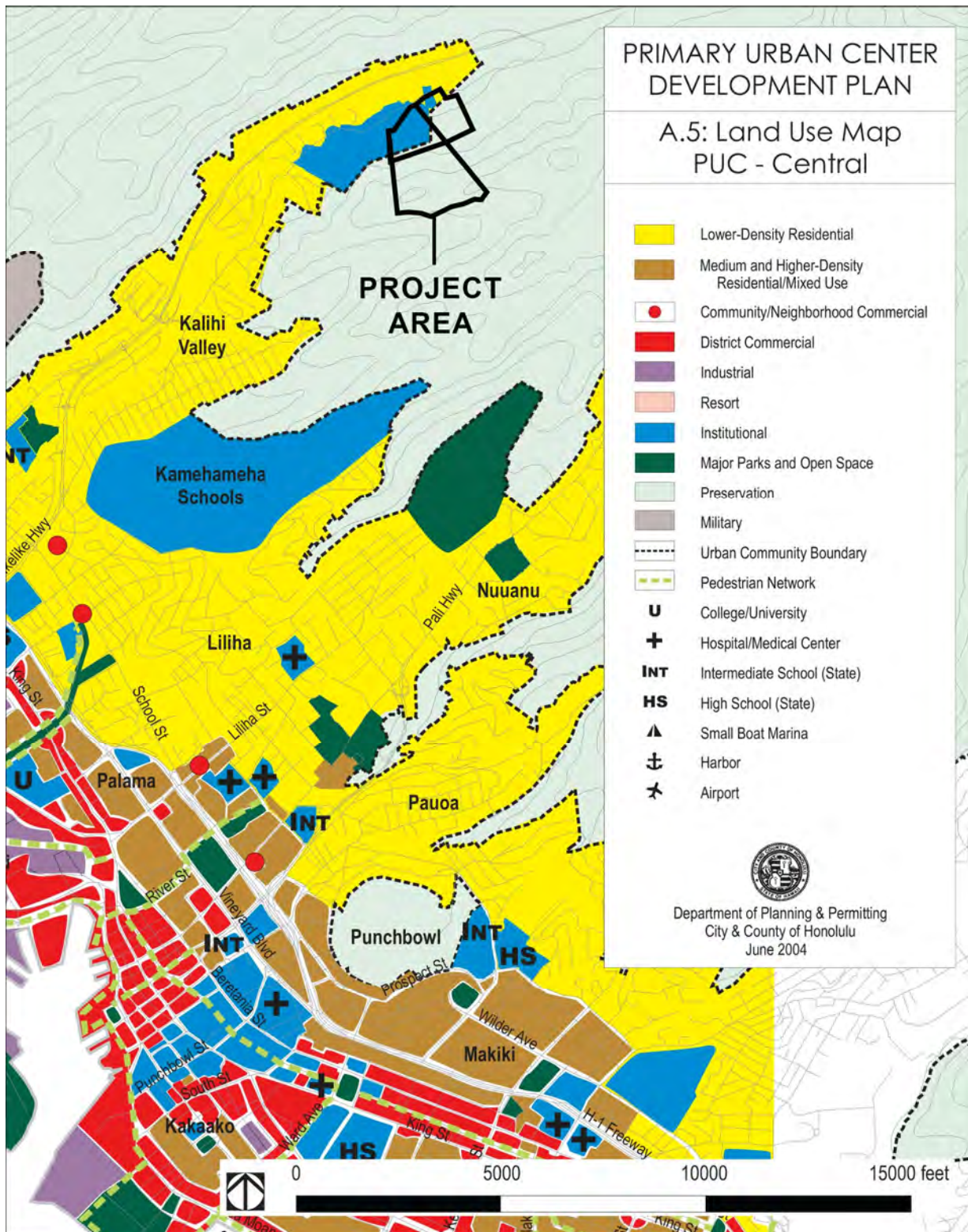


Figure 5.1

PUC Development Plan

## 5.9 City and County of Honolulu Special Management Area

The SMA is a designation established to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawai'i. Special controls on developments within the SMA are necessary to avoid permanent loss of valuable resources and foreclosure of management options. The review guidelines of ROH §25-3.2 are used by Department of Planning and Permitting (DPP) and the City Council for the review of developments proposed in the SMA. These guidelines are derived from HRS §205A-26.

### Discussion

Ho'oulu 'Āina is not located within the SMA as delineated by the County. In addition, the potential environmental impacts of the improvements have been evaluated and determined to not pose a threat to the nearshore and coastal areas.

## 5.10 Ola: O'ahu Resilience Strategy

The Office of Climate Change, Sustainability, and Resiliency (OCCSR) was established by the City Charter in 2016 and tasked with tracking climate change science and its potential impacts. As a part of this task, the office was responsible for developing O'ahu's first resilience strategy. After 18 months of outreach with community stakeholders, government agencies, and the for- and non-profit sectors, OCCSR published *Ola: Resilience Strategy* on May 31, 2019. The strategy identifies 44 action items that lay a path to a resilient future for O'ahu. Actions are organized in the following four pillars: 1) Remaining Rooted, 2) Bouncing Forward, 3) Climate Security, and 4) Community Cohesion. The strategy is consistent with the City's Multi-Hazard Pre-Disaster Mitigation Plan update (2018).

The 44 Actions includes a description, resilience co-benefits, lead City agency and partners involved, timeframe, measures of success, and a spotlight which offers a story of the action already implemented. Actions are described in relation to the Aloha+ Challenge sustainability goal(s) and the UN Sustainable Development Goal(s) that align with the action.

The proposed action is consistent with the following goals and actions items of the *Ola: Resilience Strategy* (2019):

### Pillar IV: Community Cohesion

*Goal 1: Empower Grassroots Resilience Champions*

*Action 36: Increase City-Community Relationships through Volunteerism*

*Action 37: Weave a Tighter Community with Neighborhood Gatherings*

### Discussion

The proposed master plan update is consistent with the Strategy's goals for Community Cohesion. KKV took the community's vision of the site and provided a space to engage in restorative efforts that has been essential to improving the health of the community. Since becoming a lessee of the site, thousands of volunteers have engaged in and contributed towards restoring the park. The proposed master plan update will provide necessary support for volunteers to engage in restoration efforts and provide an opportunity to increase relations between the City and the community. Furthermore, the planned facilities at Ho'oulu 'Āina will continue to provide gathering spaces for the community.

# **Findings Supporting the Anticipated Determination**



## Chapter 6

# Findings Supporting the Anticipated Determination

## 6.1 Anticipated Determination

Based on a review of the significance criteria outlined in Chapter 343, HRS, and Section 11-200.1-13, HAR, the proposed improvements for the site is not anticipated to result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated.

## 6.2 Reasons Supporting the Anticipated Determination

The potential impacts with the update to the master plan have been fully examined and discussed in this Environmental Assessment (EA). As stated earlier, there are no significant environmental impacts expected to result from the planned improvements. This determination is based on the assessments as presented below for criterion (1) to (13).

*(1) Irrevocably commit a natural, cultural or historic resource.*

The archaeological and cultural landscapes have been documented in studies conducted specifically for Ho‘oulu ‘Āina. As detailed in *Section 3.8 and 3.9* of this report, operations at Ho‘oulu ‘Āina include restoration and preservation of historic archaeological sites and cultural resources. Recommended preservation measures have been identified and Ho‘oulu ‘Āina remains committed towards restoring such sites and resources to its integrity. There is the unknown potential for the inadvertent discovery of subsurface historical or cultural resources, including the unknown possibility of iwi kūpuna (ancestral remains). If any cultural or archaeological resources are unearthed or ancestral remains are inadvertently discovered, the DLNR, SHPD, the O‘ahu Island Burial Council representative and participating interests from lineal descendants and individuals will be notified. The treatment of these resources will be conducted in strict compliance with the applicable historic preservation and burial laws.

*(2) Curtail the range of beneficial uses of the environment.*

The planned improvements will not curtail the range of beneficial uses of the environment. The existing park use conforms to existing land use designations. The planned improvements will support operations at Ho‘oulu ‘Āina and continue to provide a unique park environment within the PUC. Continuing to provide the unique park space will provide a beneficial effect, improving the health of the environment and the health of the community.

- (3) *Conflict with the State's environmental policies or long-term environmental goals established by law.*

The proposed master plan update will not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.

- (4) *Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.*

The proposed master plan update will continue to provide educational opportunities to deepen knowledge of Native Hawaiian culture. Ho'oulu 'Āina is a cultural resource providing opportunities to engage in 'āina based restorative efforts including restoration of native plant species, restoration of historic archaeological sites, and farming in support of agricultural economic activity. Through its unique park environment, Ho'oulu 'Āina provides an innovative method through the use of a nature preserve to address social determinants of health.

- (5) *Have a substantial adverse effect on public health.*

Ho'oulu 'Āina provides an innovative method through the use of a nature preserve as a space for healing. Providing opportunities for individuals to engage in 'āina based restorative efforts has improved the health of the community, addressing health disparities rooting from social determinants of health. Updating the master plan to support a lease renewal will continue to provide a space of healing for the community and continue to improve the health of the community.

- (6) *Involve adverse secondary impacts, such as population changes or effects on public facilities.*

There will be no adverse secondary impacts such as population change or effects on public facilities as a result of an update to the master plan. The proposed improvements are not anticipated to increase the number of volunteers accessing the site. Additionally, shuttle services from KKV will continue to provide additional transportation services to Ho'oulu 'Āina. As discussed in *Section 3.15*, the proposed master plan is not anticipated to adversely affect public or recreational facilities within the nearby vicinity.

- (7) *Involve a substantial degradation of environmental quality.*

The proposed master plan update will not involve a substantial degradation of environmental quality and will in fact lead to improvements in environmental quality. Native reforestation efforts through the Koa 'Āina program will restore the health and fertility of soils, improve water quality, prevent erosion from occurring, and overall, improve the ecological and environmental integrity of Kalihi Valley. Long-term impacts to air and water quality, noise, and natural resources are not anticipated. The use of standard construction and erosion control best management practices will minimize the anticipated construction-related short-term impacts.

- (8) *Be individually limited but cumulatively have substantial adverse effect upon the environment or involved a commitment for larger actions.*

The planned improvements will not have substantial cumulative negative effects upon the environment and will in fact have a positive impact through restorative activities. Restorative activities include restoration of native plant species, historic archaeological sites, and farming and agricultural practices, all of which will support the health of the forest and improve the environmental and ecological integrity of Kalihi Valley over time.

- (9) *Have a substantial adverse effect on a rare, threatened or endangered species, or its habitat.*

As discussed in Section 3.7, a portion within the mauka area of the park is designated as a critical habitat for the 'Elepaio. The proposed master plan update will not have a substantial adverse effect on rare, threatened or endangered species, or its habitat and will in fact have a positive impact as continued restoration and reforestation of native plant species is anticipated to improve the forest area for the 'Elepaio to return to Kalihi Valley. No negative impacts are anticipated.

- (10) *Have a substantial adverse effect on air or water quality or ambient noise levels.*

General temporary impacts associated with construction are identified in Section 3.0 of this EA. Although construction is not anticipated to be of large scale and operation, mitigation measures outlined in this EA will be applied during the short-term construction period. The planned improvements are not anticipated to detrimentally affect air or water quality or ambient noise levels.

- (11) *Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters.*

Ho'oulu 'Āina is located in Kalihi Valley adjacent to the Kalihi Stream corridor and lies in Flood Zone X (Areas determined to be outside the 500-year flood plain) and Flood Zone D (Possible but undetermined flood hazard). While Flood Zone D indicates that there is potential for moderate to high-risk flooding, but such flooding event has not been determined, mitigation measures including evacuation and safety guidance procedures are outlined and will be executed in the case of a flooding event. Furthermore, restoration of farming and agricultural activity and reforestation of native plant species will help mitigate potential for flooding. The inland location of the project is outside of the tsunami zone, sea level rise exposure area, and coastal areas. No impacts are anticipated.

- (12) *Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies.*

Ho'oulu 'Āina is located along Kalihi Stream sitting at approximately 500 feet above msl and slopes up approximately 1,400 feet above msl along the top of Kamañiki Ridge. The planned facilities will be compatible with the natural landscape and the area's existing visual qualities and will not affect any scenic vistas and viewplanes identified in the City or State plans. No significant adverse impacts are anticipated.

- (13) *Require substantial energy consumption or emit substantial greenhouse gases.*

Construction of the supporting facilities is not anticipated to be of large scale and operation and will not require substantial energy consumption or emit substantial greenhouse gases relative to other similar sized projects.

## 6.3 Summary

The proposed master plan update is not anticipated to result in significant adverse environmental effects to the site and surrounding area. The EA recommends mitigation measures to alleviate impacts when such impacts are identified. A Finding of No Significant Impact (FONSI) is anticipated.

The proposed master plan update is consistent with the Hawai'i State Land Use District Boundaries, Hawai'i State Plan, 2050 Sustainable Plan, Hawai'i Coastal Zone Management Plan, City and County of Honolulu General Plan, the City's Zoning Ordinance, Primary Urban Center Development Plan, and the Special Management Area. The planned improvements will support operations and continue to provide a cultural resource and unique park environment in Honolulu. Volunteers are provided opportunities to deepen knowledge of Hawai'i's rich culture through engaging in 'āina based restorative efforts. Planned improvements will allow Ho'oulu 'Āina to continue to provide a public benefit as the park environment provides opportunities to improve the health of the environment as well as the health of the community.



**List of Agencies,  
Organizations and Individuals  
Receiving Copies of the EA**



## Chapter 7

# List of Agencies, Organizations and Individuals Receiving Copies of the EA

### 7.1 Consultation List

Consultation for the proposed master plan update began with the early consultation process. Through the early consultation process, various agencies and stakeholders were provided an opportunity to comment on the scope of the Draft Environmental Assessment (EA). Following the publication of the Draft EA, various agencies, stakeholders, and the general public were able to review and comment on the Draft EA. The following table identifies the various agencies and stakeholders who were contacted during the early consultation and Draft EA comment period.

<b>Table 7.1 Agencies, Organizations and Individuals Receiving Copies of the EA</b>			
<b>Respondents and Distribution</b>	<b>Early Consultation</b>	<b>Receiving Draft EA</b>	<b>Draft EA Comments Received</b>
<b>Federal Agencies</b>			
U.S. Department of the Interior, Geological Survey		X	
U.S. Department of the Interior, U.S. Fish and Wildlife Service	X	X	
U.S. Department of the Interior, National Parks Service		X	
U.S. Department of Agriculture, National Resources Conservation Service		X	
U.S. National Oceanic Atmospheric Administration		X	
<b>State of Hawai'i Agencies</b>			
Department of Accounting and General Services		X	X
Department of Business, Economic Development & Tourism (DBEDT)		X	
Department of Hawaiian Home Lands		X	X
Department of Health (DOH)		X	
DOH, Clean Air Branch		X	X
DOH, Clean Water Branch		X	
DOH, Environmental Health Administration		X	
DOH, Wastewater Branch		X	

<b>Table 7.1 Agencies, Organizations and Individuals Receiving Copies of the EA</b>			
<b>Respondents and Distribution</b>	<b>Early Consultation</b>	<b>Receiving Draft EA</b>	<b>Draft EA Comments Received</b>
Department of Land and Natural Resources (DLNR), Land Division	X	X	
DLNR, Division of Aquatic Resources	X	X	
<b>State of Hawai'i Agencies</b>			
DLNR, Commission on Water Resource Management	X	X	X
DLNR, Department of Conservation and Resource Enforcement	X	X	
DLNR, Department of Forestry and Wildlife	X	X	
DLNR, Division of State Parks	X	X	
DLNR, Engineering Division	X	X	
DLNR, State Historic Preservation Division	X	X	
DLNR, Land Division – O'ahu District	X	X	
DLNR, Office of Conservation and Coastal Lands	X	X	
Department of Transportation		X	X
Office of Hawaiian Affairs		X	
Office of Planning and Sustainable Development		X	
<b>City and County of Honolulu Agencies</b>			
Board of Water Supply	X	X	X
Department of Design and Construction		X	
Department of Environmental Services		X	
Department of Facility Maintenance		X	
Department of Parks and Recreation		X	
Department of Planning and Permitting	X	X	
Department of Transportation Services	X	X	X
Honolulu Fire Department	X	X	
Honolulu Police Department	X	X	X
Office of Climate Change, Sustainability and Resiliency		X	
<b>Elected Officials</b>			
Senator Donna Mercado Kim – State Senate District 14	X	X	
Representative John M. Mizuno – State House District 28	X	X	

**Table 7.1 Agencies, Organizations and Individuals Receiving Copies of the EA**

<b>Respondents and Distribution</b>	<b>Early Consultation</b>	<b>Receiving Draft EA</b>	<b>Draft EA Comments Received</b>
Council Member Carol Fukunaga, District 6	X	X	
Kalihi Valley Neighborhood Board No. 16	X	X	
<b>Libraries</b>			
Hawai'i State Library		X	
Kalihi-Pālama Public Library		X	
<b>Community Groups, Individuals, and Consulted Parties</b>			
Chozen-Ji Buddhist Temple	X	X	
Sisters of Sacred Hearts	X	X	
Roman Catholic Church	X	X	
Lunalilo Holdings LLC	X	X	
Michael Bradley	X	X	
Wallace and Jane Takayesu	X	X	
Rodrigo, Margarita, and Roderick Hipol	X	X	
Dalmacio Jr. and Evelyn Balcita	X	X	
Clifton Akitake and Corynne Telles-Akitake	X	X	
Harris Azama and Debora Park-Azama	X	X	
Wayne Toma	X	X	
Darryl Chang	X	X	
Russell Jr. and Summer Mascoto	X	X	
Filemon, Leticia, and Sherwin Ancheta	X	X	
William and Woodrow Hall	X	X	
Sam and Nori Lee	X	X	
Young Family	X	X	

## 7.2 Early Consultation Summary

A summary of comments received during the early consultation period by major topics and associated responses is provided in *Table 7.2* below. Refer to comment letters at the end of this chapter.

**Table 7.2 Summary of Early Consultation Comments and Responses**

Comment	Commentor	Response
<b>Accessibility</b>		
<p>Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility (National Fire Protection Association [NFPA] 1; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1 as amended.)</p> <p>A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2018 Edition, Section 18.2.3.2.1.)</p> <p>The fire department access roads shall be in accordance with Section 18.2.3. (NFPA 1; 2018 Edition, Sections 18.2.3.)</p>	Honolulu Fire Department (HFD)	Thank you for outlining requirements for fire department access roads. The EA contains a discussion regarding fire department accessibility located in <i>Section 3.11</i> .
<p>Kalihi Street Bridge #3 - The bridge is in poor condition resulting in a greatly reduced weight limit that is presently at 10 tons. Although there is a fire hydrant across from the 3659 Kalihi Street residence, the fire engine can not drive to the fire hydrant. The fire engine must park on the other side of the bridge. Other issues is that the bridge must also provide access for the BWS for their facilities and all the utilities that use the joint pole overhead line. In addition to power for the BWS, the overhead line has communication lines that go to windward Oahu. These utility companies and their contractors must service/repair the line. Those companies normally use vehicles that can not legally use the bridge.</p>	Michael Bradley	Thank you for providing information on the current situation of public service vehicles accessing the project site. This information is useful and will be considered for further improvements at Ho'oulu 'Āina.
<b>Biological Resources</b>		
<p>Based on your project location and description, we have noted the species most likely to occur within the vicinity of the project area. These include: Hawaiian Hoary Bat/'ōpe'ape'a (<i>Lasiurus cinereus semotus</i>), Hawaiian Stilt/ae'o (<i>Himantopus mexicanus knudseni</i>), Band-rumped Storm-petrel Hawai'i DPS/'akē'akē (<i>Oceanodroma castro</i>), Hawaiian Petrel/'ua'u (<i>Pterodroma sandwicensis</i>), Newell's Shearwater/'a'o (<i>Puffinus auricularis newelli</i>), and Wedge-tailed Shearwater/'ua'u kani (<i>Ardenna pacificus</i>). Recommended conservation measures intended to avoid or minimize adverse effects to these federally protected species and best management practices to minimize and avoid sedimentation and erosion impacts to water quality have been added to the PIFWO website.</p>	U.S. Fish and Wildlife Service	Thank you for providing a list of protected species most likely to be encountered in Hawai'i and providing a list of species most likely to occur within the vicinity of the project area. Recommended conservation measures have been incorporated in <i>Section 3.6</i> of the EA.
<p>Under section 7 of the ESA, it is the Federal agency's (or their non-Federal designee) responsibility to make the determination of whether or not the proposed project "may affect" federally listed species or designated critical habitat. A "may affect, not likely to adversely affect" determination is</p>	U.S. Fish and Wildlife Service	The U.S. Fish and Wildlife Service was contacted with during the early consultation period. <i>Section 3.6</i> of the EA identifies the designation of the 'Elepaio Critical Habitat within the mauka portion of TMK 1-4-014:001. However, as discussed in the EA, the planned improvements

**Table 7.2 Summary of Early Consultation Comments and Responses**

Comment	Commentor	Response
<p>appropriate when effects to federally listed species are expected to be discountable (i.e., unlikely to occur), insignificant (minimal in size), or completely beneficial. This conclusion requires written concurrence from the Service. If a “may affect, likely to adversely affect” determination is made, then the Federal agency must initiate formal consultation with the Service. Projects that are determined to have “no effect on federally listed species and/or critical habitat do not require additional coordination or consultation.</p>		<p>do not extend mauka within the ‘Elepaio Critical Habitat and are therefore not anticipated to negatively impact federally listed species and/or critical habitats. Further, as discussed in the EA, reforestation of native plant species is anticipated to help restore the ‘Elepaio population in Kalihi Valley.</p>
<p>Green space fronting Kalihi Street – The Park has maintained a green space along Kalihi street. There are some very old trees planted along the park’s boundary that were mature trees in the 1960s. In addition there are a mixture of other trees that form a solid wall along Kalihi street and branch out over the street. One species of tree is the Bishop Wood which crowds out native trees and is listed on the Hawaii Invasive Species Council website. The trees in the greenspace also have a large amount of philodendron and other climbing vines which is unhealthy and adds considerable weight to the top of the trees. Our two homes are in the falling radius of the stand of trees. Both homes built in the early 1950s are non-conforming structures that can not be rebuilt in the current location if severely damaged. The green space should be addressed to minimize these risks and emphasize appropriate native species planting.</p>	<p>Michael Bradley</p>	<p>Thank you for sharing the current conditions fronting and across of Ho’oulu ‘Āina. With the proposed master plan update, staff and volunteers will be provided with the needed support to continue restoration and maintenance at the park. Staff and volunteers will continue to maintain the park including controlling overgrown vegetation to ensure tree branches do not damage neighboring residences.</p>
<p>The proposed Draft EA for the proposed Ho’oulu ‘Āina Nature Park is not expected to have a significant impact on aquatic resource values in this area.</p>	<p>DLNR, Division of Aquatic Resources (DAR)</p>	<p>Thank you for providing insight on the proposed master plan update. This information has been integrated throughout the EA.</p>
<p>The State DLNR DOFAW has identified State listed species that could potentially occur in the vicinity of the project area. Species include the Hawaiian Hoary Bat / ‘Ōpe‘ape‘a (<i>Lasiurus cinereus semotus</i>), Elepaio (<i>Chasiempis ibidis</i>), and seabirds. DOFAW identified several mitigation measures to minimize potential impacts to these State listed species. DOFAW also recommends using native plant species for landscaping that are appropriate for the area and minimizing the movement of plant or soil material between worksites, such as infill that may contain invasive fungal pathogens and potentially harm our native species and ecosystems.</p>	<p>DLNR, Division of Forestry and Wildlife (DOFAW)</p>	<p>Thank you for identifying and providing mitigation measures to minimize potential impacts to State and Federally protected species. The provided information and guidance is discussed in <i>Section 3.6</i> of the EA.</p>
<p><b>Drainage and Surface Water Runoff</b></p>		
<p>Best Management Practices (BMPs) should be incorporated in the DEA as the project site is located adjacent to a tributary of Kalihi Stream. BMPs or mitigative measures should be implemented to minimize the potential for run-off, erosion, siltation, pollution, turbidity, and degradation of the aquatic environment.</p>	<p>DLNR, DAR</p>	<p>BMPs and mitigation measures to minimize the potential for run-off, erosion, siltation, pollution, turbidity, and degradation of the aquatic environment have been integrated throughout the EA.</p>

<b>Table 7.2 Summary of Early Consultation Comments and Responses</b>		
<b>Comment</b>	<b>Commentor</b>	<b>Response</b>
<p>1) Areas denuded of vegetation should be planted or covered as quickly as possible to prevent erosion;</p> <p>2) Scheduling construction activities during periods of minimal rainfall; and</p> <p>3) Prevent construction materials, petroleum products, debris, landscaping products, and soil from falling, blowing or leaching into the aquatic environment.</p>		
<p>Surface Water Runoff – Development design must mitigate loss of soil from the property due to water erosion. Water runoff along Kalihi street should be controlled. The existing storm drain system that collects water from Kalihi street and the Ouaua land area is full of soil and needs to be cleaned. The storm drain will mitigate uncontrolled water runoff into the stream.</p>	Michael Bradley	Thank you for sharing input on the scope of the EA. <i>Section 3.4</i> discusses drainage and hydrology at the park site. KKV will reduce erosion and soil loss by employing mitigation measures and Best Management Practices such as swales and vegetation management. The Department of Facility Maintenance is responsible for maintaining City storm drains.
<p>We recommend the use of BMP for stormwater management to minimize the impact of the project to the existing area’s hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events.</p>	DLNR, Commission on Water Resource Management (CWRM)	BMPs for stormwater management have been integrated throughout the EA.
<b>Flooding</b>		
<p>The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified in FEMA’s Flood Insurance Rate Maps (FIRM).</p>	DLNR, Engineering Division (ENG)	Thank you for providing guidance to identify the flood hazard designation for the park site. A discussion of flood hazards at the project site is located in <i>Section 3.5</i> of the EA.
<b>Water</b>		
<p>An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with Section 18.4. (NFPA 1; 2018 Edition, Section 18.3.1.)</p>	HFD	Thank you for providing information and guidance relating to water supply for fire protection. Measures to ensure an adequate water supply and pressure for fire protection is discussed in <i>Section 3.11</i> of the EA.
<p>The existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent migration of fuel contamination from the Red Hill Bulk Storage Tank fuel releases into the Waimalu aquifer. As a result, we cannot confirm the adequacy of the Honolulu water system to accommodate the proposed development at this time. Please be advised that this information is based upon current data, and therefore, the (BWS) reserves the right to change any position of information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.</p>	Board of Water Supply (BWS)	Thank you for providing information regarding the current water situation on O’ahu. This information has been integrated into <i>Section 3.11</i> of the EA.



**Table 7.2 Summary of Early Consultation Comments and Responses**

<b>Comment</b>	<b>Commentor</b>	<b>Response</b>
While we have stopped pumping from Halawa Shaft, we have other water sources that we are drawing on to replace the 20% provided by Halawa Shaft. We will closely monitor water usage and if consumption increases over pumpage, we will ask for voluntary conservation and, if necessary mandatory conservation. Water conservation measures are provided on BWS' website.		
When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.	BWS	Thank you for informing the applicant of the Water System Facilities Charges. The applicant is aware of the charge with the transmission and daily storage of water provided by the City.
Water conservation measures are required for all proposed development and may include: low flow plumbing fixtures, utilization of nonpotable water for irrigation using rain catchment and chiller/air handler condensate, cooling tower conductivity meters and water softening recycling systems, drought tolerant plants, xeriscape landscaping, efficient irrigation systems and the use of Water Sense labeled ultra-low-flow water fixtures and toilets.	BWS	The proposed master plan update includes the continued use of water conservation measures for sustainable practices at the park. Methods of water conservation measures are further discussed in <i>Section 3.11</i> of the EA.
The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the HFD.	BWS	Measures to meet on-site fire protection requirements are discussed in <i>Section 3.11</i> .
The BWS has an 8 inch ductile iron pipe and 16 inch ductile iron pipe that runs through Tax Map Key: 1-4-014: 026. Water pipeline easements shall be granted to the BWS for these water mains which are located within properties that are not dedicated to the City and County of Honolulu. Please coordinate with our lands Division at (808) 748-5910.	BWS	Thank you for providing information regarding the current water supply to the park site. The applicant will ensure BWS maintains access to mains located on lands that do not fall within the City's ownership.
<b>Standards and Regulations</b>		
Thank you for providing DAR with the opportunity to review and comment on the proposed project. Should there be any changes to the project plan, DAR requests the opportunity to review and comment on those changes.	DLNR, DAR	Should there be any changes in the proposed master plan update, DAR will be contacted.
At this time, it is unclear if anything is being proposed in the Conservation District upon parcel 001. Conservation District rules noted as the Hawai'i Administrative Rules (HAR) Chapter 13-5 defines Land Use as: <ol style="list-style-type: none"> <li>(1) The placement or erection of any solid material on land if that material remains on the land more than thirty days, or which causes a permanent change in the land area on which it occurs;</li> <li>(2) The grading, removing, harvesting, dredging, mining, or extraction of any material or natural resource on land;</li> <li>(3) The subdivision of land; or</li> <li>(4) The construction, reconstruction, demolition, or alteration of any structure, building, or facility on land.</li> </ol> Should land uses be proposed upon TMK: (1) 1-4-014:001, the OCCL should be consulted.	DLNR, Office of Conservation and Coastal Lands (OCCL)	Thank you for outlining rules governing the Conservation District. We understand from the telephone conversation between G70 and OCCL on January 21, 2022 that the proposed uses in the Conservation District are considered an accessory use and allowable under the current Conservation District Use Permit.

**Table 7.2 Summary of Early Consultation Comments and Responses**

<b>Comment</b>	<b>Commentor</b>	<b>Response</b>
The O’ahu District Land Office provided reference to Act 312, SLH 1991 and GEO 3770 with regards to the project site. The District Land Office believes completion of the EA process and full compliance with the current lease terms and conditions are prerequisites for any lease extension request.	DLNR, Land Division - O’ahu District Land Office	Thank you for providing historical background information regarding the ownership and conveyance of the site. The documents pertaining to the use of the site have been obtained and analyzed throughout the EA to ensure the proposed master plan update is in alignment with the dedicated public park usage.
Submit civil drawings to the HFD for review and approval.	HFD	Drawings will be submitted to HFD.
<b>Other</b>		
Our family lives just down Kalihi St. from Ho’oulu ‘Āina. I believe the work done on the property is beneficial to both the Honolulu community and to all the people who have the opportunity to carry on their traditions of planting and maintaining life. My dog and I walk by very often and say hello to the people coming in and going out. They always have a feeling of pleasure and pride about them. Very often I look in at the plants and trees people have put in there. The work people are doing is valuable to them and to the land. One of my good friends comes to the harvest Saturdays and loves them. Once I have gone up on the property and have been given a papaya by a friend up there. I feel as if Ho’oulu ‘Āina is an extension of our home and also a continuance of the cultural life of the people who meet and work together there.	Nancy Young	Thank you for sharing your personal relation to Ho’oulu ‘Āina. We appreciate this message and ensure you that Ho’oulu ‘Āina remains committed to being good neighbors and caretakers of the park.
My opinion is that the park has been an excellent addition to the neighborhood and has significantly improved the condition of the land since they have taken ownership.	Michael Bradley	Thank you for sharing your positive thoughts of Ho’oulu ‘Āina. We appreciate this message and ensure you that Ho’oulu ‘Āina remains committed to being good neighbors and caretakers of the park.

### 7.3 Draft EA Comment Summary

Comments received during the Draft EA comment period have been organized by major topics in *Table 7.3*. Please refer to the comment letters attached at the end of this chapter. The table below also includes responses to comments received during the Draft EA comment period.

**Table 7.3 Summary of Draft EA Comments and Responses**

<b>Comment</b>	<b>Commentor</b>	<b>Response</b>
<b>Drainage and Surface Water Runoff</b>		
We recommend the use of BMP for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events.	DLNR, CWRM	As part of the planned improvements, BMPs will be implemented to maintain on-site infiltration and prevent additional runoff from storm events. BMPs have been identified throughout the EA.
There may be the potential for ground or surface water degradation/contamination and recommend that approvals for the project be conditioned upon review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.	DLNR, CWRM	The planned improvements are not anticipated to adversely affect ground and surface water resources. Grading and building permits will be obtained prior to the start of construction. We understand the Department of Health will be further consulted with when the grading permit and building permit are filed to ensure appropriate BMPs are employed to protect ground and surface water resources.
<b>Water</b>		
The existing water system is currently adequate to accommodate the proposed development. However, please be advised that the existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent fuel contamination from the Navy's Red Hill Bulk Storage Tank fuel releases. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval, pending evaluation of the water system conditions at that time on a first-come first-served basis. The Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application.	BWS	Thank you for confirming the existing water system will be able to accommodate the planned improvements. The applicant is aware that the availability of water will be confirmed upon the approval of the building permit; building permits are forthcoming.
We continue to request 10% voluntary water conservation of all customers until new sources are completed and require water conservation measures in all new developments. If water consumption significantly increases, progressively restrictive conservation measures may be required to avoid low water pressures and disruptions of water service. Presently, there is no moratorium on the issuance of new and additional water services. Water distributed via the BWS water systems remains safe for consumption. The BWS is closely monitoring water usage and will keep the public informed with the latest findings. Please visit our website at for the latest updates and water conservation tips.	BWS	The applicant understands water is a precious resource. As part of the planned improvements, Ho'oulu 'Āina will increase the use of on-site water conservation measures to support sustainable growth. Water conservation measures are identified in <i>Section 3.11</i> .
When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.	BWS	Thank you for informing the applicant of the Water System Facilities Charges. The applicant is aware of the charge with the transmission and daily storage of water provided by the City.
Water conservation measures are required for all proposed development and may include: low flow plumbing fixtures, utilization of nonpotable water for irrigation using rain catchment and chiller/air handler condensate, cooling tower	BWS	As part of the planned improvements, Ho'oulu 'Āina will increase the use of on-site water conservation measures. <i>Section 3.11</i> identifies

**Table 7.3 Summary of Draft EA Comments and Responses**

Comment	Commentor	Response
conductivity meters and water softening recycling systems, drought tolerant plants, xeriscape landscaping, efficient irrigation systems and the use of Water Sense labeled ultra-low-flow water fixtures and toilets.		water conservation measures that will be implemented with the planned improvements.
The BWS has an 8 inch ductile iron pipe and 16 inch ductile iron pipe that runs through Tax Map Key: 1-4-014: 026. Water pipeline easements shall be granted to the BWS for these water mains which are located within properties that are not dedicated to the City and County of Honolulu. Please coordinate with our lands Division at (808) 748-5910.	BWS	Thank you for identifying the waterlines located on the project TMKs. BWS files indicate the 8 inch ductile iron pipe is located on TMK 1-4-014:026 and access to the waterline is provided to BWS via an easement. The 16 inch iron ductile pipe is located on TMK 1-4-016:003. However, an easement granting BWS access to the 16 inch waterline does not currently exist. The applicant and the landowner understand BWS should maintain access to both waterlines, and an easement granting BWS access to the 16 inch waterline is forthcoming.
The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.	BWS	The applicant is aware that the planned improvements are subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of building permits.
The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the HFD.	BWS	HFD was consulted with during the early consultation period as well as during the Draft EA comment period. Existing and planned facilities at Ho’oulu ‘Āina will meet on-site fire protection requirements. Measures to meet on-site fire protection requirements are further discussed in <i>Section 3.11</i> .
We recommend the use of alternative water sources, wherever practicable.	DLNR, CWRM	Ho’oulu ‘Āina remains committed to sustainable growth and will be increasing the use of on-site water conservation measures with the planned improvements. Water conservation measures are further discussed in <i>Section 3.11</i> .
We recommend consultation with the region’s (moku) Aha Moku Council on whether a land use conversion or project that uses water will impact any traditional & customary practices.	DLNR, CWRM	The planned improvements at Ho’oulu ‘Āina do not involve the conversion of land use nor are the planned improvements anticipated to significantly increase the demand for water at the project site. However, as the project continues, the applicant will continue to outreach and consult with Native Hawaiian organizations and community organizations for collaborative opportunities at Ho’oulu ‘Āina in an effort to steward an indigenous lifestyle.
If the applicant proposed to use rainfall catchment as a water source, we recommend that the applicant reference the manual Guidelines on Rainwater Catchment Systems for Hawai’i. If there are any plans to construct a well, the applicant must apply for well construction and pump installation permits from the Commission on Water Resource Management.	DLNR, CWRM	Thank you for providing guidance on rainwater catchment systems in Hawai’i. The applicant will utilize guidance for rainwater catchment systems as the design plan continue to progress.
<b>Roadways</b>		

**Table 7.3 Summary of Draft EA Comments and Responses**

<b>Comment</b>	<b>Commentor</b>	<b>Response</b>
Refer to the Right-of-Way Widths for Planned Street Improvements Plan and map for data on street types including future bicycle, pedestrian, and transit priority configurations. As of the date of this letter, the subject segment of Kalihi Street is classified as a “Lane/Alley” planned to have sidewalks, two travel lanes, no bus service, and no on-street parking.	Department of Transportation Services (DTS)	Thank you for sharing DTS' future plans for the segment of Kalihi Street near Ho'oulu 'Āina. The applicant understands DTS' future improvements fronting Ho'oulu 'Āina and will adhere to its classification as a “Lane/Alley”.
<b>Standards and Regulations</b>		
If your proposed project includes construction, demolition, or renovation activities that involve potential asbestos and lead containing materials, asbestos may be present in any existing structure. Prior to demolition, you must contact the Indoor and Radiological Health Branch, Asbestos-Lead Section. Structures built prior to 1980 may also contain lead paint. Prior to demolition, contact the Indoor and Radiological Health Branch, Asbestos-Lead Section.	Department of Health (DOH), Clean Air Branch (CAB)	The Indoor and Radiological Health Branch will be consulted with to ensure the existing facilities planned for renovation are properly demolished and renovated as older facilities may contain asbestos and lead-based paint.
Some construction activities have the potential to create excessive noise and may require noise permits.	DOH, CAB	Construction related noise activity is not anticipated to be significant. Contractors will adhere to building permit conditions which limits construction activity throughout the day and noise generated from construction related activity.
Construction activities must comply with the provisions of Hawai'i Administrative Rules, Chapter 11-60.1-33 on Fugitive Dust. You must provide reasonable measures to control airborne, visible fugitive dust from the road areas and during the various phases of construction.	DOH, CAB	Construction is not anticipated to generate significant dust emissions that may impact air quality. Moreover, construction activities will comply with the provision of HAR Chapter 11-60.1-33 and construction BMPs will be implemented to minimize potential dust emissions.
The proposed project is approximately 4.24 miles from the property boundary of the Daniel K. Inouye International Airport (HNL). All projects within 5 miles from the Hawaii State airports are advised to read the Technical Assistance Memorandum (TAM) for guidance with development and activities that may require further review and permits.	DOT Airports Division (HDOT-A)	Thank you for providing reference to the Technical Assistance Memorandum. The applicant is aware of the project's proximity to the HNL Airport and how activities and development at the project site should consider the technical guidance provided during detailed design. Given its locational distance and specific design considerations to enhance and perpetuate an indigenous lifestyle, it is not anticipated that the planned improvements will affect operations at HNL airport and require further review and permits.
Federal Aviation Administration (FAA) regulation requires the submittal of FAA Form 7460-1 Notice of Proposed Construction or Alteration pursuant to the <u>Code of Federal Regulations, Title 14, Part 77.9</u> , if the construction or alteration is within 20,000 feet of a public use or military airports which exceeds 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet. Construction equipment and staging area heights, including heights of temporary construction cranes, shall be included in the submittal.	DOT Airports Division (HDOT-A)	Upon review of the FAA regulatory review process, the planned improvements will take place approximately 4.24 miles from the HNL airport and will therefore not require the submittal of FAA Form 7460-1 Notice of Proposed Construction of Alteration.

**Table 7.3 Summary of Draft EA Comments and Responses**

<b>Comment</b>	<b>Commentor</b>	<b>Response</b>
<p>Section 2.4, DEA page 2-17 (PDF view, p. 44), identifies opportunities to use green technologies, such as utilizing solar panels for off-grid electricity. If a solar energy photovoltaic (PV) system is going to be installed, be aware that PV systems located in or near the approach path of aircrafts can create hazardous conditions for pilots due to possible glint and glare reflected from the PV panel array. If glint and glare from the PV array creates a hazardous condition for pilots, the owners of the PV system shall be prepared to immediately mitigate the hazard upon notification by the HDOT-A and/or FAA.</p> <p>The FAA requires a glint and glare analysis for all solar energy PV systems near airports. A separate FAA Form 7460-1 will be necessary for the solar energy PV system. After the FAA determination of the Form 7460-1 glint and glare analysis, a copy shall be provided to the HDOT-A by the owner of the solar energy PV system.</p> <p>Solar energy PV systems have also been known to emit radio frequency interference (RFI) to aviation-dedicated radio signals, thereby disrupting the reliability of air-to-ground communications. Again, the owner of the solar energy PV system shall be prepared to immediately mitigate the RFI hazard upon notification by the HDOT-A and/or FAA.</p>	DOT Airports Division (HDOT-A)	The planned improvements at Ho’oulu ‘Āina do not call for the construction and operation of a solar energy PV system, rather, solar PV panels may be installed on the roof of facilities. If it is determined that further consultation with FAA is required on this issue, the applicant will be prepared to address and mitigate a direct and identifiable hazard.
Due to the project’s proximity to HNL, the developer should be aware of potential single event noise from aircraft operations. There is also a potential for fumes, smoke, vibrations, odors, etc., resulting from occasional aircraft flight operations over or near the project. These incidences may increase or decrease over time and are dependent on airport operations.	DOT Airports Division (HDOT-A)	Thank you for informing the applicant of the potential noise events and other hazards from aircraft operations. The applicant understands the project area’s proximity to HNL airport includes potential hazards that may decrease or increase in severity over time.
A street usage permit from the Department of Transportation Services should be obtained for any construction-related work.	DTS	Construction for the planned improvements will be completed at the project site. It is not anticipated construction will temporarily obstruct and portion of a roadway or sidewalk under the jurisdiction of DTS. If it is determined that further consultation and review by DTS is required, the applicant will be prepared to obtain a street usage permit.
Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by DCAB to ensure full compliance with Americans with Disabilities Act requirements.	DTS	We understand that DCAB will be reviewing the project during a more detailed design and building permit stage to ensure full compliance with ADA requirements.
<b>Other</b>		
The Department of Hawaiian Home Lands acknowledges receiving the request for comments on the above-cited project. After reviewing the materials submitted, due to its lack of proximity to Hawaiian Home Lands, we do not anticipate any impacts to our lands or beneficiaries from the project.	Department of Hawaiian Home Lands (DHHL)	The applicant appreciates the recommendation provided by DHHL and will continue to consult with Native Hawaiian organizations and community organizations for collaborative opportunities that will enhance and perpetuate an indigenous lifestyle.

**Table 7.3 Summary of Draft EA Comments and Responses**

Comment	Commentor	Response
<p>However, we highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)ative Hawaiian organizations when preparing environmental assessments in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.</p>		
<p>The area representatives, neighborhood board, as well as the area residents, businesses, emergency personnel (fire, ambulance, and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details and status throughout the project and the impacts that the project may have on the adjoining local street area network.</p>	DTS	<p>As part of the environmental review process, outreach during the early consultation period and publication of the Draft EA was conducted. Notification and coordination with area representatives, neighborhood board, as well as the area residents, businesses, emergency personnel, O'ahu Transit Services, Inc., etc., regarding the impacts of construction and operation on the adjoining local street area network will occur throughout the project.</p>



# 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:  
01EPIF00-2022-TA-0079

November 23, 2021

Mr. Mark Kawika McKeague  
G70  
111 S. King Street, Suite 170  
Honolulu, Hawai'i 96813

Subject: Technical Assistance for the Draft Environmental Assessment of the Proposed Lease Extension for Ho'oulu 'Āina Nature Park in Kalihi Valley, O'ahu

Dear Mr. McKeague:

Thank you for your recent correspondence requesting technical assistance on species biology, habitat, or life requisite requirements. The Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service) appreciates your efforts to avoid or minimize effects to protected species associated with your proposed actions. We provide the following information for your consideration under the authorities of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 *et seq.*), as amended.

Due to significant workload constraints, PIFWO is currently unable to specifically address your information request. The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. Based on your project location and description, we have noted the species most likely to occur within the vicinity of the project area, in the '**Occurs In or Near Project Area**' column. Please note this list is not comprehensive and should only be used for general guidance. We have added to the PIFWO website, located at <https://www.fws.gov/pacificislands/promo.cfm?id=177175840> recommended conservation measures intended to avoid or minimize adverse effects to these federally protected species and best management practices to minimize and avoid sedimentation and erosion impacts to water quality. If your project occurs on the island of Hawai'i, we have also enclosed our biosecurity protocol for activities in or near natural areas.

If you are representing a federal action agency, please request an official species list following the instructions at our PIFWO website <https://www.fws.gov/pacificislands/articles.cfm?id=149489558>. You can find out if your project occurs in or near designated critical habitat here: <https://ecos.fws.gov/ipac/>.

INTERIOR REGION 9  
COLUMBIA-PACIFIC NORTHWEST

IDAHO, MONTANA\*, OREGON\*, WASHINGTON  
\*PARTIAL

INTERIOR REGION 12  
PACIFIC ISLANDS

AMERICAN SĀMOA, GUAM, HAWAII, NORTHERN  
MARIANA ISLANDS



Under section 7 of the ESA, it is the Federal agency's (or their non-Federal designee) responsibility to make the determination of whether or not the proposed project "may affect" federally listed species or designated critical habitat. A "may affect, not likely to adversely affect" determination is appropriate when effects to federally listed species are expected to be discountable (i.e., unlikely to occur), insignificant (minimal in size), or completely beneficial. This conclusion requires written concurrence from the Service. If a "may affect, likely to adversely affect" determination is made, then the Federal agency must initiate formal consultation with the Service. Projects that are determined to have "no effect" on federally listed species and/or critical habitat do not require additional coordination or consultation.

Implementing the avoidance, minimization, or conservation measures for the species that may occur in your project area will normally enable you to make a "may affect, not likely to adversely affect" determination for your project. 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 that 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 that identifies the effects of the action on listed species and their habitats and defines measures to minimize and mitigate those adverse effects.

We appreciate your efforts to conserve endangered species. We regret that we cannot provide you with more specific protected species information for your project site. If you have questions that are not answered by the information on our website, you can contact PIFWO at (808) 792-9400 and ask to speak to the lead biologist for the island where your project is located.

Sincerely,

Acting Island Team Manager  
Pacific Islands Fish and Wildlife Office

Enclosures (2)

The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. For your guidance, we have marked species that may occur in the vicinity of your project, this list is not comprehensive and should only be used for general guidance.

### Enclosure 1. Federal Status of Animal Species

<u>Scientific Name</u>	<u>Common Name / Hawaiian Name</u>	<u>Federal Status</u>	<u>May Occur In Project Area</u>
<b>Mammals</b>			
<i>Lasiurus cinereus semotus</i>	Hawaiian hoary bat/‘ōpe‘ape‘a	E	<input checked="" type="checkbox"/>
<b>Reptiles</b>			
<i>Chelonia mydas</i>	green sea turtle/honu - Central North Pacific distinct population segment (DPS)	T	<input type="checkbox"/>
<i>Eretmochelys imbricata</i>	hawksbill sea turtle/ honu ‘ea or ‘ea	E	<input type="checkbox"/>
<b>Birds</b>			
<i>Anas wyvilliana</i>	Hawaiian duck/koloa	E	<input type="checkbox"/>
<i>Branta sandvicensis</i>	Hawaiian goose/nēnē	T	<input type="checkbox"/>
<i>Fulica alai</i>	Hawaiian coot/‘alae ke‘oke‘o	E	<input type="checkbox"/>
<i>Gallinula galeata sandvicensis</i>	Hawaiian gallinule/‘alae ‘ula	E	<input type="checkbox"/>
<i>Himantopus mexicanus knudseni</i>	Hawaiian stilt/ae‘o	E	<input checked="" type="checkbox"/>
<i>Oceanodroma castro</i>	band-rumped storm-petrel Hawai‘i DPS/‘akē‘akē	E	<input checked="" type="checkbox"/>
<i>Pterodroma sandwichensis</i>	Hawaiian petrel/‘ua‘u	E	<input checked="" type="checkbox"/>
<i>Puffinus auricularis newelli</i>	Newell’s shearwater/‘a‘o	T	<input checked="" type="checkbox"/>
<i>Ardenna pacificus</i>	wedge-tailed shearwater/‘ua‘u kani	MBTA	<input checked="" type="checkbox"/>
<i>Buteo solitarius</i>	Hawaiian hawk/‘io	MBTA	<input type="checkbox"/>
<i>Gygis alba</i>	white tern/manu-o-kū	MBTA	<input type="checkbox"/>
<b>Insects</b>			
<i>Manduca blackburni</i>	Blackburn’s sphinx moth	E	<input type="checkbox"/>
<i>Megalagrion pacificum</i>	Pacific Hawaiian damselfly	E	<input type="checkbox"/>
<i>Megalagrion xanthomelas</i>	orangeblack Hawaiian damselfly	E	<input type="checkbox"/>
<i>Megalagrion nigrohamatum nigrolineatum</i>	blackline Hawaiian damselfly	E	<input type="checkbox"/>

**Enclosure 2. Federal Status of Plant Species**

<b>Plants</b>				
<b><u>Scientific Name</u></b>	<b><u>Common Name or Hawaiian Name</u></b>	<b><u>Federal Status</u></b>	<b><u>Locations</u></b>	<b><u>May Occur In Project Area</u></b>
<i>Abutilon menziesii</i>	ko'oloa'ula	E	O, L, M, H	<input type="checkbox"/>
<i>Achyranthes splendens</i> var. <i>rotundata</i>	'ewa hinahina	E	O	<input type="checkbox"/>
<i>Bonamia menziesii</i>	no common name	E	K, O, L, M, H	<input type="checkbox"/>
<i>Canavalia pubescens</i>	'āwikiwiki	E	Ni, K, L, M	<input type="checkbox"/>
<i>Colubrina oppositifolia</i>	kauila	E	O, M, H	<input type="checkbox"/>
<i>Cyperus trachysanthos</i>	pu'uka'a	E	K, O	<input type="checkbox"/>
<i>Gouania hillebrandii</i>	no common name	E	Mo, M	<input type="checkbox"/>
<i>Hibiscus brackenridgei</i>	ma'o hau hele	E	O, Mo, L, M, H	<input type="checkbox"/>
<i>Ischaemum byrone</i>	Hilo ischaemum	E	K, O, Mo, M, H	<input type="checkbox"/>
<i>Isodendrion pyriformium</i>	wahine noho kula	E	O, H	<input type="checkbox"/>
<i>Marsilea villosa</i>	'ihi'ihii	E	Ni, O, Mo	<input type="checkbox"/>
<i>Mezoneuron kawaiense</i>	uhiuhi	E	O, H	<input type="checkbox"/>
<i>Nothocestrum breviflorum</i>	'aiea	E	H	<input type="checkbox"/>
<i>Panicum fauriei</i> var. <i>carteri</i>	Carter's panicgrass	E	Molokini Islet (O), Mo	<input type="checkbox"/>
<i>Panicum niuhauense</i>	lau'ehu	E	K	<input type="checkbox"/>
<i>Peucedanum sandwicense</i>	makou	E	K, O, Mo, M	<input type="checkbox"/>
<i>Pleomele (Chrysodracon)</i> <i>hawaiiensis</i>	halapepe	E	H	<input type="checkbox"/>
<i>Portulaca sclerocarpa</i>	'ihi	E	L, H	<input type="checkbox"/>
<i>Portulaca villosa</i>	'ihi	E	Le, Ka, Ni, O, Mo, M, L, H, Nihoa	<input type="checkbox"/>
<i>Pritchardia affinis</i> ( <i>maideniana</i> )	loulu	E	H	<input type="checkbox"/>
<i>Pseudognaphalium</i> <i>sandwicense</i> var. <i>molokaiense</i>	'ena'ena	E	Mo, M	<input type="checkbox"/>
<i>Scaevola coriacea</i>	dwarf naupaka	E	Mo, M	<input type="checkbox"/>
<i>Schenkia (Centaurium)</i> <i>sebaeoides</i>	'āwiwi	E	K, O, Mo, L, M	<input type="checkbox"/>
<i>Sesbania tomentosa</i>	'ōhai	E	Ni, Ka, K, O, Mo, M, L, H, Necker, Nihoa	<input type="checkbox"/>
<i>Tetramolopium rockii</i>	no common name	T	Mo	<input type="checkbox"/>
<i>Vigna o-wahuensis</i>	no common name	E	Mo, M, L, H, Ka	<input type="checkbox"/>

Location key: O=O'ahu, K=Kaua'i, M=Maui, H=island of Hawai'i, L=Lāna'i, Mo=Moloka'i, Ka=Kaho'olawe, Ni=Ni'ihau, Le=Lehua

DAVID Y. IGE  
GOVERNOR OF HAWAII



SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

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

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December 22, 2021

LD 1347e

Group 70 International, Inc., dba G70  
111 S. King Street, Suite 170  
Honolulu, HI 96813-4307

*Via email: HoouluAinaEA@g70.design*

Dear Sirs:

**SUBJECT: Early Consultation for Draft Environmental Assessment  
Ho'oulu 'Aina Nature Park, 'Ouaua, Kalihi, Island of Oahu, Hawaii  
TMK: (1) 1-4-014:001, 026 and 1-4-016:003**

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to various DLNR divisions, as indicated on the attached, for their review and comment.

Attached are comments received from our (a) Division of Aquatic Resources, (b) Engineering Division and (c) Office of Conservation and Coastal Lands. Should you have any questions, please feel free to contact Barbara Lee via email at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

Sincerely,

*Russell Tsuji*

Russell Y. Tsuji  
Land Administrator

Attachments

Cc: Central Files



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

November 26, 2021

LD 1347e

MEMORANDUM

TO: DLNR Agencies:  
 Div. of Aquatic Resources (via email: kendall.l.tucker@hawaii.gov)  
 Div. of Boating & Ocean Recreation  
 Engineering Division (via email: DLNR.Engr@hawaii.gov)  
 Div. of Forestry & Wildlife (via email: rubyrosa.t.terrago@hawaii.gov)  
 Div. of State Parks (via email: curt.a.cottrell@hawaii.gov)  
 Commission on Water Resource Management (via email: DLNR.CWRM@hawaii.gov)  
 Office of Conservation & Coastal Lands (via email: sharleen.k.kuba@hawaii.gov)  
 Land Division – Oahu District (via email: barry.w.cheung@hawaii.gov)  
 Land Division – Support Branch (via email: sang.kim@hawaii.gov)  
 State Historic Preservation Division (via email: susan.a.lebo@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator  
SUBJECT: Early Consultation for Draft Environmental Assessment (DEA)  
**Ho’oulu ‘Āina Nature Park**  
LOCATION: ‘Ouaua, Kalihi, Island of Oahu, Hawaii  
TMK: (1) 1-4-014:001, 026 and 1-4-016:003  
APPLICANT: G70 on behalf of **Ho’oulu ‘Āina (DLNR State Parks’ Lessee)**


*Russell Tsuji*

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline, extended to December 16, 2021, to [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov) at the Land Division.

If no response is received by the above due date, we will assume your agency has no comments at this time. Should you have any questions about this request, please contact Barbara Lee at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

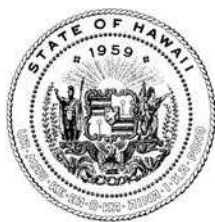
BRIEF COMMENTS:

( ) We have no objections.  
( ) We have no comments.  
( ) We have no additional comments.  
( X ) Comments are included/attached.

Signed:   
Print Name: Brian J. Nielson  
Division: Aquatic Resources  
Date: Dec 7, 2021

Attachments  
Cc: Central Files

DAVID Y. IGE  
GOVERNOR OF  
HAWAII



SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
FIRST DEPUTY

M. KALEO MANUEL  
DEPUTY DIRECTOR - WATER

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



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF AQUATIC RESOURCES  
1151 PUNCHBOWL STREET, ROOM 330  
HONOLULU, HAWAII 96813

Date: November 29, 2021  
DAR # AR0133

MEMORANDUM

TO: Brian J. Neilson  
DAR Administrator

FROM: Glenn Higashi *GH*, Aquatic Biologist

SUBJECT: Early Consultation for Chapter 343, Hawaii Revised Statutes (HRS), Draft  
Environmental Assessment (DEA) Ho'oulu 'Āina Nature Park

Request Submitted by: Russell Y. Tsuji, Land Administrator  
'Ouaua, Kalihi, Island of O'ahu, Hawai'i

Location of Project: Tax Map Key (TMK): (1) 1-4-014:001, 026 and (1) 1-4-016:003

Brief Description of Project:

On behalf of Ho'oulu 'Āina, G70 is preparing a Draft EA, pursuant to HRS, Chapter 343, and Hawai'i Administrative Rules (HAR), Chapter 11-200.1. In 2005, Ho'oulu 'Āina was granted a 20-year lease from the State Department of Land and Natural Resources (DLNR), Parks Division to care for and sustainably develop TMKs (1) 1-4-014:001, 026 and (1) 1-4-016:003, which encompasses approximately 100 acres in the back of Kalihi Valley. Since approval of the lease, Ho'oulu 'Āina has provided a space for people of all cultures to engage in 'āina based practices. Through learning and engaging in 'āina based practices, the health of the land has improved. Additionally, Native Hawaiians and community volunteer members have been able to reconnect with indigenous lifestyle practices, improving and addressing health inequities indigenous populations face.

Comments:

No Comments     Comments Attached

Thank you for providing DAR the opportunity to review and comment on the proposed project. Should there be any changes to the project plan, DAR requests the opportunity to review and comment on those changes.

Comments Approved: *Brian J. Neilson* Date: Dec 7, 2021  
Brian J. Neilson  
DAR Administrator

DAR# AR0133

Brief Description of Project

The Draft EA will analyze an updated master plan to assist Ho'oulu 'Āina in securing a lease extension for the 100-acre site. A lease extension will continue to allow Ho'oulu 'Āina to restore the historic and cultural integrity of Kalihi Valley and provide a space for people of all cultures to practice and perpetuate an indigenous Native Hawaiian lifestyle.

Pursuant to HAR, Chapter 11-200.1-18, Ho'oulu 'Āina is conducting early consultation to seek input from agencies, citizen groups, and individuals who may have an area of expertise or have an association with Ho'oulu 'Āina, which may guide the scope and preparation of the Draft EA.

DAR# AR0133

Comments

The proposed Draft Environmental Assessment (DEA) for the proposed Ho'oulu 'Āina Nature Park is not expected to have significant impact on the aquatic resource values in this area.

Best Management Practices (BMPs) should be incorporated in the DEA project work plan as the project site is located adjacent to a tributary of Kalihi Stream. BMPs or mitigative measures should be implemented to minimize the potential for run-off, erosion, siltation, pollution, turbidity, and degradation of the aquatic environment.

- 1) Areas denuded of vegetation should be planted or covered as quickly as possible to prevent erosion;
- 2) Scheduling construction activities during periods of minimal rainfall; and
- 3) Prevent construction materials, petroleum products, debris, landscaping products, and soil from falling, blowing or leaching into the aquatic environment.







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

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

November 26, 2021

LD 1347e

**MEMORANDUM**

FROM:

TO:

**DLNR Agencies:**

- Div. of Aquatic Resources (via email: [kendall.l.tucker@hawaii.gov](mailto:kendall.l.tucker@hawaii.gov))
- Div. of Boating & Ocean Recreation
- Engineering Division** (via email: [DLNR.Engr@hawaii.gov](mailto:DLNR.Engr@hawaii.gov))
- Div. of Forestry & Wildlife (via email: [rubyrosa.t.terrago@hawaii.gov](mailto:rubyrosa.t.terrago@hawaii.gov))
- Div. of State Parks (via email: [curt.a.cottrell@hawaii.gov](mailto:curt.a.cottrell@hawaii.gov))
- Commission on Water Resource Management (via email: [DLNR.CWRM@hawaii.gov](mailto:DLNR.CWRM@hawaii.gov))
- Office of Conservation & Coastal Lands (via email: [sharleen.k.kuba@hawaii.gov](mailto:sharleen.k.kuba@hawaii.gov))
- Land Division – Oahu District (via email: [barry.w.cheung@hawaii.gov](mailto:barry.w.cheung@hawaii.gov))
- Land Division – Support Branch (via email: [sang.kim@hawaii.gov](mailto:sang.kim@hawaii.gov))
- State Historic Preservation Division (via email: [susan.a.lebo@hawaii.gov](mailto:susan.a.lebo@hawaii.gov))

*Russell Tsuji*

TO:

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

**Early Consultation for Draft Environmental Assessment (DEA)  
Ho’oulu ‘Āina Nature Park**

LOCATION:

‘Ouaua, Kalihi, Island of Oahu, Hawaii  
TMK: (1) 1-4-014:001, 026 and 1-4-016:003

APPLICANT:

**G70 on behalf of Ho’oulu ‘Āina (DLNR State Parks’ Lessee)**

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline, extended to **December 16, 2021**, to [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov) at the Land Division.

If no response is received by the above due date, we will assume your agency has no comments at this time. Should you have any questions about this request, please contact Barbara Lee at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

**BRIEF COMMENTS:**

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are included/attached.

Signed:

Print Name:

Carty S. Chang, Chief Engineer

Division:

Engineering Division

Date:

Dec 6, 2021

Attachments

Cc: Central Files

**DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION**

**LD/Russell Y. Tsuji**

**Ref: Early Consultation for Draft Environmental Assessment (DEA)**

**Ho‘oulu ‘Āina Nature Park**

**Location: ‘Ouaua, Kalihi, Island of Oahu, Hawaii**

**TMK(s): (1) 1 -4-014:001, 026 and 1-4-016:003**

**Applicant: G70 on behalf of Ho‘oulu ‘Āina (DLNR State Parks' Lessee)**

**COMMENTS**

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified on FEMA’s Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA’s Map Service Center ([msc.fema.gov](http://msc.fema.gov)). Our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>) could also be used to research flood hazard information.

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4849.

Signed:   
CARTY S. CHANG, CHIEF ENGINEER

Date: Dec 6, 2021

RECEIVED  
LAND DIVISION

DAVID Y. IGE  
GOVERNOR OF HAWAII



2021 DEC -8 AM 11:07

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

RECEIVED  
OFFICE OF CONSERVATION  
AND COASTAL LANDS

2021 NOV 29 A 11:59

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

November 26, 2021

LD 1347e

MEMORANDUM

TO:

**DLNR Agencies:**

- Div. of Aquatic Resources (via email: kendall.l.tucker@hawaii.gov)
- Div. of Boating & Ocean Recreation
- Engineering Division (via email: DLNR.Engr@hawaii.gov)
- Div. of Forestry & Wildlife (via email: rubyrosa.t.terrago@hawaii.gov)
- Div. of State Parks (via email: curt.a.cottrell@hawaii.gov)
- Commission on Water Resource Management (via email: DLNR.CWRM@hawaii.gov)
- Office of Conservation & Coastal Lands (via email: sharleen.k.kuba@hawaii.gov)
- Land Division – Oahu District (via email: barry.w.cheung@hawaii.gov)
- Land Division – Support Branch (via email: sang.kim@hawaii.gov)
- State Historic Preservation Division (via email: susan.a.lebo@hawaii.gov)

*Russell Tsuji*

FROM:

Russell Y. Tsuji, Land Administrator

SUBJECT:

**Early Consultation for Draft Environmental Assessment (DEA)**

**Ho’oulu ‘Āina Nature Park**

LOCATION:

‘Ouaua, Kalihi, Island of Oahu, Hawaii

TMK: (1) 1-4-014:001, 026 and 1-4-016:003

APPLICANT:

**G70 on behalf of Ho’oulu ‘Āina (DLNR State Parks’ Lessee)**

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline, extended to **December 16, 2021**, to [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov) at the Land Division.

If no response is received by the above due date, we will assume your agency has no comments at this time. Should you have any questions about this request, please contact Barbara Lee at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

BRIEF COMMENTS:

*E-mailed 12/8/2021*

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are included/attached.

Signed:

Print Name:

K. Tiger Mills

Division:

DLNR - Oahu

Date:

12/08/2021

Attachments

Cc: Central Files

DAVID Y. IGE  
GOVERNOR OF  
HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
OFFICE OF CONSERVATION AND COASTAL LANDS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
FIRST DEPUTY

M. KALEO MANUEL  
DEPUTY DIRECTOR - WATER

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

REF:OCCL:TM

Correspondence: OA 22-91

**MEMORANDUM**

**TO:** Russ Tsuji, Administrator  
Land Division

**FROM:** K. Tiger Mills, Staff Planner  
Office of Conservation and Coastal Lands

DEC - 8 2021

**SUBJECT:** Early Consultation for Draft Environmental Assessment (EA) for the Proposed Ho'oulu 'Aina Nature Park Located at 'Ouaua, Kalihi, O'ahu TMK; (1) 1-4-014:001

The Office of Conservation and Coastal Lands (OCCL) has reviewed the information regarding the subject matter and note parcel 001 lies within the Resource subzone of the Conservation District and is encumbered by the Division of State Parks. On October 13, 2006, the Board of Land and Natural Resources approved Conservation District Use Permit (CDUP) OA-3351 for the Kalihi Valley Nature Park and Active Living Center.

At this time, it is unclear if anything is being proposed in the Conservation District upon parcel 001. Conservation District rules noted as the Hawai'i Administrative Rules (HAR) Chapter 13-5 defines Land Uses as:

- (1) The placement or erection of any solid material on land if that material remains on the land more than thirty days, or which causes a permanent change in the land area on which it occurs;
- (2) The grading, removing, harvesting, dredging, mining, or extraction of any material or natural resource on land;
- (3) The subdivision of land; or
- (4) The construction, reconstruction, demolition, or alteration of any structure, building, or facility on land.

Should land uses be proposed upon TMK: (1) 1-4-014:001, the OCCL should be consulted. If there are any questions regarding this memorandum, contact Tiger Mills of the OCCL at (808) 587-0382 or at kimberly.mills@hawaii.gov.

2021 NOV 23 PM 2:28

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

November 10, 2021

111 S. King Street  
Suite 170  
Honolulu, HI 96813  
808.523.5866  
www.g70.design

Subject: Early Consultation for Chapter 343, Hawai'i Revised Statutes (HRS)  
Draft Environmental Assessment (EA)  
Ho'oulu 'Āina Nature Park  
'Ouaua, Kalihi, Island of O'ahu, Hawai'i  
Tax Map Key (TMK): (1) 1-4-014:001, 026 and (1) 1-4-016:003

Dear Participant:

On behalf of Ho'oulu 'Āina, G70 is preparing a Draft EA, pursuant to HRS, Chapter 343, and Hawai'i Administrative Rules (HAR), Chapter 11-200.1. In 2005, Ho'oulu 'Āina was granted a 20-year lease from the State Department of Land and Natural Resources (DLNR), Parks Division to care for and sustainably develop TMKs (1) 1-4-014:001, 026 and (1) 1-4-016:003, which encompasses approximately 100 acres in the back of Kalihi Valley. Since approval of the lease, Ho'oulu 'Āina has provided a space for people of all cultures to engage in 'āina based practices. Through learning and engaging in 'āina based practices, the health of the land has improved. Additionally, Native Hawaiians and community volunteer members have been able to reconnect with indigenous lifestyle practices, improving and addressing health inequities indigenous populations face.

The Draft EA will analyze an updated master plan to assist Ho'oulu 'Āina in securing a lease extension for the 100-acre site. A lease extension will continue to allow Ho'oulu 'Āina to restore the historic and cultural integrity of Kalihi Valley and provide a space for people of all cultures to practice and perpetuate an indigenous Native Hawaiian lifestyle.

Pursuant to HAR, Chapter 11-200.1-18, Ho'oulu 'Āina is conducting early consultation to seek input from agencies, citizen groups, and individuals who may have an area of expertise or have an association with Ho'oulu 'Āina, which may guide the scope and preparation of the Draft EA.

Please provide comments via U.S. mail, email, or fax. We request you submit comments no later than December 10, 2021. \*

G70  
111 S. King Street, Suite 170  
Honolulu, HI 96813-4307  
Fax: (808) 523-5874  
Email: [HoouluAinaEA@g70.design](mailto:HoouluAinaEA@g70.design)

Thank you for your participation in the early consultation for this environmental review process.

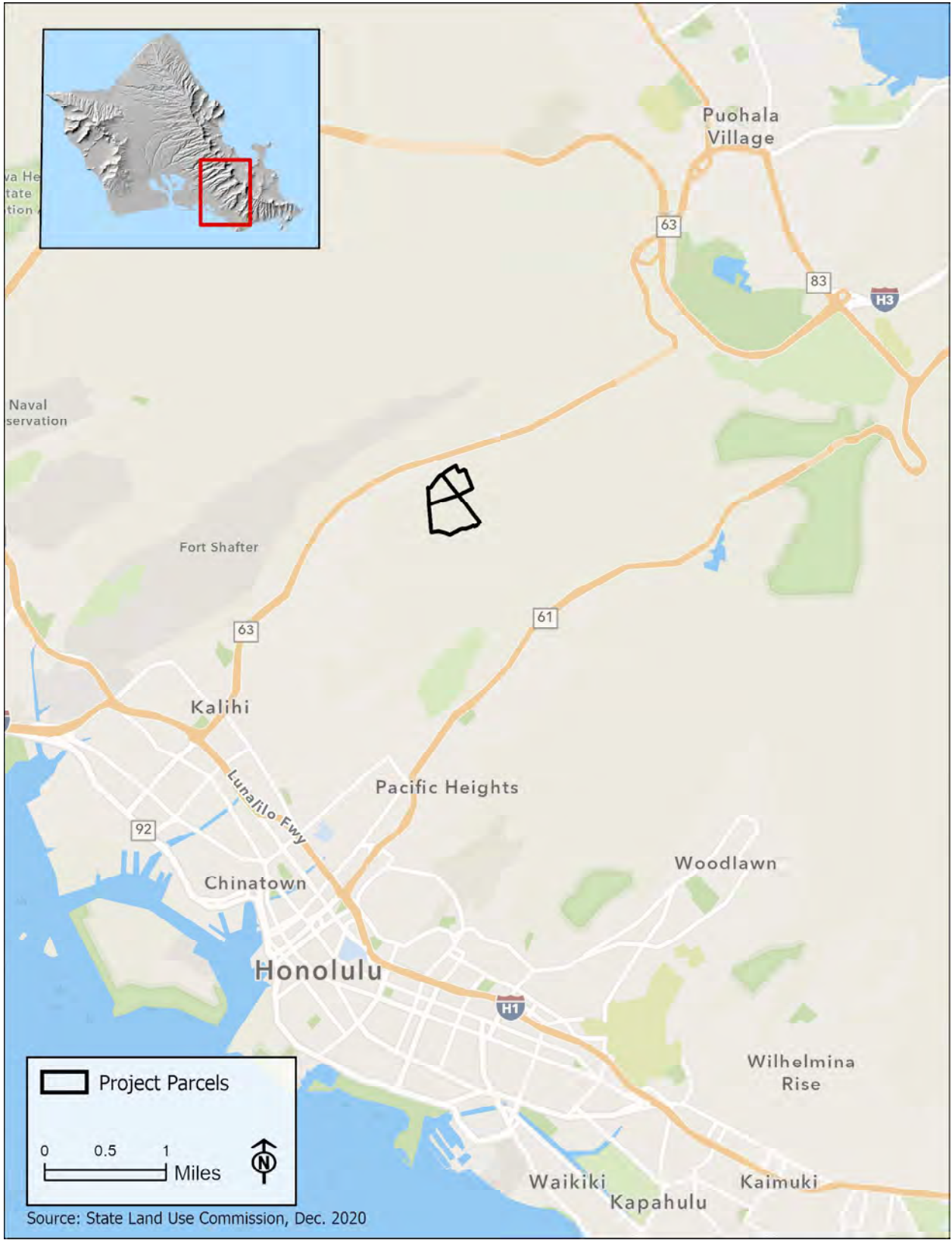
Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP  
Principal

\* One week extension granted by G70,  
to 12/17/2021.

Ho'oulu 'Āina Nature Park  
November 10, 2021



Project Location

Ho'oulu 'Āina Nature Park

DAVID Y. IGE  
GOVERNOR OF HAWAII



SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

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

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

December 23, 2021

LD 1347e

Group 70 International, Inc., dba G70  
111 S. King Street, Suite 170  
Honolulu, HI 96813-4307

*Via email: HoouluAinaEA@g70.design*

Dear Sirs:

**SUBJECT: Early Consultation for Draft Environmental Assessment  
Ho'oulu 'Aina Nature Park, 'Ouaua, Kalihi, Island of Oahu, Hawaii  
TMK: (1) 1-4-014:001, 026 and 1-4-016:003**

Thank you for the opportunity to review and comment on the above subject. In addition to previous comments sent to you from the Department of Land and Natural Resources (DLNR) dated December 22, 2021, enclosed are comments from DLNR's Land Division-Oahu District Land Office.

Should you have any questions, please feel free to contact Barbara Lee at 587-0453 or [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

Sincerely,

*Russell Tsuji*

Russell Y. Tsuji  
Land Administrator

Enclosure  
cc: Central Files



DAVID Y. IGE  
GOVERNOR OF HAWAII



SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT


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

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

December 23, 2021

MEMORANDUM

TO: Russell Y. Tsuji, Land Administrator

FROM: Darlene Bryant-Takamatsu, Oahu District Land Office 

SUBJECT: Request for Comment - Early Consultation for Draft Environmental Assessment (DEA) Ho'oulu 'Aina Nature Park

Act 312, SLH 1991, Section 2(b) provides, "On January 1, 1992, ... Kalihi valley park (TMK nos. 1-4-16:3 and 1-4-14:1 and 26) shall be vested in the State ... as long as the same is maintained for passive and meditative uses". At its meeting of November 8, 1991, under agenda item F-18, the Board authorized setting aside the subject parcels, among others covered in the same Act, to the Division of State Parks for park purposes. EO 3770 was issued to Division of State Parks on May 26, 1999.

On December 10, 2004, under agenda item E-4, the Board approved a 20-year lease to Kokua Kalihi Valley. On October 13, 2006, under agenda item K-1, CDUA OA-3351 was approved over parcel 1 which is the only parcel zoned conservation lands under State Land Use district.

The upcoming DEA should make sure the proposed uses fit into Act 312. Depending on the eventual improvements/activities on the subject property, an amendment to the public purposes stated in GEO 3770 may be required. We believe completion of the EA process and full compliance with the current lease terms and conditions are prerequisites for any lease extension request.

2021 NOV 23 PM 2:28

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

November 10, 2021

111 S. King Street  
Suite 170  
Honolulu, HI 96813  
808.523.5866  
www.g70.design

Subject: Early Consultation for Chapter 343, Hawai'i Revised Statutes (HRS)  
Draft Environmental Assessment (EA)  
Ho'oulu 'Āina Nature Park  
'Ouaua, Kalihi, Island of O'ahu, Hawai'i  
Tax Map Key (TMK): (1) 1-4-014:001, 026 and (1) 1-4-016:003

Dear Participant:

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Please provide comments via U.S. mail, email, or fax. We request you submit comments no later than December 10, 2021. \*

G70  
111 S. King Street, Suite 170  
Honolulu, HI 96813-4307  
Fax: (808) 523-5874  
Email: [HoouluAinaEA@g70.design](mailto:HoouluAinaEA@g70.design)

Thank you for your participation in the early consultation for this environmental review process.

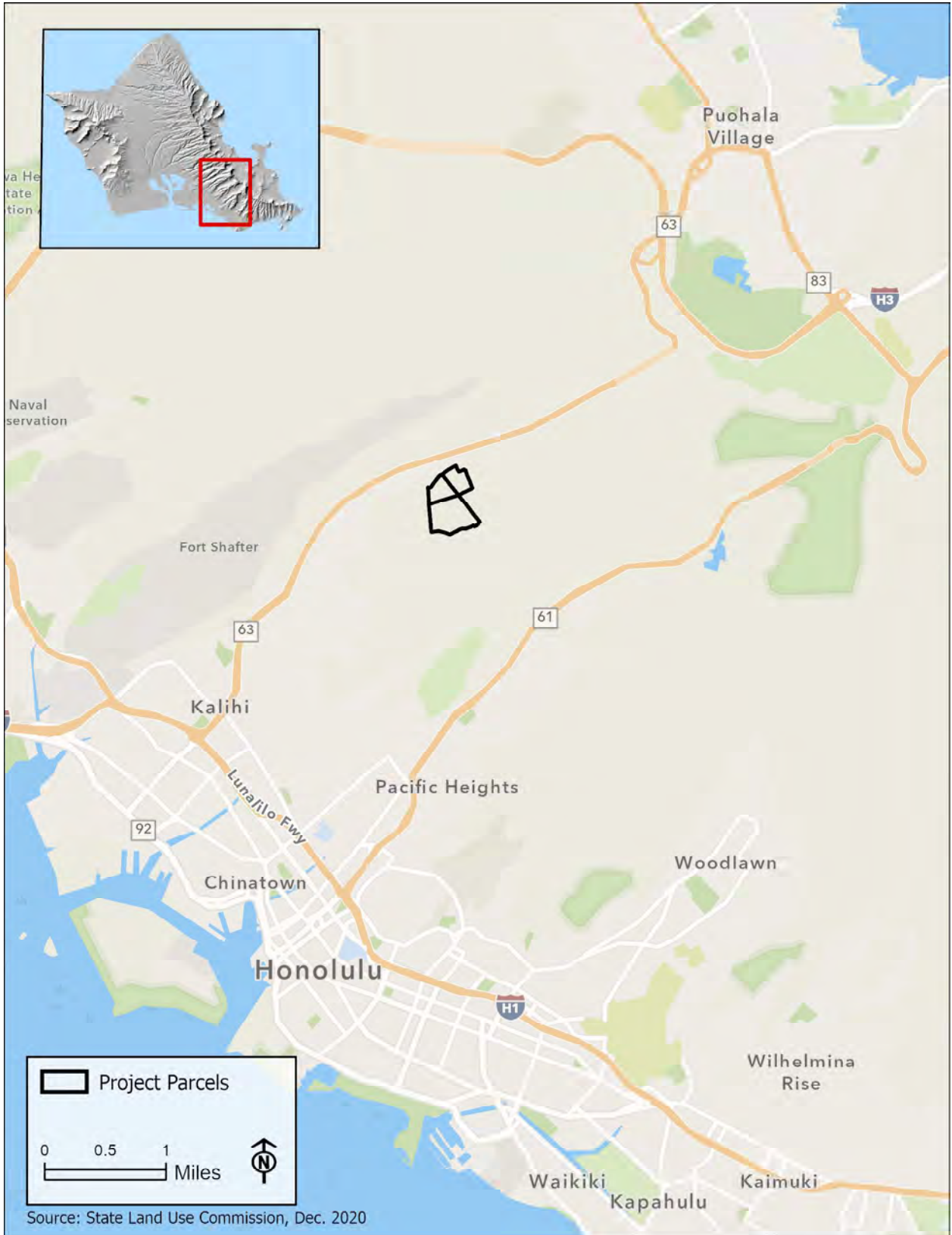
Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP  
Principal

\* One week extension granted by G70,  
to 12/17/2021.

Ho'oulu 'Āina Nature Park  
November 10, 2021



Project Location

Ho'oulu 'Āina Nature Park

DAVID Y. IGE  
GOVERNOR OF HAWAII



SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

January 06, 2022

LD 1347c

Group 70 International, Inc., dba G70  
111 S. King Street, Suite 170  
Honolulu, HI 96813-4307

*Via email: HoouluAinaEA@g70.design*

Dear Sirs:

**SUBJECT: Early Consultation for Draft Environmental Assessment  
Ho'oulu 'Aina Nature Park, 'Ouaua, Kalihi, Island of Oahu, Hawaii  
TMK: (1) 1-4-014:001, 026 and 1-4-016:003**

Thank you for the opportunity to review and comment on the above subject. In addition to previous comments sent to you from the Department of Land and Natural Resources (DLNR) dated December 22, 2021 and December 23, 2021, enclosed are comments from DLNR's Division of Forestry and Wildlife.

Should you have any questions, please feel free to contact Barbara Lee at 587-0453 or [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Tsuji".

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

for

Russell Y. Tsuji  
Land Administrator

Enclosure  
cc: Central Files



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

November 26, 2021

LD 1347e

MEMORANDUM

TO: **DLNR Agencies:**  
X Div. of Aquatic Resources (via email: [kendall.l.tucker@hawaii.gov](mailto:kendall.l.tucker@hawaii.gov))  
 \_\_\_ Div. of Boating & Ocean Recreation  
X Engineering Division (via email: [DLNR.Engr@hawaii.gov](mailto:DLNR.Engr@hawaii.gov))  
X Div. of Forestry & Wildlife (via email: [rubyrosa.t.terrago@hawaii.gov](mailto:rubyrosa.t.terrago@hawaii.gov))  
X Div. of State Parks (via email: [curt.a.cottrell@hawaii.gov](mailto:curt.a.cottrell@hawaii.gov))  
X Commission on Water Resource Management (via email: [DLNR.CWRM@hawaii.gov](mailto:DLNR.CWRM@hawaii.gov))  
X Office of Conservation & Coastal Lands (via email: [sharleen.k.kuba@hawaii.gov](mailto:sharleen.k.kuba@hawaii.gov))  
X Land Division – Oahu District (via email: [barry.w.cheung@hawaii.gov](mailto:barry.w.cheung@hawaii.gov))  
X Land Division – Support Branch (via email: [sang.kim@hawaii.gov](mailto:sang.kim@hawaii.gov))  
X State Historic Preservation Division (via email: [susan.a.lebo@hawaii.gov](mailto:susan.a.lebo@hawaii.gov))  
*Russell Tsuji*

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: **Early Consultation for Draft Environmental Assessment (DEA)  
Ho’oulu ‘Āina Nature Park**

LOCATION: ‘Ouaua, Kalihi, Island of Oahu, Hawaii  
TMK: (1) 1-4-014:001, 026 and 1-4-016:003


APPLICANT: **G70 on behalf of Ho’oulu ‘Āina (DLNR State Parks’ Lessee)**

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline, extended to **December 16, 2021**, to [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov) at the Land Division.

If no response is received by the above due date, we will assume your agency has no comments at this time. Should you have any questions about this request, please contact Barbara Lee at [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

BRIEF COMMENTS:

( ) We have no objections.  
 ( ) We have no comments.  
 ( ) We have no additional comments.  
 Comments are included/attached.

Signed:   
 Print Name: DAVID G. SMITH, Administrator  
 Division: Division of Forestry and Wildlife  
 Date: Jan 4, 2022

Attachments  
Cc: Central Files



**STATE OF HAWAII**  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
FIRST DEPUTY

M. KALEO MANUEL  
DEPUTY DIRECTOR - WATER

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

January 4, 2022

**MEMORANDUM**

*Log no. 3445*

**TO:** RUSSELL Y. TSUJI, Land Administrator  
Land Division

**FROM:** DAVID G. SMITH, Administrator  
Division of Forestry and Wildlife

**SUBJECT: Division of Forestry and Wildlife Comments for the Early Consultation for Draft Environmental Assessment (DEA) Ho'oulu 'Āina Nature Park, Kalihi, O'ahu.**

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comment on early consultation on a DEA for the proposed Ho'oulu 'Āina Nature Park in 'Ouaua, Kalihi, Island of O'ahu, TMK: (1) 1-4-014:001, 1-4-014:026 & 1-4-016:003. The proposed project will care for and develop approximately 100 acres in the back of Kalihi Valley to restore the historic and cultural integrity and provide a space for people of all cultures to practice and perpetuate and indigenous Native Hawaiian lifestyle. As part of the project a single level structure of approximately 6,000 square feet will be constructed on the property that will include additional gravel and cement outside pads and a driveway / walkway.

The State listed Hawaiian Hoary Bat or 'Ōpe'ape'a (*Lasiurus cinereus semotus*) could potentially occur in the vicinity of the project area and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 4.6 meters (15 feet) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided for any construction because bat mortalities have been documented as a result of becoming ensnared by this type of fencing during flight.

The State and Federally endangered O'ahu 'Elepaio (*Chasiempis ibidis*), a forest bird, is known to occur at or in habitat adjacent to the project site. The species is found in a variety of tall, closed canopy forest types with dense understory, most often in riparian forest in valleys, ranging from 100 meter to 850 meter (325 feet to 2,775 feet) in elevation. Prior to undertaking any vegetation clearing, DOFAW recommends pre-construction surveys be conducted by a qualified biologist that follow the call-playback enhanced spot mapping methods described in VanderWerf et al. (2013). If an individual or pair are found, surveys should continue until the existence and extent of a territory can be reasonably determined. If an 'Elepaio nest is found, a buffer zone of 100 meters (330 feet) should be established around it. In both instances, whether territory or nest are determined or found, all disturbance in the vicinity should be ceased and DOFAW staff immediately notified.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing disorientation. This disorientation can result in a collision with manmade structures or the grounding of birds. For nighttime work that might be required, DOFAW recommends that all lights used be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea and are attracted to artificial lighting sources. Permanent lighting also poses a risk of seabird attraction, and as such should be minimized. For illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawai'i please visit <https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf>.

DOFAW recommends minimizing the movement of plant or soil material between worksites, such as infill. Soil and plant material may contain invasive fungal pathogens (e.g., Rapid 'Ōhi'a Death), vertebrate and invertebrate pests, or invasive plant parts (e.g., coqui frogs, little fire ants, coconut rhinoceros beetles) that could harm our native species and ecosystems. We recommend consulting the O'ahu Invasive Species Committee (OISC) at (808) 266-7994 in planning, design, and construction of the project to learn of any high-risk invasive species in the area and ways to mitigate spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

To prevent the spread of Rapid 'Ōhi'a Death (ROD), if 'ōhi'a trees are present and will be removed, trimmed, or potentially injured DOFAW requests that the information and guidance at the following website be reviewed and followed: <https://cms.ctahr.hawaii.edu/rod>.

DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e., climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW recommends consulting the Hawai'i-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (<https://sites.google.com/site/weedriskassessment/home>). We recommend that you refer to [www.plantpono.org](http://www.plantpono.org) for guidance on selection and evaluation for landscaping plants.

We appreciate your efforts to work with our office for the conservation of our native species. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Paul Radley, Protected Species Habitat Conservation Planning Coordinator at (808) 295-1123 or [paul.m.radley@hawaii.gov](mailto:paul.m.radley@hawaii.gov).

Sincerely,



DAVID G. SMITH  
Administrator



November 10, 2021

111 S. King Street  
Suite 170  
Honolulu, HI 96813  
808.523.5844  
www.g70.design

**Subject:** Early Consultation for Chapter 343, Hawai'i Revised Statutes (HRS)  
Draft Environmental Assessment (EA)  
Ho'oulu 'Āina Nature Park  
'Ouaua, Kalihi, Island of O'ahu, Hawai'i  
Tax Map Key (TMK): (1) 1-4-014:001, 026 and (1) 1-4-016:003

Dear Participant:

On behalf of Ho'oulu 'Āina, G70 is preparing a Draft EA, pursuant to HRS, Chapter 343, and Hawai'i Administrative Rules (HAR), Chapter 11-200.1. In 2005, Ho'oulu 'Āina was granted a 20-year lease from the State Department of Land and Natural Resources (DLNR), Parks Division to care for and sustainably develop TMKs (1) 1-4-014:001, 026 and (1) 1-4-016:003, which encompasses approximately 100 acres in the back of Kalihi Valley. Since approval of the lease, Ho'oulu 'Āina has provided a space for people of all cultures to engage in 'āina based practices. Through learning and engaging in 'āina based practices, the health of the land has improved. Additionally, Native Hawaiians and community volunteer members have been able to reconnect with indigenous lifestyle practices, improving and addressing health inequities indigenous populations face.

The Draft EA will analyze an updated master plan to assist Ho'oulu 'Āina in securing a lease extension for the 100-acre site. A lease extension will continue to allow Ho'oulu 'Āina to restore the historic and cultural integrity of Kalihi Valley and provide a space for people of all cultures to practice and perpetuate an indigenous Native Hawaiian lifestyle.

Pursuant to HAR, Chapter 11-200.1-18, Ho'oulu 'Āina is conducting early consultation to seek input from agencies, citizen groups, and individuals who may have an area of expertise or have an association with Ho'oulu 'Āina, which may guide the scope and preparation of the Draft EA.

Please provide comments via U.S. mail, email, or fax. We request you submit comments no later than December 10, 2021. \*

G70  
111 S. King Street, Suite 170  
Honolulu, HI 96813-4307  
Fax: (808) 523-5874  
Email: [HoouluAinaEA@g70.design](mailto:HoouluAinaEA@g70.design)

Thank you for your participation in the early consultation for this environmental review process.

Sincerely,

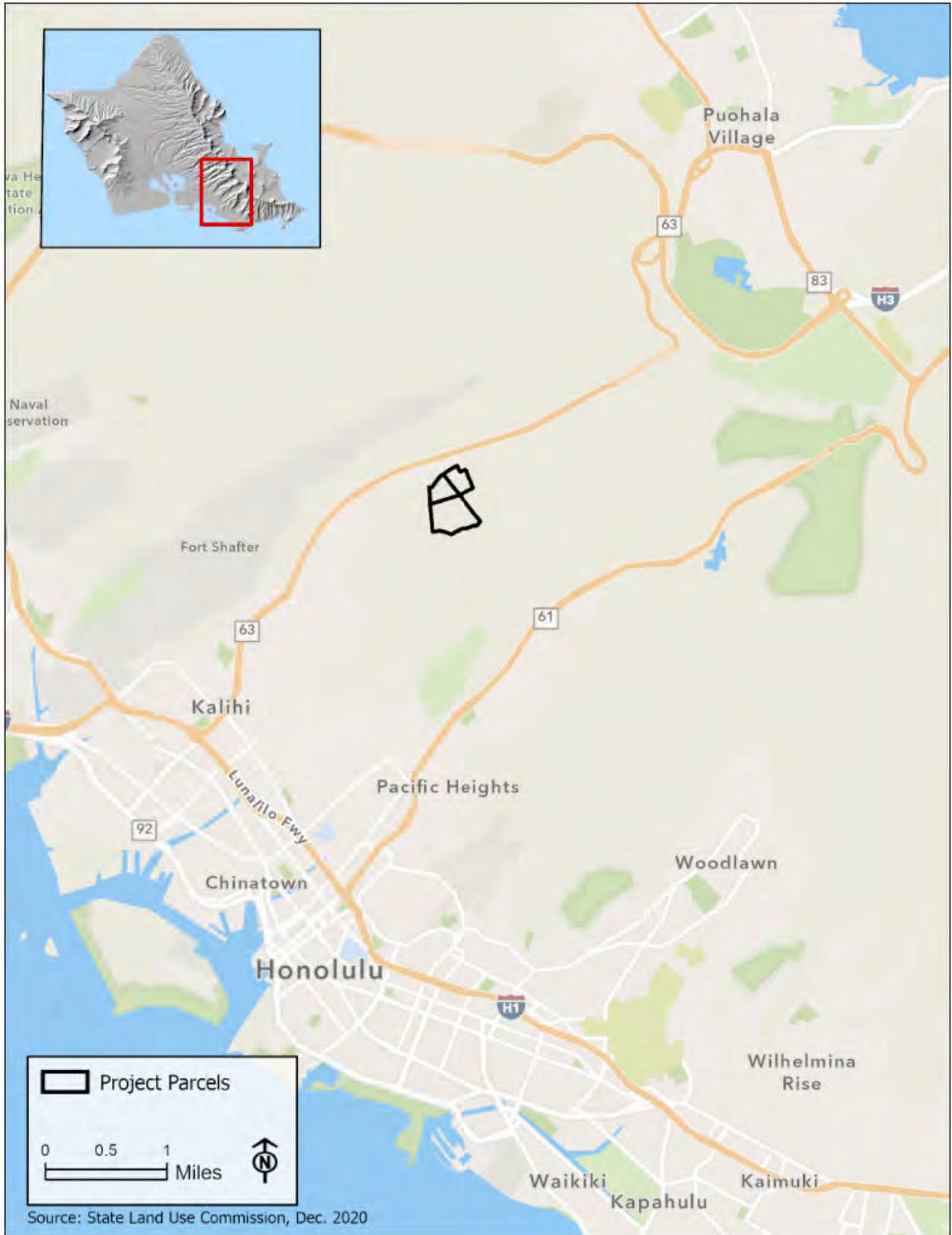
GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP  
Principal

\* One week extension granted by G70,  
to 12/17/2021.



Ho'oulu 'Āina Nature Park  
November 10, 2021



Project Location

Ho'oulu 'Āina Nature Park

DAVID Y. IGE  
GOVERNOR OF HAWAII



SUZANNE B. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

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

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

January 28, 2022

LD 1347e

Group 70 International, Inc., dba G70  
111 S. King Street, Suite 170  
Honolulu, HI 96813-4307

*Via email: HoouluAinaEA@g70.design*

Dear Sirs:

**SUBJECT: Early Consultation for Draft Environmental Assessment  
Ho'oulu 'Aina Nature Park, 'Ouaua, Kalihi, Island of Oahu, Hawaii  
TMK: (1) 1-4-014:001, 026 and 1-4-016:003**

Thank you for the opportunity to review and comment on the above subject. In addition to previous comments sent to you from the Department of Land and Natural Resources (DLNR) dated December 22, 2021, December 23, 2021, and January 06, 2022, enclosed are comments received from DLNR's Commission on Water Resource Management..

Should you have any questions, please feel free to contact Barbara Lee at 587-0453 or [barbara.j.lee@hawaii.gov](mailto:barbara.j.lee@hawaii.gov). Thank you.

Sincerely,

*Russell Tsuji*

Russell Y. Tsuji  
Land Administrator

Enclosure  
cc: Central Files




STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

January 25, 2022

REF: RFD.5843.3

TO: Mr. Russell Tsuji, Administrator  
Land Division

FROM: M. Kaleo Manuel, Deputy Director   
Commission on Water Resource Management

SUBJECT: Hooulu Aina Nature Park

FILE NO.: RFD.5843.3  
TMK NO.: (1) 1-4-014:001, (1) 1-4-014:026, (1) 1-4-016:003

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://dlnr.hawaii.gov/cwrm>.

Our comments related to water resources are checked off below.

1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EAP as having high water efficiency can be found at <http://www.epa.gov/watersense>.
5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://planning.hawaii.gov/czm/initiatives/low-impact-development/>
6. We recommend the use of alternative water sources, wherever practicable.
7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>.
8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at [http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH\\_Irrigation\\_Conservation\\_BMPs.pdf](http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf).

- 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 11. The Hawaii Water Plan is directed toward the achievement of the utilization of reclaimed water for uses other than drinking and for potable water needs in one hundred per cent of State and County facilities by December 31, 2045 (§174C-31(g)(6), Hawaii Revised Statutes). We strongly recommend that this project consider using reclaimed water for its non-potable water needs, such as irrigation. Reclaimed water may include, but is not limited to, recycled wastewater, gray water, and captured rainwater/stormwater. Please contact the Hawai'i Department of Health, Wastewater Branch, for more information on their reuse guidelines and the availability of reclaimed water in the project area.
- 12. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
- 13. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 14. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 15. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 16. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
- 17. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
- 18. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 19. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
  
- OTHER:

If you have any questions, please contact Neal Fujii of the Commission staff at 587-0216.



November 10, 2021

111 S. King Street  
Suite 170  
Honolulu, HI 96813  
808.523.5866  
www.g70.design

**Subject:** Early Consultation for Chapter 343, Hawai'i Revised Statutes (HRS)  
Draft Environmental Assessment (EA)  
Ho'oulu 'Āina Nature Park  
'Ouaua, Kalihi, Island of O'ahu, Hawai'i  
Tax Map Key (TMK): (1) 1-4-014:001, 026 and (1) 1-4-016:003

Dear Participant:

On behalf of Ho'oulu 'Āina, G70 is preparing a Draft EA, pursuant to HRS, Chapter 343, and Hawai'i Administrative Rules (HAR), Chapter 11-200.1. In 2005, Ho'oulu 'Āina was granted a 20-year lease from the State Department of Land and Natural Resources (DLNR), Parks Division to care for and sustainably develop TMKs (1) 1-4-014:001, 026 and (1) 1-4-016:003, which encompasses approximately 100 acres in the back of Kalihi Valley. Since approval of the lease, Ho'oulu 'Āina has provided a space for people of all cultures to engage in 'āina based practices. Through learning and engaging in 'āina based practices, the health of the land has improved. Additionally, Native Hawaiians and community volunteer members have been able to reconnect with indigenous lifestyle practices, improving and addressing health inequities indigenous populations face.

The Draft EA will analyze an updated master plan to assist Ho'oulu 'Āina in securing a lease extension for the 100-acre site. A lease extension will continue to allow Ho'oulu 'Āina to restore the historic and cultural integrity of Kalihi Valley and provide a space for people of all cultures to practice and perpetuate an indigenous Native Hawaiian lifestyle.

Pursuant to HAR, Chapter 11-200.1-18, Ho'oulu 'Āina is conducting early consultation to seek input from agencies, citizen groups, and individuals who may have an area of expertise or have an association with Ho'oulu 'Āina, which may guide the scope and preparation of the Draft EA.

Please provide comments via U.S. mail, email, or fax. We request you submit comments no later than December 10, 2021. \*

G70  
111 S. King Street, Suite 170  
Honolulu, HI 96813-4307  
Fax: (808) 523-5874  
Email: [HoouluAinaEA@g70.design](mailto:HoouluAinaEA@g70.design)

Thank you for your participation in the early consultation for this environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP  
Principal

\* One week extension granted by G70,  
to 12/17/2021.

Ho'oulu 'Āina Nature Park  
November 10, 2021



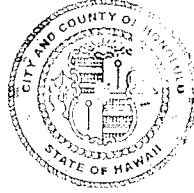
Project Location

Ho'oulu 'Āina Nature Park

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 7<sup>TH</sup> FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-8000 • FAX: (808) 768-6041  
DEPT. WEB SITE: [www.honolulu.gov](http://www.honolulu.gov) • CITY WEB SITE: [www.honolulu.gov](http://www.honolulu.gov)

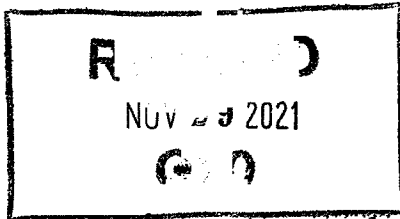
RICK BLANGIARDI  
MAYOR



DEAN UCHIDA  
DIRECTOR

DAWN TAKEUCHI APUNA  
DEPUTY DIRECTOR

EUGENE H. TAKAHASHI  
DEPUTY DIRECTOR



November 24, 2021

2021/ELOG-2415(MAK)

Mr. Mark K. McKeague  
G70  
111 South King Street, Suite 170  
Honolulu, Hawaii 96813

Dear Mr. McKeague:

SUBJECT: Pre- Assessment Consultation - Environmental Analysis  
Hooulu Aina Nature Park - Kalihi  
Tax Map Keys 1-4-014: 001, 026, and 1-4-016: 003

This in response to your letter, received November 12, 2021, requesting comments regarding the upcoming preparation of an Environmental Assessment (EA). We understand that the proposal is to analyze an updated master plan to assist Hooulu Aina in securing a lease extension with the State Department of Land and Natural Resources, Parks Division, for the subject properties. Based on the information in your letter, we have no comments at this time, but we look forward to reviewing your upcoming Draft EA.

Thank you for the opportunity to comment on this proposal. Should you have any questions, please contact Michael Kat, of our Zoning Regulations and Permits Branch, at 768-8013 or via email at [michael.kat@honolulu.gov](mailto:michael.kat@honolulu.gov).

Very truly yours,

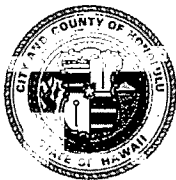
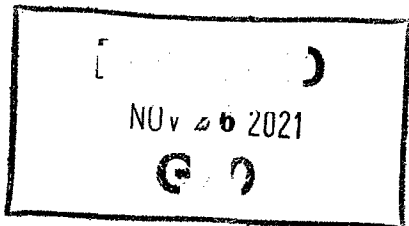
A handwritten signature in black ink, appearing to read "Dean Uchida".

For: Dean Uchida  
Director

HONOLULU FIRE DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**

636 South Street  
Honolulu, Hawaii 96813-5007  
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

RICK BLANGIARDI  
MAYOR



November 22, 2021

LIONEL CAMARA JR.  
ACTING FIRE CHIEF

SHELDON K. HAO  
ACTING DEPUTY FIRE CHIEF

Mr. Mark Kawika McKeague, AICP  
G70  
111 South King Street, Suite 170  
Honolulu, Hawaii 96813-4307

Dear Mr. McKeague:

Subject: Draft Environmental Assessment  
Hooulu Aina Nature Park  
3659 Kalihi Street  
Honolulu, Hawaii 96819  
Tax Map Keys: 1-4-014: 001, 026 and 1-4-016: 003

In response to your letter dated November 10, 2021, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1 as amended.)

A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2018 Edition, Section 18.2.3.2.1.)

2. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or



Mr. Mark Kawika McKeague, AICP

Page 2

November 22, 2021

moved into the jurisdiction. The approved water supply shall be in accordance with Section 18.4. (NFPA 1; 2018 Edition, Section 18.3.1.)

3. The fire department access roads shall be in accordance with Section 18.2.3. (NFPA 1; 2018 Edition, Sections 18.2.3.)

4. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Battalion Chief Reid Yoshida of our Fire Prevention Bureau at 808-723-7151 or ryoshida@honolulu.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Samala', with a stylized flourish at the end.

JASON SAMALA  
Assistant Chief

JS/EO:bh

POLICE DEPARTMENT  
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813  
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulu.org



RICK BLANGIARDI  
MAYOR

RADE K VANIC  
INTERIM CHIEF

OUR REFERENCE EO-DK

November 22, 2021

SENT VIA EMAIL

Mr. Mark Kawika McKeague, AICP  
HoouluAinaEA@g70.design

Dear Mr. McKeague:

This is in response to your letter of November 10, 2021 requesting input on the Draft Environmental Assessment for the proposed Hooulu Aina Nature Park project in Kalihi.

Based on the information provided, the Honolulu Police Department does not have any comments or concerns at this time.

If there are any questions, please call Major Roland Turner of District 5 (Kalihi) at (808) 723-8208.

Thank you for the opportunity to review this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Darren Chun", with a horizontal line extending to the right.

DARREN CHUN  
Assistant Chief of Police  
Support Services Bureau

## BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843  
[www.boardofwatersupply.com](http://www.boardofwatersupply.com)



December 30, 2021

RICK BLANGIARDI, MAYOR

BRYAN P. ANDAYA, Chair  
KAPUA SPROAT, Vice Chair  
RAY C. SOON  
MAX J. SWORD  
NA'ALEHU ANTHONY

JADE T. BUTAY, Ex-Officio  
ROGER BABCOCK, Jr., Ex-Officio

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

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

Mr. Mark Kawika McKeague, AICP  
G70  
111 South King Street, Suite 170  
Honolulu, Hawaii 96813-4307



Dear Mr. McKeague:

Subject: Your Letter Dated November 10, 2021 Requesting Comments on the Early Consultation for the Draft Environmental Assessment for the Proposed Hooulu Aina Nature Park on Kalihi Street  
Tax Map Key: 1-4-014: 001, 026 and 1-4-016: 003

Thank you for your letter regarding the proposed agricultural development.

The existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent migration of fuel contamination from the Red Hill Bulk Storage Tank fuel releases into the Waimalu aquifer. As a result, we cannot confirm the adequacy of the Honolulu water system to accommodate the proposed development at this time. Please be advised that this information is based upon current data, and therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

The BWS is closely monitoring the situation the Navy is presently experiencing with their water distribution system. The BWS water distribution system is entirely separate from the Navy water distribution system. BWS has no jurisdiction over the Navy system and is not directly involved in the Department of Health and Navy investigation and response.

While we have stopped pumping from Halawa Shaft, we have other water sources that we are drawing on to replace the 20% provided by Halawa Shaft. We will closely monitor water usage and if consumption increases over pumpage, we will ask for voluntary conservation and, if necessary, mandatory conservation. At this time, we ask everyone, as always, to use water wisely and follow conservation tips as posted on our website at [www.boardofwatersupply.com](http://www.boardofwatersupply.com).

Mr. Mark Kawika McKeague  
December 30, 2021  
Page 2

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

Water conservation measures are required for all proposed developments. These measures include low flow plumbing fixtures, utilization of nonpotable water for irrigation using rain catchment and chiller/air handler condensate, cooling tower conductivity meters and water softening recycling systems, drought tolerant plants, xeriscape landscaping, efficient irrigation systems and the use of Water Sense labeled ultra-low-flow water fixtures and toilets.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

The BWS has an 8 inch ductile iron pipe and 16 inch ductile iron pipe that runs through Tax Map Key: 1-4-014: 026. Water pipeline easements shall be granted to the BWS for these water mains which are located within properties that are not dedicated to the City and County of Honolulu. Please coordinate with our Lands Division at (808) 748-5910.

If you have any questions, please contact Ernest Lau, Manager and Chief Engineer at (808) 748-5061.

Very truly yours,



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

3583-E Kalihi St.  
Honolulu, HI 96819  
Dec. 3, 2021

Hello,

Our family lives just down Kalihi St. from Ho'oulu 'Aina. I believe the work done on the property is beneficial to both the Honolulu community and to all the people who have the opportunity to carry on their traditions of planting and maintaining life. My dog and I walk by very often and say hello to the people coming in and going out. They always have a feeling of pleasure and pride about them.

Very often I look in at the plants and trees people have put in there. The work people are doing is valuable to them and to the land. One of my good friends comes to the harvest Saturdays and loves them. Once I have gone up on the property and have been given a papaya by a friend up there. I feel as if Ho'oulu 'Aina is an extension of our home and also a continuance of the cultural life of the people who meet and work together there.

With Aloha,

*Nancy*  
Nancy S. Young



---

**From:** Michael Bradley <bradley54@gmail.com>  
**Sent:** Wednesday, December 15, 2021 11:26 AM  
**To:** 221074-01 Ho'oulu 'Āina EA Project  
**Cc:** koconnor@kkv.net; Toni Alatan; DJ Bradley  
**Subject:** Draft EA Hooulu Aina Park, Maluwai and portion of Ouaua, Kalihi valley Oahu

Thank you for the invitation to participate in the draft EA for Hooulu Aina Park. As a member of the Kalihi Valley community and living across Kalihi street from the Ouaua portion of the Hooulu Aina Park this is very important. My home is 3660 Kalihi Street and my sister Toni Alatan and I jointly own the house at 3670 Kalihi Street.

My opinion is that the park has been an excellent addition to the neighborhood and has significantly improved the condition of the land since they have taken stewardship.

For the EA, these are a few areas of concerns :

- Green space fronting Kalihi Street - The park has maintained a green space along Kalihi street. There are some very old trees planted along the park's boundary that were mature trees in the 1960s. In addition there are a mixture of other trees that form a solid wall along Kalihi street and branch out over the street. One species of tree is the Bishop Wood which crowds out native trees and is listed on the Hawaii Invasive Species Council website. The trees in the greenspace also have a large amount of philodendron and other climbing vines which is unhealthy and adds considerable weight to the top of the trees. Our two homes are in the falling radius of the stand of trees. Both homes built in the early 1950s are non-conforming structures that can not be rebuilt in the current location if severely damaged. The green space should be addressed to minimize these risks and emphasize appropriate native species planting.
- Surface Water runoff - Development design must mitigate loss of soil from the property due to water erosion. Water runoff along Kalih street should be controlled. The existing storm drain system that collects water from Kalihi street and the Ouaua land area is full of soil and needs to be cleaned. The storm drain will mitigate uncontrolled water runoff into the stream.
- Kalihi Street Bridge #3 - The bridge is in poor condition resulting in a greatly reduced weight limit that is presently at 10 tons. Although there is a fire hydrant across from the 3659 Kalihi Street residence, the fire engine can not drive to the fire hydrant. The fire engine must park on the other side of the bridge. Other issues is that the bridge must also provide access for the BWS for their facilities and all the utilities that use the joint pole overhead line. In addition to power for the BWS, the overhead line has communication lines that go to windward Oahu. These utility companies and their contractors must service/repair the line. Those companies normally use vehicles that can not legally use the bridge.

Thank you for the opportunity to contribute to the EA.

Sincerely,

Michael and Diana Bradley  
(808) 987-0256

---

**From:** Cab General <Cab.General@doh.hawaii.gov>  
**Sent:** Wednesday, June 8, 2022 3:21 PM  
**To:** Carpenter, Alan B; 221074-01 Ho'oulu 'Āina EA Project  
**Subject:** Ho'oulu Aina Park -- Draft EA (AFNSI)

Aloha,

Thank you for the opportunity to provide comments on the subject project. Based on review of the *Ho'oulu Aina Park Draft EA*, CAB has no further comments at this time.

Please see our standard comments at:

<https://health.hawaii.gov/cab/files/2022/05/Standard-Comments-for-Land-Use-Reviews-Clean-Air-Branch-2022-1.pdf>

Please let me know if you have any questions or concerns.

Kristen Caskey, EHS  
[Kristen.caskey@doh.hawaii.gov](mailto:Kristen.caskey@doh.hawaii.gov)  
Clean Air Branch  
Hawaii State Department of Health

**Standard Comments for Land Use Reviews**  
**Clean Air Branch**  
**Hawaii State Department of Health**

If your proposed project:

Requires an Air Pollution Control Permit

- You must obtain an air pollution control permit from the Clean Air Branch and comply with all applicable conditions and requirements. If you do not know if you need an air pollution control permit, please contact the Permitting Section of the Clean Air Branch.
- Permit application forms can be found here: <https://health.hawaii.gov/cab/permit-application-forms/>

Includes construction, demolition, or renovation activities that involve potential asbestos and lead containing materials:

- Asbestos may be present in any existing structure. Prior to demolition, you must contact the Indoor and Radiological Health Branch, Asbestos-Lead Section. Testing may be required to determine if building materials may contain asbestos, such as: drywall, vinyl floor tile, mastic, caulking, roofing materials, insulation, special coatings, etc.
- Structures built prior to 1980 may also contain lead paint. Prior to demolition, contact the Indoor and Radiological Health Branch, Asbestos-Lead Section. Testing may need to be conducted to determine if building materials contain lead.
- Some construction activities have the potential to create excessive noise and may require noise permits. For DOH Noise Permits and/or Variances and for more information on the Indoor and Radiological Health Branch, please visit: <https://health.hawaii.gov/irhb/>

Has the potential to generate fugitive dust

- You must reasonably control the generation of all airborne, visible fugitive dust. Note that construction activities that occur near to existing residences, businesses, public areas and major thoroughfares exacerbate potential dust concerns. It is recommended that a dust control management plan be developed which identifies and mitigates all activities that may generate airborne, visible fugitive dust. The plan, which does *not* require Department of Health approval, should help you recognize and minimize potential airborne, visible fugitive dust problems.
- Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust. In addition, for cases involving mixed land use, we strongly recommend that buffer zones be established, wherever possible, in order to alleviate potential nuisance complaints.
- You must provide reasonable measures to control airborne, visible fugitive dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:
  - Planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities, centralizing on-site



vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;

- Providing an adequate water source at the site prior to start-up of construction activities; Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;
  - Minimizing airborne, visible fugitive dust from shoulders and access roads;
  - Providing reasonable dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
  - Controlling airborne, visible fugitive dust from debris being hauled away from the project site.
- If you have questions about fugitive dust, please contact the Enforcement Section of the Clean Air Branch

Increases the population and potential number of vehicles in an area:

- The creation of apartment buildings, complexes, and residential communities may increase the overall population in an area. Increasing the population in an area may inadvertently lead to more air pollution via vehicle exhaust. Vehicle exhaust releases molecules in the air that negatively impact human health and air quality, as they are known lung irritants, carcinogens, and greenhouse gases.
- Ensure that residents keep their vehicle idling time to three (3) minutes or less.
- Provide bike racks and/or electric vehicle charging stations for residents.
- Ensure that there are sufficient and safe pedestrian walkways and crosswalks throughout and around the development.
- Conduct a traffic study to ensure that the new development does not significantly impact traffic in the area.

Clean Air Branch (808) 586-4200 <a href="mailto:cab@doh.hawaii.gov">cab@doh.hawaii.gov</a>	Indoor Radiological Health Branch (808) 586-4700
--	---

DAVID Y. IGE  
GOVERNOR  
STATE OF HAWAII



WILLIAM J. AILĀ, JR.  
CHAIRMAN  
HAWAIIAN HOMES COMMISSION

JOSH GREEN  
LT GOVERNOR  
STATE OF HAWAII

TYLER I. GOMES  
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS

P O BOX 1879  
HONOLULU, HAWAII 96805

June 15, 2022

Ref.:PO-22-156

Group 70 International, Inc.  
Mark Kawika McKeague  
111 S. King Street, Suite 170  
Honolulu, HI 96813  
[HouluAinaEA@g70.design](mailto:HouluAinaEA@g70.design)

Aloha e Kawika:

Subject: Draft Environmental Assessment/  
Anticipated Finding of No Significant Impact  
(DEA/AFONSI) Consultation  
Ho'oulu 'Āina Nature Park  
'Ouaua, Kalihi, O'ahu, Hawai'i  
TMK's: (1)1-4-014:001, (1)1-4-014:026, (1)1-4-016:003

The Department of Hawaiian Home Lands acknowledges receiving the request for comments on the above-cited project. After reviewing the materials submitted, due to its lack of proximity to Hawaiian Home Lands, we do not anticipate any impacts to our lands or beneficiaries from the project.

However, we highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)ative Hawaiian organizations when preparing environmental assessments in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.

Mahalo for the opportunity to provide comments. If you have any questions, please contact the Planning Office at (808)620-9500, or via email at: [dhl.planning@hawaii.gov](mailto:dhl.planning@hawaii.gov).

Me ke aloha,

William J. Ailā, Jr., Chairman  
Hawaiian Homes Commission

DAVID Y. IGE  
GOVERNOR



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

JADE T. BUTAY  
DIRECTOR

Deputy Directors  
ROSS M. HIGASHI  
EDUARDO P. MANGLALLAN  
EDWIN H. SNIFFEN

IN REPLY REFER TO:  
DIR 0535  
STP 8.3411

June 20, 2022

**VIA EMAIL:** HoouluAinaEA@g70.design

Mr. Mark Kawika McKeague, AICP  
Principal  
G70  
111 S. King Street, Suite 170  
Honolulu, Hawaii 96813

Dear Mr. McKeague:

Subject: Draft Environmental Assessment (EA)  
Hooulu Aina Nature Park  
Kalihi, Oahu, Hawaii  
Tax Map Key: (1) 1-4-014:001, 026, and 1-4-016:003

Thank you for your letter dated May 23, 2022, requesting the State of Hawaii Department of Transportation's (HDOT) review and comments on the subject project. HDOT understands Kokua Kalihi Valley (KKV) is the lessee of Hooulu Aina Nature Park and has developed a programmatic plan to continue restoration efforts and provide access to the park and deepen knowledge of Native Hawaiian culture. KKV is updating the master plan to support the programmatic plan and the current program operations with efforts to restore the health of the land and people. The proposed master plan update includes 14 facilities, in which eight (8) of the new facilities have foundations existing and five (5) are newly planned facilities.

HDOT has the following comments:

Airports Division (HDOT-A)

1. The proposed project is approximately 4.24 miles from the property boundary of the Daniel K. Inouye International Airport (HNL). All projects within 5 miles from Hawaii State airports are advised to read the Technical Assistance Memorandum (TAM) for guidance with development and activities that may require further review and permits. The TAM can be viewed at this link: [http://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports\\_08-01-2016.pdf](http://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports_08-01-2016.pdf).
2. Federal Aviation Administration (FAA) regulation requires the submittal of FAA Form 7460-1 Notice of Proposed Construction or Alteration pursuant to the Code of Federal Regulations, Title 14, Part 77.9, if the construction or alteration is within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet. Construction equipment and staging area heights, including heights of temporary construction cranes, shall be included in the submittal.

The form and criteria for submittal can be found at the following website:  
<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

3. Section 2.4, DEA page 2-17 (PDF view, p. 44), identifies opportunities to use green technologies, such as utilizing solar panels for off-grid electricity. If a solar energy photovoltaic (PV) system is going to be installed, be aware that PV systems located in or near the approach path of aircrafts can create a hazardous condition for pilots due to possible glint and glare reflected from the PV panel array. If glint or glare from the PV array creates a hazardous condition for pilots, the owner of the PV system shall be prepared to immediately mitigate the hazard upon notification by the HDOT-A and/or FAA.

The FAA requires a glint and glare analysis for all solar energy PV systems near airports. The [www.sandia.gov/glare](http://www.sandia.gov/glare) website has information and guidance with the preparation of a glint and glare analysis. A separate FAA Form 7460-1 will be necessary for the solar energy PV system. After the FAA determination of the Form 7460-1 glint and glare analysis, a copy shall be provided to the HDOT-A by the owner of the solar energy PV system.

Solar energy PV systems have also been known to emit radio frequency interference (RFI) to aviation-dedicated radio signals, thereby disrupting the reliability of air-to-ground communications. Again, the owner of the solar energy PV system shall be prepared to immediately mitigate the RFI hazard upon notification by the HDOT-A and/or FAA.

4. Due to the project's proximity to HNL, the developer should be aware of potential single event noise from aircraft operations. There is also a potential for fumes, smoke, vibrations, odors, etc., resulting from occasional aircraft flight operations over or near the project. These incidences may increase or decrease over time and are dependent on airport operations.

#### Highways Division

Based on the information provided in the Draft EA, the proposed project does not appear to directly or indirectly impact the State highway system.

If there are any questions, please contact Mr. Blayne Nikaido of the HDOT Statewide Transportation Planning Office at (808) 831-7979 via email at [blayne.h.nikaido@hawaii.gov](mailto:blayne.h.nikaido@hawaii.gov).

Sincerely,



JADE T. BUTAY  
Director of Transportation




STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

June 20, 2022

REF: RFD.5843.3

TO: Kawika McKeague, AICP, Principal Planner  
Group 70 International, Inc.

FROM: M. Kaleo Manuel, Deputy Director   
Commission on Water Resource Management

SUBJECT: Chapter 343, Hawai'i Revised Statutes (HRS), Draft Environmental Assessment (DEA) Ho'oulu  
'Aina Nature Park, 'Ouaua, Kalihi, Island of O'ahu, Hawai'i

FILE NO.: RFD.5843.3  
TMK NO.: (1) 1-4-014:001, (1) 1-4-014:026, (1) 1-4-016:003

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://dlnr.hawaii.gov/cwrm>.

Our comments related to water resources are checked off below.

1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EAP as having high water efficiency can be found at <http://www.epa.gov/watersense>.
5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://planning.hawaii.gov/czm/initiatives/low-impact-development/>
6. We recommend the use of alternative water sources, wherever practicable.
7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>.
8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at

[http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH\\_Irrigation\\_Conservation\\_BMPs.pdf](http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf).

9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
11. The Hawaii Water Plan is directed toward the achievement of the utilization of reclaimed water for uses other than drinking and for potable water needs in one hundred per cent of State and County facilities by December 31, 2045 (§174C-31(g)(6), Hawaii Revised Statutes). We strongly recommend that this project consider using reclaimed water for its non-potable water needs, such as irrigation. Reclaimed water may include, but is not limited to, recycled wastewater, gray water, and captured rainwater/stormwater. Please contact the Hawai'i Department of Health, Wastewater Branch, for more information on their reuse guidelines and the availability of reclaimed water in the project area.
12. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
13. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
14. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
15. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
16. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
17. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
18. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
19. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

OTHER: Planning Branch -

We recommend consultation with the region's (moku) Aha Moku Council on whether a land use conversion or project that uses water will impact any traditional & customary practices.

If the applicant proposes to use rainfall catchment as a water source, we recommend that the applicant reference the manual Guidelines on Rainwater Catchment Systems for Hawai'i (available online at <https://www.ctahr.hawaii.edu/hawaiirain/guidelines.html>). If there are any plans to construct a well, the applicant must apply for well construction and pump installation permits from the Commission on Water Resource Management.

If you have any questions, please contact Katie Roth of the Commission staff at 587-0216.

DAVID Y. IGE  
GOVERNOR



CURT T. OTAGURO  
COMPTROLLER  
AUDREY HIDANO  
DEPUTY COMPTROLLER

**STATE OF HAWAII**  
**DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES**  
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)22.117

**JUN 27 2022**

Mark Kawika McKeague  
G70  
111 S King Street, Suite 170  
Honolulu, Hawaii 96813

Dear Mr. McKeague:

Subject: Chapter 343, HRS Draft Environment Assessment for  
Hooulu Aina Nature Park  
61-815 Papailoa Road  
Ouaua, Kalihi, Oahu, Hawaii  
TMK: (1) 1-4-014: 001, (1) 1-4-014: 026, (1) 1-4-016: 003

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Ms. Gayle Takasaki of the Planning Branch at (808) 586-0584.

Sincerely,

A handwritten signature in blue ink, appearing to read "CK", with a long horizontal flourish extending to the right.

CHRISTINE L. KINIMAKA  
Public Works Administrator

GT:mo

## BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843  
[www.boardofwatersupply.com](http://www.boardofwatersupply.com)




June 7, 2022

RICK BLANGIARDI, MAYOR

BRYAN P. ANDAYA, Chair  
KAPUA SPROAT, Vice Chair  
RAY C. SOON  
MAX J. SWORD  
NA'ALEHU ANTHONY

JADE T. BUTAY, Ex-Officio  
DAWN B. SZEWCZYK, P.E., Ex-Officio

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

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

Mr. Mark Kawika McKeague, AICP  
G70  
111 South King Street, Suite 170  
Honolulu, Hawaii 96813-4307

Dear Mr. McKeague:

Subject: Your Letter Dated November 10, 2021 Requesting Comments on the Early Consultation for the Draft Environmental Assessment for the Proposed Hooulu Aina Nature Park on Kalihi Street Tax Map Key: 1-4-014: 001, 026 and 1-4-016: 003

Thank you for your letter regarding the proposed agricultural development. The following supersedes our previous comments dated December 30, 2021.

The existing water system is currently adequate to accommodate the proposed development. However, please be advised that the existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent fuel contamination from the Navy's Red Hill Bulk Storage Tank fuel releases. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval, pending evaluation of the water system conditions at that time on a first-come first-served basis. The Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application.

We continue to request 10% voluntary water conservation of all customers until new sources are completed and require water conservation measures in all new developments. If water consumption significantly increases, progressively restrictive conservation measures may be required to avoid low water pressures and disruptions of water service.

Presently, there is no moratorium on the issuance of new and additional water services. Water distributed via the BWS water systems remains safe for consumption. The BWS is closely monitoring water usage and will keep the public informed with the latest findings. Please visit our website at [www.boardofwatersupply.com](http://www.boardofwatersupply.com) and [www.protectoahuwater.org](http://www.protectoahuwater.org) for the latest updates and water conservation tips.



Mr. Mark Kawika McKeague  
June 7, 2022  
Page 2

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

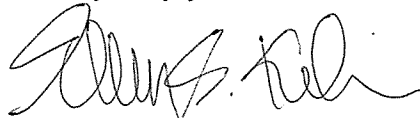
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The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

The BWS has an 8-inch ductile iron pipe and 16-inch ductile iron pipe that runs through Tax Map Key: 1-4-014: 026. Water pipeline easements shall be granted to the BWS for these water mains which are located within properties that are not dedicated to the City and County of Honolulu. Please coordinate with our Lands Division at (808) 748-5910.

If you have any questions, please contact Ernest Lau, Manager and Chief Engineer at (808) 748-5061.

Very truly yours,

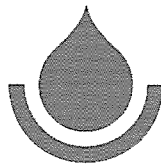


ERNEST Y. W. LAU, P.E.

Manager and Chief Engineer

## BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HI 96843  
[www.boardofwatersupply.com](http://www.boardofwatersupply.com)



June 15, 2022

RICK BLANGIARDI, MAYOR

BRYAN P. ANDAYA, Chair  
KAPUA SPROAT, Vice Chair  
RAY C. SOON  
MAX J. SWORD  
NA'ALEHU ANTHONY

JADE T. BUTAY, Ex-Officio  
DAWN B. SZEWCZYK, P.E., Ex-Officio

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

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

Mr. Mark Kawika McKeague  
G70  
111 South King Street, Suite 170  
Honolulu, Hawaii 96813

Dear Mr. McKeague:

Subject: Your Letter Dated May 23, 2022 Requesting Comments on the Draft Environmental Assessment of the Ho'oulu Aina Nature Park in Kalihi Valley off of Kalihi Street, Tax Map Keys: 1-4-014:001 and 026; 1-4-016:003

Thank you for the opportunity to comment on the proposed master plan update at Ho'oulu Aina.

The existing water system is currently adequate to accommodate the proposed development. However, please be advised that the existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent fuel contamination from the Navy's Red Hill Bulk Storage Tank fuel releases. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval, pending evaluation of the water system conditions at that time on a first-come first-served basis. The Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application.

We continue to request 10% voluntary water conservation of all customers until new sources are completed and require water conservation measures in all new developments. If water consumption significantly increases, progressively restrictive conservation measures may be required to avoid low water pressures and disruptions of water service.

Presently, there is no moratorium on the issuance of new and additional water services. Water distributed via the BWS water systems remains safe for consumption. The BWS is closely monitoring water usage and will keep the public informed with the latest findings. Please visit our website at [www.boardofwatersupply.com](http://www.boardofwatersupply.com) and [www.protectoahuwater.org](http://www.protectoahuwater.org) for the latest updates and water conservation tips.

Mr. Mark Kawika McKeague  
June 15, 2022  
Page 2

When water is made available, the applicant will be required to pay our Water System Facility Charges for resource development, transmission, and daily storage.

Water conservation measures are required for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.

The BWS has an 8-inch and 16-inch ductile iron waterline that runs through the northern boundary of the parcel with Tax Map Key: 1-4-014: 026. Waterline easements shall be granted to the BWS for water mains that are located within private properties and/or roadways that are not dedicated to the City and County of Honolulu. For more information regarding easement dedication, please contact and coordinate with our Lands Division at (808) 748-5910.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Ernest Lau, Manager and Chief Engineer at (808) 748-5061.

Very truly yours,



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

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11<sup>TH</sup> FLOOR  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8480 • Fax: (808) 768-4567  
Web site: [www.honolulu.gov](http://www.honolulu.gov)

RICK BLANGIARDI  
MAYOR



ALEX KOZLOV, P.E.  
DIRECTOR

HAKU MILLES, P.E.  
DEPUTY DIRECTOR

June 8, 2022

SENT VIA EMAIL

Mr. Mark Kawika McKeague  
HoouluAinaEA@g70.design

Dear Mr. McKeague:

Subject: Chapter 343, Hawaii Revised Statutes (HRS)  
Draft Environmental Assessment (DEA)  
Hooulu Aina Nature Park  
Ouaua, Kalihi, Island of Oahu, Hawaii  
Tax Map Keys: (1) 1-4-014:001, (1) 1-4-014:026, and (1) 1-4-016:003

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments to offer at this time.

Should you have any questions, please contact Deputy Director Haku Milles at (808) 768-8481.

Sincerely,

A handwritten signature in black ink, appearing to read "Alex Kozlov".

*for* Alex Kozlov, P.E.  
Director

AK:krm (881402)

POLICE DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813  
TELEPHONE (808) 529-3111 · INTERNET www.honolulu.org



RICK BLANGARD  
MAYOR

ARTHUR J. LOGAN  
CHIEF

KEITH K. HORIKAWA  
RADE K. VANIC  
DEPUTY CHIEFS

OUR REFERENCE **EO-DK**

June 20, 2022

SENT VIA EMAIL

Mr. Mark Kawika McKeague  
HoouluAinaEA@g70.design

Dear Mr. McKeague:

This is in response to your letter of May 23, 2022, requesting input on the Draft Environmental Assessment for the Ho'oulu Aina Nature Park project in Kalihi.

The Honolulu Police Department (HPD) has reviewed the project and does not have any concerns at this time.

If there are any questions, please call Major Roland Turner of District 5 (Kalihi) at (808) 723-8200.

Thank you for the opportunity to review this project.

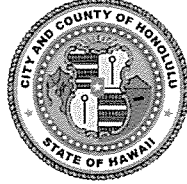
Sincerely,

  
GLENN HAYASHI  
Acting Assistant Chief of Police  
Support Services Bureau

DEPARTMENT OF TRANSPORTATION SERVICES  
CITY AND COUNTY OF HONOLULU

711 KAPIOLANI BOULEVARD, SUITE 1600  
HONOLULU, HAWAII 96813  
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

RICK BLANGIARDI  
MAYOR



J. ROGER MORTON  
DIRECTOR

JON Y. NOUCHI  
DEPUTY DIRECTOR

TP6/22-869315

June 23, 2022

Mr. Mark Kawika McKeague, AICP, Principal  
G70  
111 South King Street, Suite 170  
Honolulu, Hawaii 96813

Dear Mr. McKeague:

**SUBJECT:** Chapter 343, Hawaii Revised Statutes (HRS), Draft Environmental Assessment (DEA)  
Hooulu Aina Nature Park  
Ouaua, Kalihi, Island of Oahu, Hawaii  
Tax Map Key: (1) 1-4-014:001, (1) 1-4-014:026, and  
(1) 1-4-016:003

Thank you for the opportunity to provide written comments regarding the Chapter 343, HRS, DEA; Hooulu Aina Nature Park; Ouaua, Kalihi, Island of Oahu, Hawaii; Tax Map Key: (1) 1-4-014:001, (1) 1-4-014:026, and (1) 1-4-016:003. We have the following comments.

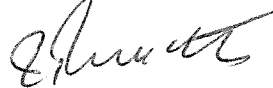
1. Complete Streets. Refer to the Right-of-Way Widths for Planned Street Improvements Plan and map for data on street types including future bicycle, pedestrian, and transit priority configurations at: <https://www.honolulu.gov/completestreets/guidance.html>. As of the date of this letter, the subject segment of Kalihi Street is classified as a "Lane/Alley" planned to have sidewalks, two travel lanes, no bus service, and no on-street parking.
2. Street Usage Permit. A street usage permit from the Department of Transportation Services should be obtained for any construction-related work

Mr. Mark Kawika McKeague, AICP, Principal  
June 23, 2022  
Page 2

3. Neighborhood Impacts. The area representatives, neighborhood board, as well as the area residents, businesses, emergency personnel (fire, ambulance, and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details and status throughout the project and the impacts that the project may have on the adjoining local street area network.
4. Disability and Communication Access Board (DCAB). Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by DCAB to ensure full compliance with Americans with Disabilities Act requirements.

Should you have any questions, please contact Greg Tsugawa, of my staff, at (808) 768-6683.

Very truly yours,



J. Roger Morton  
Director





Section 8

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# References



## Chapter 8

# List of References

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# **Appendices**





Appendix A

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# **Preliminary Infrastructure Assessment**





111 S. King Street  
Suite 170  
Honolulu, HI 96813  
808.523.5866  
www.g70.design

**Date:** December 01, 2021  
**Project:** Ho’oulu ‘Aina  
**Project No:** 221074-01  
**Subject:** Preliminary Infrastructure Assessment for Ho’oulu ‘Aina Master Plan

# 1 Introduction

## 1.1 Overview

Kokua Kalihi Valley (KKV), a nonprofit community organization, proposes to develop portions of a 99.7-acre area of land designated for park development to the Ho’oulu ‘Aina Nature Park. The project will include the restoration of 2 existing structures, native Hawaiian gardens, preserved and restored ancient Hawaiian agricultural walls and terraces, the creation of new walking paths and hiking trails, a nature camp with a bunk house, a tent camping area and a new pavilion—Hale Lauele. The Park and Center will be privately operated but open to the public as a place of quiet recreation, nature studies, health education and the preservation of Hawaiian culture.

## 1.2 Project Location and Description

The project site is located at the head of Kalihi Valley at 3659 & 3635 Kalihi Street, Oahu on State of Hawaii property managed by the Department of Land and Natural Resources (DLNR). The portion of the site nearest to Kalihi Stream (about 42 acres at Tax Map Keys (1) 1-4-016:003 & (1) 1-4-014:026) are located within the “Urban” State Land Use District (SLUD) and the “P-2 General Preservation” County of Hawaii Zoning District. Approximately 57 acres of up-slope land at TMK (1) 1-4-014:001 is located within the “Conservation” SLUD and the “P-1 Restricted Preservation” County of Hawaii Zoning District.

Mauka of the site is undeveloped watershed and forest land. Makai of the site lie private residences on either side of Kalihi Street. See **Figure 1 – Project Location Map**.

## 1.3 Purpose of Report

The purpose of this report is to assess the existing site topography and infrastructure of the area upon which Ho’oulu ‘Aina Nature Park will be located, and to determine the extent of proposed infrastructure improvements necessary to support implementation of the park improvements.

## 2 Existing Conditions

### 2.1 Existing Site Access

Access to the park is along a relatively quiet residential street. Pedestrian access is limited with no surrounding public sidewalks serving the project site. Pedestrians must navigate the unimproved shoulders of the road or compete with cars as they walk on the street pavement. The road narrows to approximately a 12 foot-width along the project site and driveway entrance. Between Kalaepapa Drive and the project parcels, Kalihi Street ranges from 21 to 13 feet in width. Primary vehicular access to the site is through a driveway at the mauka side of Kalihi Street, past a wooden bridge that crosses Kalihi Stream. There is a secondary access, similarly off of Kalihi Street further mauka, through an old driveway on the property at 3659 Kalihi Street but has been fenced off.

### 2.2 Existing Structures

The driveway at 3659 Kalihi Street is still serviceable and leads to a paved pad for a garage structure that has lost its roof over time. A concrete building pad is located south of this garage pad. Uphill of the building pad is an existing cistern that was once filled by a nearby spring and used for irrigation and potable water but is no longer in use.

At 3635 Kalihi Street a driveway that leads to an area where an old cottage was previously located. The area has been cleared and is now used by KKV in its operations. A long driveway, graveled so trucks can drive up, heads to the mauka nursery site. Other existing structures include the Ho'okipa Center, a covered wash station, an apothecary building, the Halau Pavilion, Hale buildings within the agroforestry for programmatic growth, Hale Imu, Hale Wa'a, a mauka nursery and an old bunkhouse building.

### 2.3 Soil

Based on the NRCS Web Soil Survey, about 58% of the soils at the site are classified as Loleka'a silty clay at 15-70% slopes. Loleka'a silty clay is a well-drained soil classified in hydrologic soil group C. About 42% of the soil at the site is classified as rough mountainous land, a well-drained soil classified in hydrologic soil group B. See **Figure 2 – NRCS Soil Map.**

### 2.4 Topography & Existing Drainage Infrastructure

The site appears to gently slope from the southern property line towards the north side of the parcel, parallel to the fronting street along the Ko'olau mountain range. The project site ranges in altitude from a low point of nearly 500 feet above mean sea level (MSL) at the Kalihi Stream Channel to a height of approximately 1,400 feet along the top of Kamanaike Ridge. Immediately above the stream channel much of the project site is relatively level, gently sloping land. Some of the land on the east side of the property has been graded into wide terraces or excavated during the time of

commercial nursery operations and soil extraction/mining. See **Figure 3 – Existing Drainage and Topography Map**.

Uphill of the existing structures two flood control ditches run parallel to the stream in the south-west and north-east directions. Each ditch connects to a gully, running perpendicular to the stream, that discharges runoff on the northern side of the property. No other drainage infrastructure is present, and runoff flows over land or through gullies and Kalihi Stream.

## **2.5 Flood Hazards**

Based off the available geographic information system (GIS) information, most of the property is located in FEMA Flood Zone D. This indicates that the property is in an unstudied area where flood hazards are undetermined, but flooding is still possible. A portion of the property in the north-west corner is classified as Zone X. This indicates that the area is determined to be outside the 0.2% annual chance floodplain. See **Figure 4 – Flood Hazard Assessment Map**.

## **2.6 Existing Wastewater Infrastructure**

Based on correspondence with the Department of Health Wastewater Branch, the site has no cesspool or septic tank system on file. Structures/facilities and services are connected to the City & County of Honolulu's Sewer System. Four existing 6-inch sewer laterals are located on the northern side of the side of the property, each connected to an 8-inch City-owned VCP sewer main that runs within Kalihi Street. See **Figure 5 – Existing Utilities Map**.

## **2.7 Existing Water Infrastructure**

Based on the County of Honolulu Board of Water Supply (BWS) Distribution Maps of the area, an 8-inch water main is located within the Kalihi Street Right of Way (ROW) along the project frontage. BWS records indicate that the property is currently served through a 3/4-inch domestic water meter (Meter No. 15036851). The nearby fire hydrant #M07257 has a static pressure of 41 psi and a residual pressure of 35 psi at a flow of 1000 gpm. See **Figure 6 – BWS Distribution Map**.

According to the BWS, the existing Honolulu water system capacity has been reduced due to the shutdown of the Halawa Shaft pumping station as a proactive measure to prevent migration of fuel contamination from the Red Hill Bulk Storage Tank fuel releases into the Waimalu aquifer. While pumping water from the Halawa Shaft has stopped, BWS will be drawing on other water sources to replace the 20% provided by the Halawa Shaft. The usage of water will be monitored closely and if necessary, conservation will be required if consumption increases over pumpage.

## 3 Proposed Conditions

### 3.1 Roadways and Access

KKV will encourage the city and private land owners along Kalihi Street to remove trees and vegetation that encroach onto the pavement, limiting sightlines and effectively narrowing the drivable surface of the road. It is expected that future improvements, by others (City and County of Honolulu) to Kalihi Street will include paving its shoulders to increase durability and safety for automobiles and pedestrians. Appropriate road width, signage and lighting will be installed near the park entrance and any landscaping will ensure that adequate sight lines are maintained. Vehicle access to the project site is directed up a paved access driveway immediately past the existing wooden bridge.

### 3.2 Parking and Circulation

No additional parking will be constructed for this project. Current on-site parking available in an asphalt surface parking lot near the main driveway will be utilized. Organized groups such as school classes that visit the park will be required to car pool or use a van shuttle system to reduce vehicle trips along Kalihi Street and the need for additional parking at the site. Hale Lauele parking will be accommodated within the existing parking lot.

### 3.3 Proposed Fire Access and Water Supply

Design of the sites, structures, and fire access and water supply systems for the project will be based upon the State Fire Code: National Fire Protection Agency (NFPA) 1, Uniform Fire Code, dated 2012 and all additional amendments as part of the Hawai'i Administrative Rules (HAR) Title 12, Subtitle 7, Chapter 45.2 with City and County of Honolulu amendments. Additional requirements are noted in the BWS Water System Standards, dated 2002. Based upon the above referenced standards, the following criteria should be met in terms of adequate fire access and water supplies:

- Road Width = Unobstructed 20 ft./16 ft. min. and may require upgrading the on-site driveway
- Road Vertical Clearance = Unobstructed 13.5 ft.
- Surface = Capable supporting 73,000 lbs and constructed with an all-weather material.
- Turning Radius = 42 ft. minimum on outside wheel. 28.4 ft. minimum on inside rear wheel.
- Dead Ends = Provide appropriate turnaround (cul-de-sac or hammerhead).
- Signage = Required for entire length of roadway.
- Road shall provide access to 150' of structure (450' if sprinkled), and to 50' of an exterior door at any new facility.
- Provide an adequate fire water supply, capable of supplying the required fire flow as determined by BWS Water Standards, dated

2002. According to Table 100-19 under agricultural land use, the required fire flow is 1,000 gallons per minute for a duration of 30 minutes and may require the installation of a new on-site fire hydrant and/or sprinkler system.

- Provide a residual pressure of 20 psi for on-site hydrants.
- Fire Department Connections (FDCs) for sprinkler systems should be placed on the address side of the building and within 50 ft. of an adequate water supply / fire hydrant.
- Further coordination with the Honolulu Fire Department (HFD) will be required as the design progresses.

### **3.4 Proposed Drainage Infrastructure**

This project will not cause any significant impact to ground or surface water resources due to the minimal construction of new impervious areas. As native vegetation and farming is restored to the site, it is expected that the absorption of rainfall into ground water aquifers will be enhanced.

### **3.5 Proposed Wastewater Infrastructure**

It is anticipated that the planned project will be connected to the City sewer system. Localized mains should be confirmed for available capacity through a submitted Sewer Connection Application (SCA). However, with the limited development and minimal water fixtures proposed in this project, no capacity issues are anticipated through the existing four – 6” laterals and 8” City VCP sewer main.

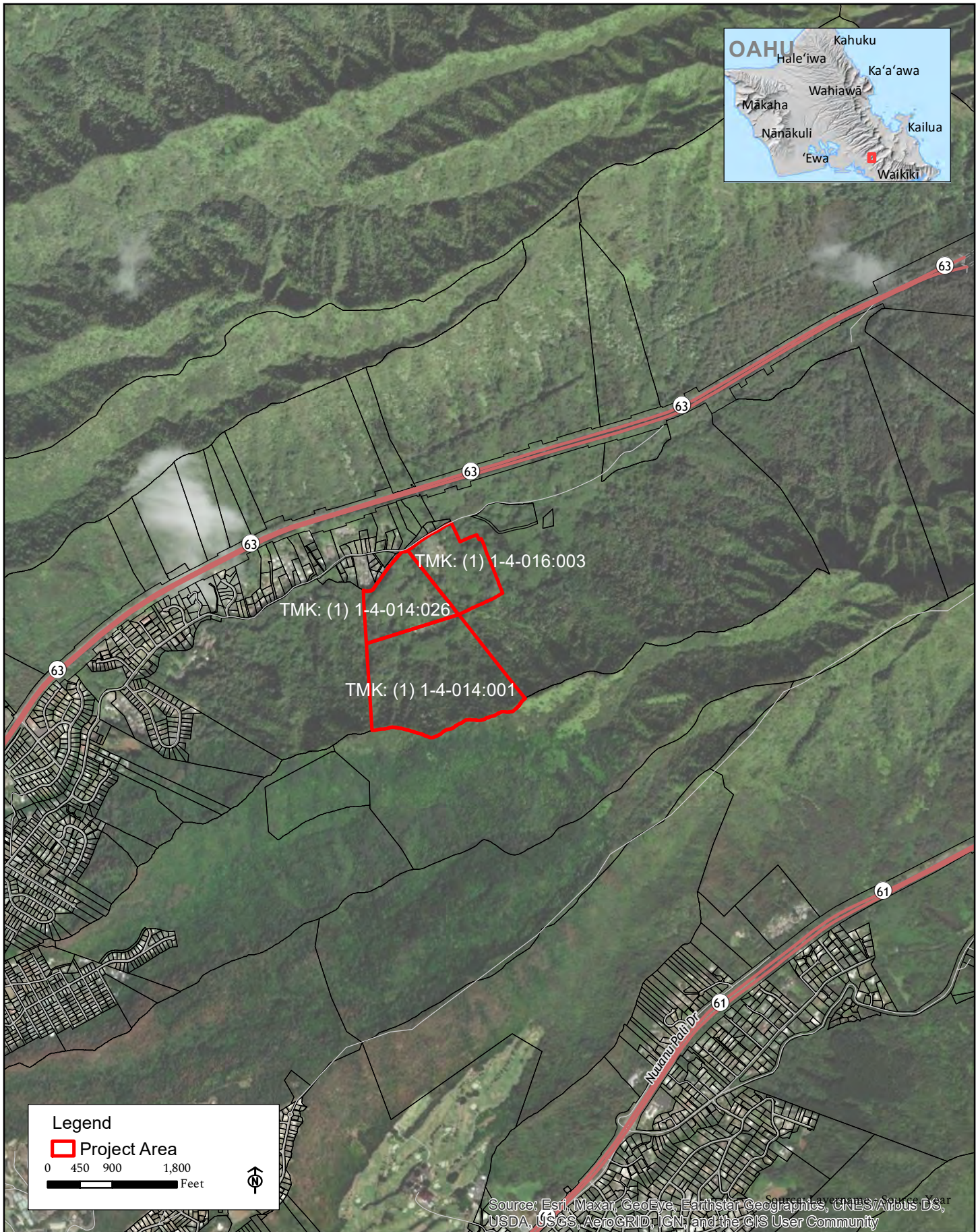
### **3.6 Proposed Water Infrastructure**

The Ho'oulu 'Aina Nature Park water service will be supplied by the BWS, from the 8-inch main in Kalihi Street. A new water meter and water lateral may be installed from the BWS main, or an existing lateral may be utilized if sufficiently sized to service the Park.

A new meter and lateral may be required for fire protection services and a booster pump may also be needed due to existing pressure and elevation differences. BWS cannot confirm the adequacy of the Honolulu water system to accommodate the proposed development at this time. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

### **3.7 Proposed Electrical Service**

Electrical and telephone services have previously been brought to the site from overhead power poles along Kalihi Street and will be utilized for project power needs.



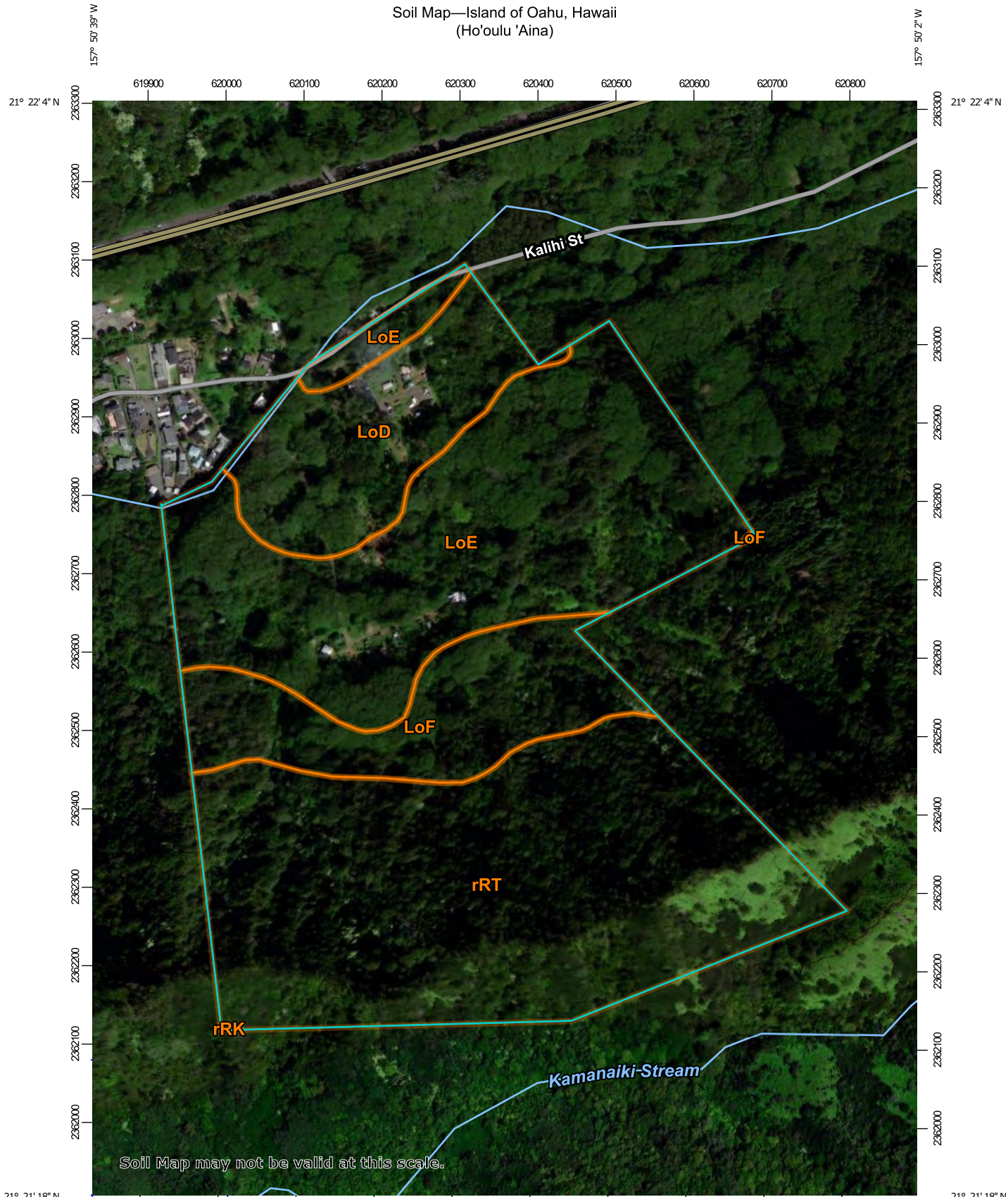
221074-01 HO'OUULU 'AINA  
FIGURE 1

PROJECT LOCATION

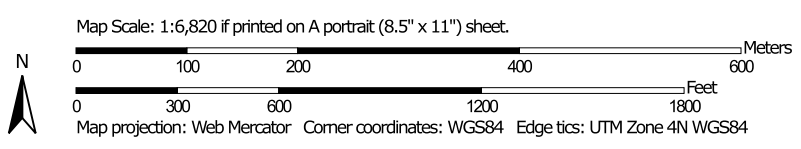


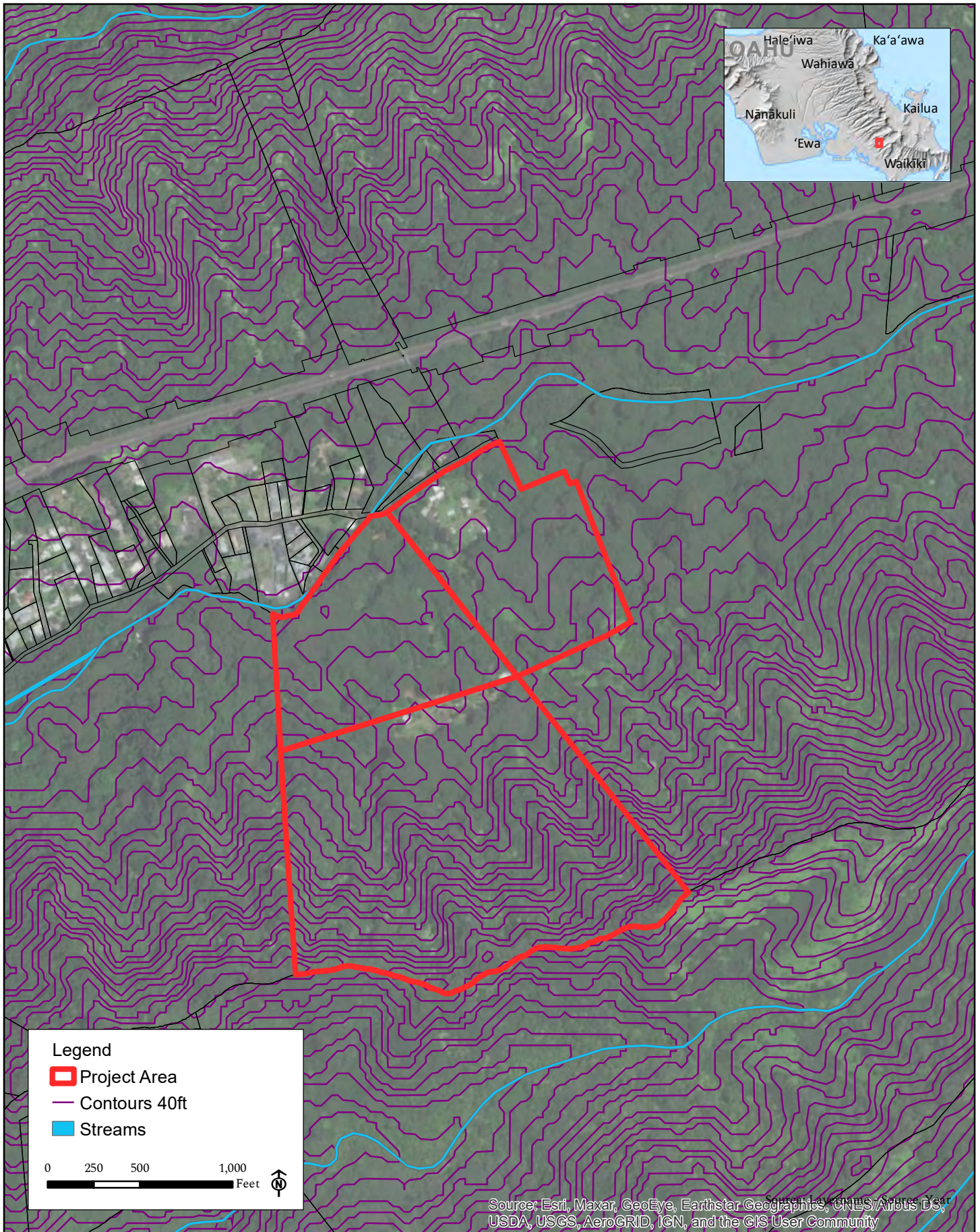


Soil Map—Island of Oahu, Hawaii  
(Ho'oulu 'Aina)



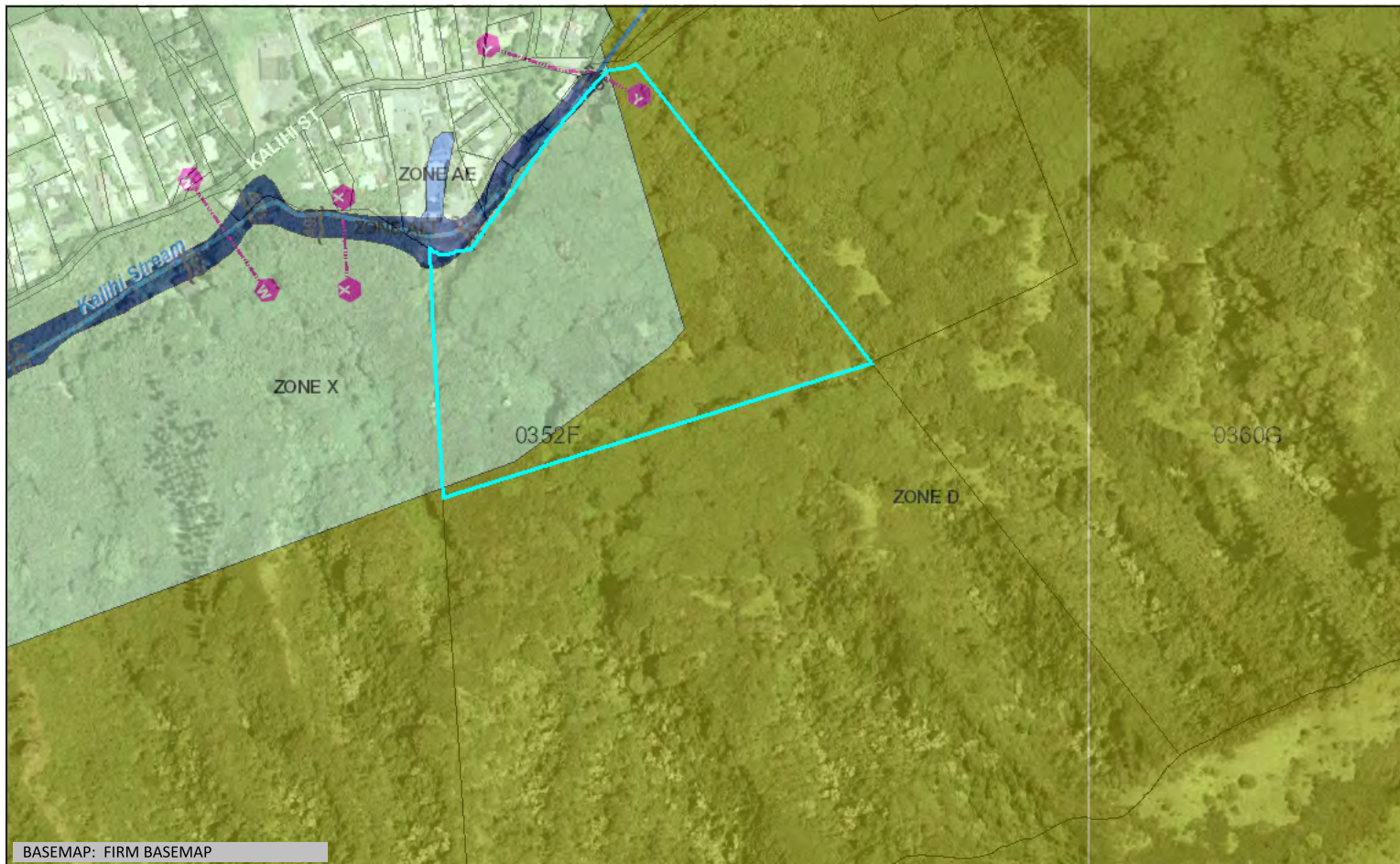
Soil Map may not be valid at this scale.





221074-01 HO'OUULU 'AINA  
FIGURE 3

EXISTING DRAINAGE AND TOPOGRAPHY



# Flood Hazard Assessment Report

www.hawaiiinfip.org

Ho'oulu 'Aina

## Property Information

COUNTY: HONOLULU  
 TMK NO: (1) 1-4-014:026  
 WATERSHED: KALIH  
 PARCEL ADDRESS: ADDRESS NOT DETERMINED  
 HONOLULU, HI 96819

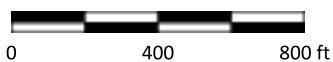
## Notes:

## Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 05, 2014  
 LETTER OF MAP CHANGE(S): NONE  
 FEMA FIRM PANEL: 15003C0352F  
 PANEL EFFECTIVE DATE: SEPTEMBER 30, 2004

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: NO  
 FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO  
 FOR MORE INFO, VISIT: <http://dlnreng.hawaii.gov/dam/>



*Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.*

*If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.*

## FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND

(Note: legend does not correspond with NFHL)

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD** - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

	<b>Zone A:</b> No BFE determined.
	<b>Zone AE:</b> BFE determined.
	<b>Zone AH:</b> Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
	<b>Zone AO:</b> Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
	<b>Zone V:</b> Coastal flood zone with velocity hazard (wave action); no BFE determined.
	<b>Zone VE:</b> Coastal flood zone with velocity hazard (wave action); BFE determined.
	<b>Zone AEF:</b> Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

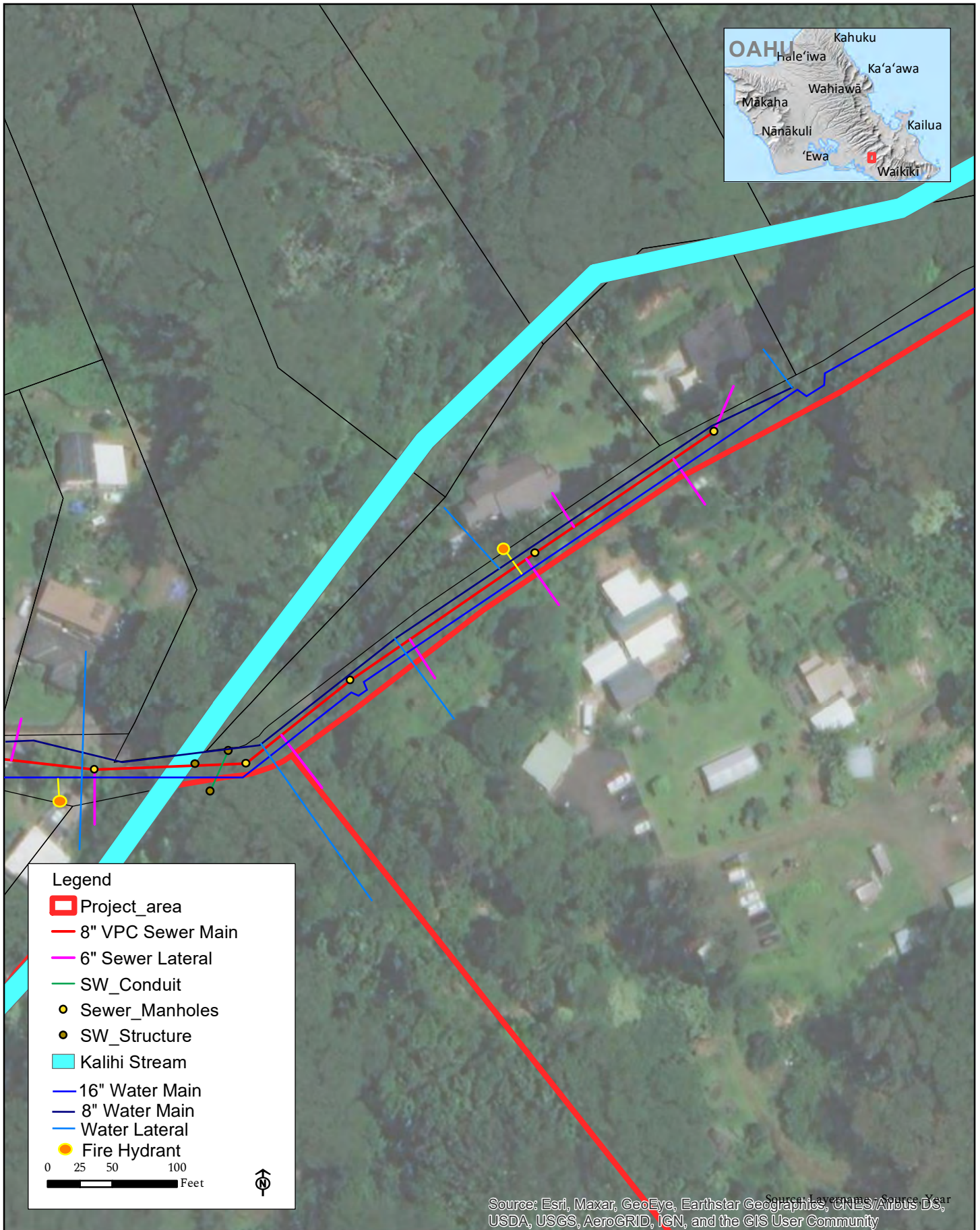
**NON-SPECIAL FLOOD HAZARD AREA** - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

	<b>Zone XS (X shaded):</b> Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	<b>Zone X:</b> Areas determined to be outside the 0.2% annual chance floodplain.

## OTHER FLOOD AREAS

	<b>Zone D:</b> Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.
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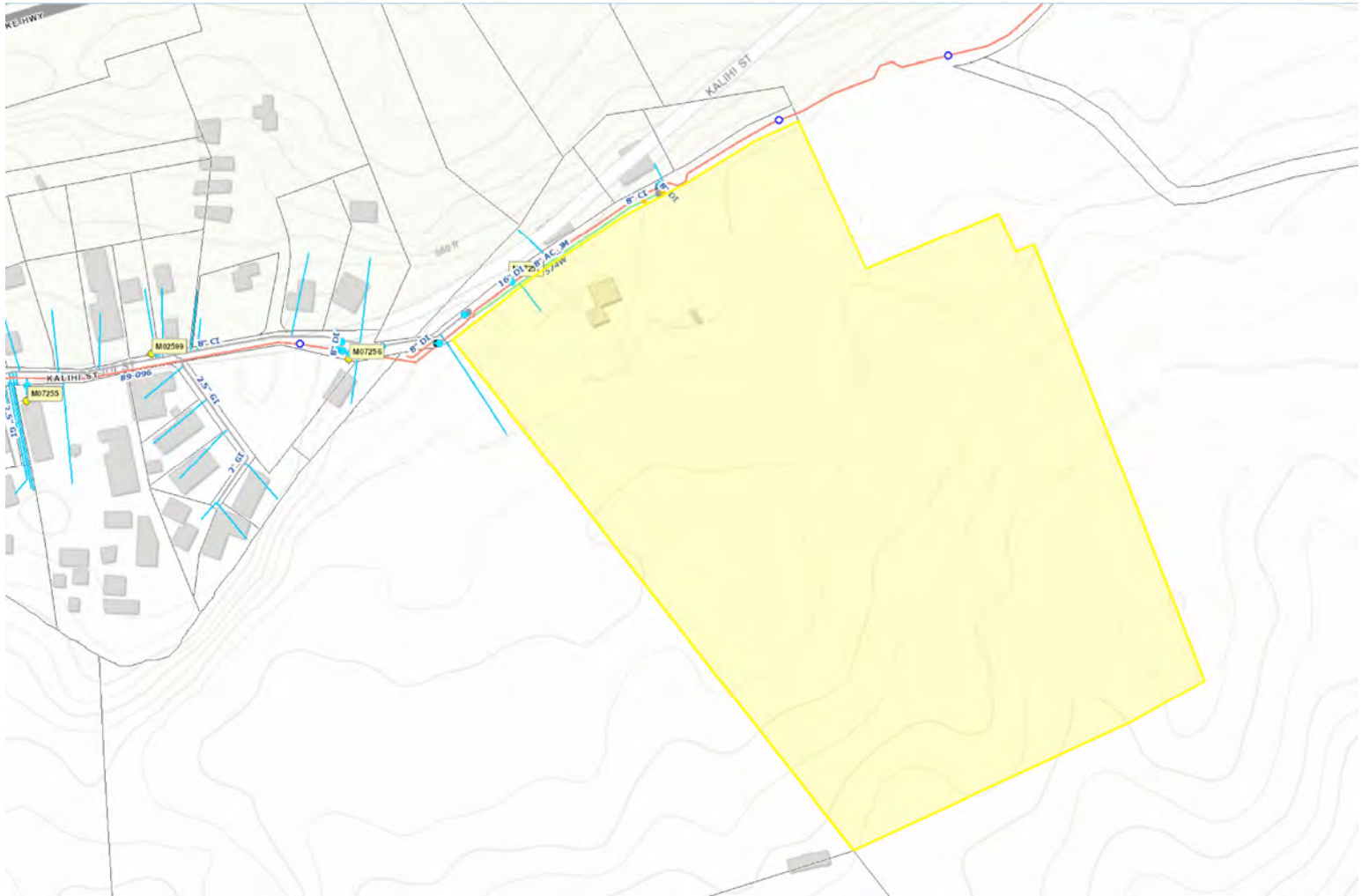
**FIGURE 4: Flood Hazard Assessment Report**



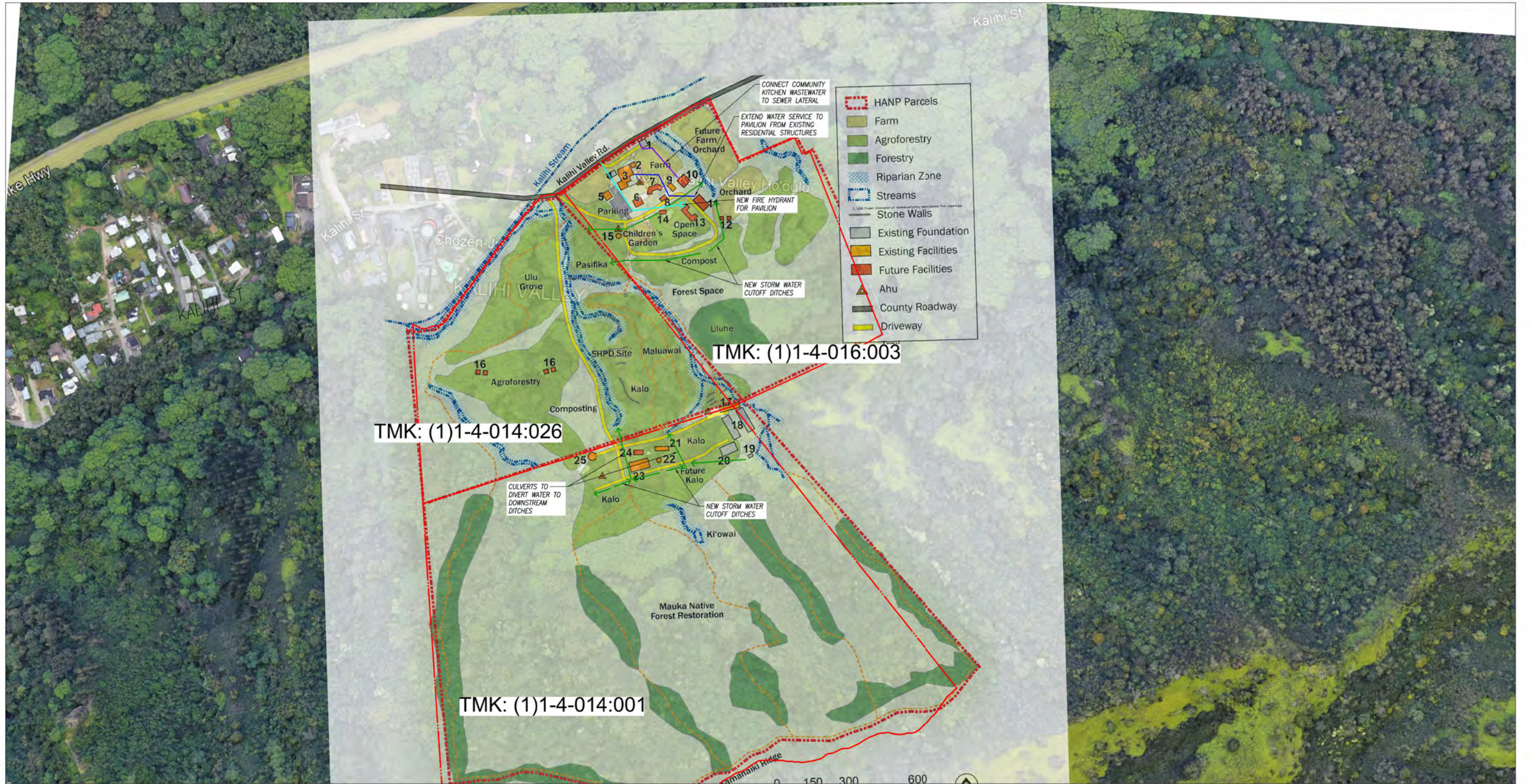
221074-01 HO'OLU 'AINA  
FIGURE 5

EXISTING UTILITIES




Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

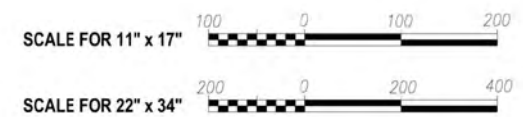


**FIGURE 6:** BWS Distribution Map



**LEGEND**

-  PROPERTY LINE
-  EXISTING 8" SEWER MAIN
-  EXISTING 6" SEWER LATERAL



Appendix B

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# **Botanical Reconnaissance Survey of Kalihi Valley Nature Park**





**B: Botanical Resources Survey**

# A Botanical Reconnaissance of Kalihi Valley Nature Park

for Kokua Kalihi Valley  
June 20, 2005

Joel Q. C. Lau  
Botanist, Hawai'i Specialist  
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## A Botanical Reconnaissance of Kalihi Valley Nature Park

### Introduction

Kokua Kalihi Valley, a non-profit community service organization has received approval for a 20-year lease of about 100 acres of state park land in Kalihi Valley. KKV intends to plan and implement improvements on the property to create a nature park with hiking trails, community gardens, and other facilities. To make way for the park improvements, plans call for the removal of some trees and vegetation. The purpose of this report is to assist the park planning process and help guide or constrain the implementation of park programs that could affect the botanical resources of the site.

A botanical reconnaissance of the land where park development has been planned was conducted on March 19, 2005. The main objective of this reconnaissance was to search for rare and endangered native plants that should be protected from harm in the development of the park, and that could possibly be included among the park's managed natural resources. The plants targeted in the reconnaissance were those that have been listed as endangered or threatened species by the U.S. Fish and Wildlife Service, along with any other native plant species that have not been listed as endangered or threatened, but are considered rare or "species of concern" by the U.S. Fish and Wildlife Service, the state Division of Forestry and Wildlife, or by the Hawai'i Natural Heritage Program.

The parcels of land included in the park extend from about 500 ft to almost 1,500 ft in elevation. The reconnaissance was focused on the lower elevations of the property, from about 500-800 ft in elevation, which is where the currently planned park development will take place. Only a short time was spent in the elevations above 800 ft on the steeply sloped valley side, in order to assess the potential for that part of the property to contain rare plants. For the purposes of this document, the portion of the property below 800 ft is referred to as the valley bottom. The part of the property above 800 ft is referred to as the valley side. The reconnaissance involved traversing the area on foot, and utilizing binoculars at vantage points. Plant taxonomy and nomenclature in this document follows Wagner *et al.* 1999 for the flowering plants and Palmer 2003 for the ferns and fern allies.

### Description of the setting and vegetation

Parts of the valley bottom of the property had been leased to plant nurseries in the past. The nurseries were abandoned and the land has been unused for more than two decades. Warehouses, nursery structures, and roadways are still located on the property. Areas that were open when the nurseries were in operation have since been overgrown. Other areas that had not been cleared are vegetated in old alien forest.

The forest below 800 ft is mostly dominated by naturalized alien tree species, with only small patches of native vegetation remaining. Much of the forest canopy is composed of albizia (*Falcataria moluccana*). Other common alien trees are rose apple (*Syzygium jambos*), gunpowder tree (*Trema orientalis*), black bamboo (*Phyllostachys nigra*), koka

(*Bischofia javanica*), strawberry guava (*Psidium cattleianum*), common guava (*Psidium guajava*), shoebutton ardisia (*Ardisia elliptica*), ironwood (*Casuarina equisetifolia*), fiddlewood (*Citharexylum caudatum*), kukui (*Aleurites moluccana*) and Formosan koa (*Acacia confusa*). There are also some trees in the parcel that were planted in the early 1900's, but have not spread very much, such as the Cook pine (*Araucaria columnaris*), and eucalyptus (*Eucalyptus* sp.).

The vegetation below 700 ft is almost totally alien in composition. Above 700 ft native plants within the alien forest are more frequently encountered. The native plants observed here include `ōhi`a (*Metrosideros* spp.), koa (*Acacia koa*), hapu`u pulu (*Cibotium chamissoi*), `ie`ie (*Freycinetia arborea*), papala kepau (*Pisonia umbellifera*), mamaki (*Pipturus albidus*), lama (*Diospyros sandwicensis*), alahe'e (*Psydrax odorata*), and uluhe (*Dicranopteris linearis*). Polynesian introductions seen below 800 ft included kukui, kamani (*Calophyllum inophyllum*), ti (*Cordyline fruticosa*), `ohi`a `ai (*Syzygium malaccensis*), coconut (*Cocos nucifera*), and hau (*Hibiscus tileaceus*; possibly native). A variety of ornamental plant species persists around abandoned nursery structures and residences.

The vegetation of the steep valley wall portion of the parcel is largely dominated by alien plant species, but a larger percentage of the vegetation here is native compared to the alien forest of the valley bottom portion. The native plants observed here were common mesic forest plants.

## **Discussion and Recommendations:**

No listed endangered or threatened native plants nor any other rare native plants were found during this reconnaissance. This was not unexpected, given the long history of alteration and destruction of native vegetation of the valley bottoms in the Honolulu area in pre-Western times up until today. There is little potential for the discovery of rare plants that may have been missed on this reconnaissance based on the documented patterns of occurrence of rare and endangered native plants in the valleys in the Honolulu area.

The potential for the discovery of rare plants is greater in the valley wall part of the property than in the valley bottom portion. These upper elevations would require further survey for rare and endangered plants should any park development be planned there.

Some of the alien plants in the part of the study area that are planned for park development are not compatible with many aspects of park use. For instance, the albizia that dominates in the lower elevations is known to be especially hazardous because its limbs frequently break off and fall to the ground. Many of the albizia trees are still young, and the problem will worsen if the trees are allowed to mature.

Another alien plant species of the study area that should be controlled is the black bamboo. This bamboo species spreads rapidly by rhizomes and is very tenacious. Land

that is overgrown with bamboo would be of little use. It is probably in the best interest of the park for the bamboo to be contained, and eventually eradicated.

Two widely separated immature plants of the alien weed *Miconia calvescens* were found on this reconnaissance. The species is considered one of the most serious alien plant threats to the native Hawaiian biota, and an effort by state Division of Forestry and Wildlife personnel is underway aimed at eradicating it on O`ahu. The park property has been for several years a key site in the eradication attempt, and as indicated by the finding of two immature individuals of *Miconia* on this reconnaissance, the parcel needs to continue to be a focal point in the island-wide *Miconia* eradication program.

The restoration of native forest could be incorporated into plans for the park. A restoration effort in the park would serve as a valuable educational resource, since there is not much native mesic forest of any kind on O`ahu that is of easy access to residents of the island. Not much native forest restoration has been attempted in Hawai`i, so such an endeavor would necessarily be experimental in nature. Some of the species of the original native forest of the valley bottom still survive in the area. Others probably have been locally extirpated and would have to be reintroduced from elsewhere on the island. The species selected for reintroduction should be based on research on the species composition of examples of native vegetation on O`ahu, or the remnants of it, in settings similar to the park property in terms of geography and climatic conditions.

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**Native Hawaiian Cultural Impact  
Assessment Kalihi Valley Nature Park  
Project Kalihi Ahupua‘a, Kona District,  
Island of O‘ahu TMK’s: 1-4-14-01 & -26,  
1-4-16-03**



**NATIVE HAWAIIAN CULTURAL IMPACT ASSESSMENT  
KALIHI VALLEY NATURE PARK PROJECT  
KALIHI AHUPUA'A, KONA DISTRICT  
ISLAND OF O'AHU  
TMK's: 1-4-14-01 & -26, 1-4-16-03**

**JULY 2005**

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## INTRODUCTION

This document comprises “A Native Hawaiian Cultural Impact Assessment Report” for the Active Living Center: Kokua Kalihi Valley Nature Park Master Plan. The parcels that make up Kalihi Valley Nature Park are in the Conservation district and are leased from the Department of Land and Natural Resources (DLNR), State of Hawai‘i by Kokua Kalihi Valley, therefore are subject to the requirements of Chapter 343, Hawai‘i Revised Statutes. Cultural impact assessments differ from other types of impact assessments included in environmental assessments or environmental impact statements, as it includes information relating to the practices and beliefs of a particular cultural or ethnic group or groups.

The following section provides information on the cultural and historic patterns of the Kalihi Valley Nature Park project area. A historical and cultural understanding of the project area contributes to the understanding of how the area has changed over time. Chapter 1 provides background information on the framework of the study and Native Hawaiian political status. This includes a description of objectives, respondent qualifications, and research methodologies. Chapter 2 describes the ethnological history of the Kalihi Valley Ahupua‘a in the Kona District, island of O‘ahu that includes an historical overview of events and figures from the mythical era to the contemporary period. Chapter 3 reports on spiritual beliefs and practices, place names and legends pertaining to Kalihi Valley. Chapter 4 describes areas of concern for Kalihi Valley, access and trails, hunting, gathering rights and any other cultural practices. Chapter 5 discusses conclusions derived from results of the research project and recommendations for mitigating cultural impacts.

## PROJECT NARRATIVE

### Kokua Kalihi Valley Comprehensive Services

Kokua Kalihi Valley (KKV) is a community-organized and community-operated non-profit corporation with thirty years of experience in the direct delivery of primary health care to medically underserved individuals and families. KKV's full range of programs include dental, medical, behavioral health, prenatal, family planning, nutrition (WIC), immunization, STD-HIV testing and services, health education, social services, elderly and youth services, transportation, outreach, professional education, and community advocacy. The program is known locally as the 'Ohana Women's Health and Wellness Program. 'Ohana means family in the Hawaiian language.

As part of the wellness program, KKV has volunteered to make utilization of 100 acres of State Park land part of its program for the people of Kalihi and throughout the State. This land is located at the end of Kalihi Street just past the wooden bridge. For more than 25 years, some of the neighbors and community leaders have been petitioning the State and City governments to make Kalihi Valley Nature Park Land a quiet nature preserve for environmental education, health and wellness recreation, and the preservation of Hawaiian culture.

The State, Department of Land and Natural Resources (DLNR) have approved a 20 year lease of this public land to KKV. The community has come together at the Kalihi Valley Park Planning Committee Meeting to help make sure that the design and programs on this beautiful site will meet the needs and concerns for this park.

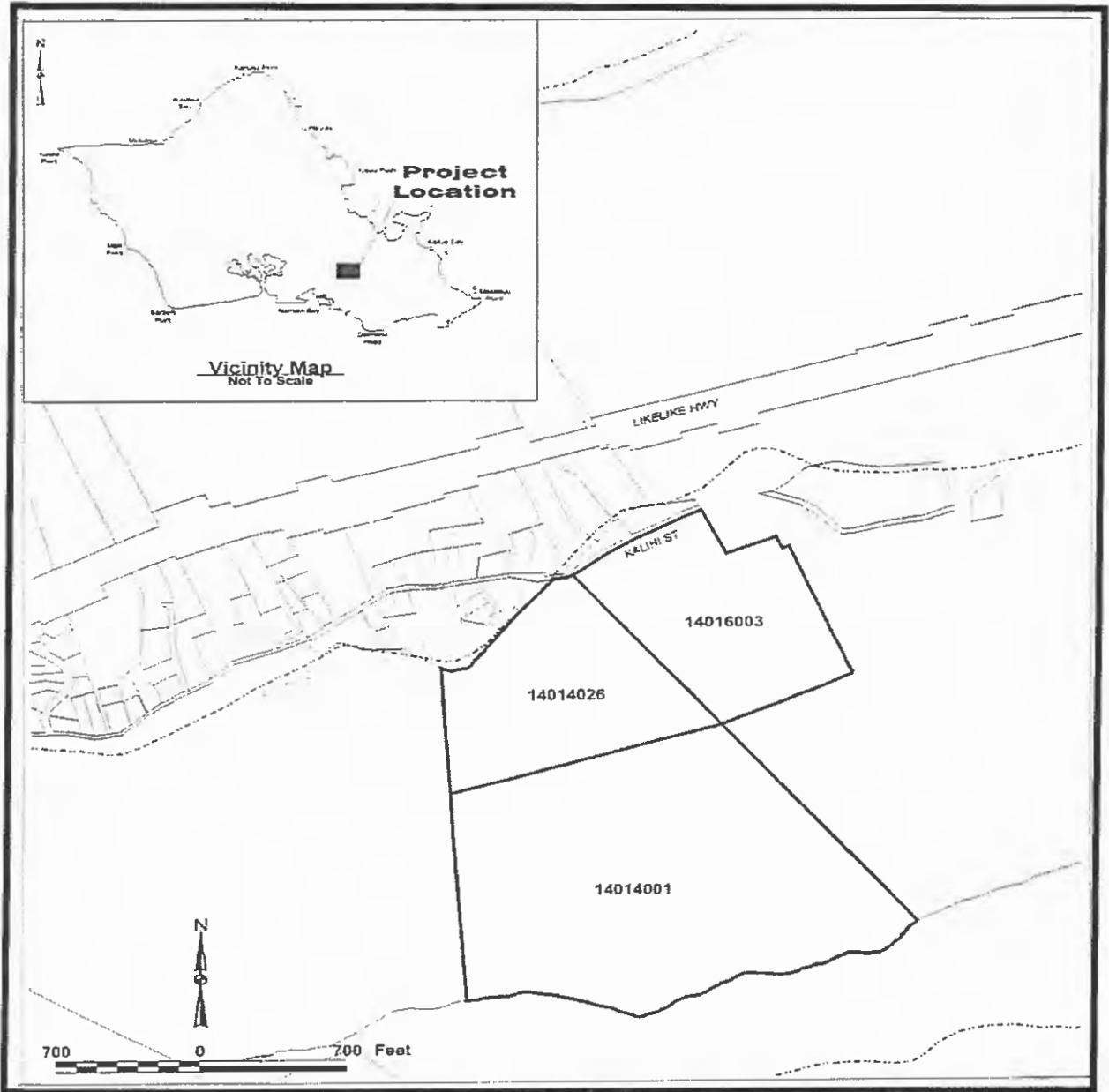
### The Native Hawaiian Cultural Assessment Study

In the spring 2005, a University of Hawai'i graduate student intern became involved with KKV to provide a cultural impact assessment report for Kokua Kalihi Valley Nature Park. The Environmental Council suggests the following tasks be considered when conducting such a study:

1. Describe cultural resources, practices and beliefs found within the broad geographical area, e.g., district or *ahupua'a*;
2. Generate a list of historical, ethnographic, and other culturally related documentary research;
3. Identify and describe the cultural resources, practices, and beliefs related to the potentially affected area;
4. Assess the impact of the proposed action, alternatives to such action, and mitigation measures on the cultural resources, beliefs, and practices identified.

It is hoped that this report will assist decision makers, planners, and communities on ways to take into account Hawaiian customs, practices, beliefs and rights when developing plans and projects, and when assessing environmental and cultural risk to Hawaiian and local communities.

**Figure 1. Location of Project Site Map**



## CHAPTER 1

### PURPOSE AND GUIDELINES

#### Purpose and Guidelines

The purpose of this study is to gather information on Hawaiian ethnographic resources in the region of upper Kalihi Valley, Honolulu, O'ahu, in order to assess potential impacts to traditional cultural beliefs, practices and resources that may result from activities proposed in the Kalihi Nature Park Master Plan. State of Hawai'i policy under Chapter 343, Hawai'i State Revised Statutes outlines cultural impacts on cultural practices and cultural features that may be affected by Articles IX and XII of the State Constitution, other State laws, and the legal precedents of the State requiring government agencies to promote and preserve cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups. These aspects of culture have been passed down through the generations, usually orally or through continuous practice.

The major tasks of this study were to:

1. Conduct literature searches at the following locations: the University of Hawai'i Hamilton Library, Bernice Pauahi Bishop Museum, the State of Hawai'i Public Library, and the Hawai'i State Archives. This activity provided a foundation for ethno-historical and ethnographic information on Native Hawaiian cultural and religious customs, beliefs, and practices as they relate to the project site.
2. Extract place names from historical maps found in museums and archives for interpretation by tradition bearers and practitioners. There is a broad range of meanings for many Hawaiian place names and there is extensive speculation over meanings that may have been obscured over generations. The intent of this aspect of the research was to clarify the location, geographic extent, and possible pronunciation and cultural meaning.
3. Review chants and hulas to identify significant sites, *wahi pana* (sacred places), and cultural and religious use areas.

Native Hawaiians with traditional or oral knowledge of natural and cultural resources in upper Kalihi Valley were the participants of this study. However, Native Hawaiians with a range of skills, knowledge and interests are involved in or seek to revive and re-establish the traditional cultural, religious, and customs and practices in the project area.

#### Respondent Qualifications

In order to acquire information relevant to the study objectives, individuals were sought for interviews and discussions. Several terms have been used in past ethnographic efforts to describe individuals who have been identified as experts and whose knowledge is worthy of

documenting for the purposes of advancing indigenous knowledge, decision-making, or policy and program development. Such terms have included: tradition bearer, *kama'āina* witness, *kupuna*, cultural informant, and practitioner. These terms are not mutually exclusive and it is difficult to make exact distinctions between the populations they are intended to represent. They refer to a broad range of individuals who may be scholars who have researched aspects of Hawaiian culture, individuals who practice traditional customs as a way of everyday life, those who possess traditional knowledge of place they may no longer visit, those who have a deep understanding of customs they no longer practice, educators and proprietors, etc. Respondents for this study included all of the above, although the major emphasis was placed on identifying those persons with traditional knowledge of places, customs, and practices in the upper Kalihi Valley project area. Those who were chosen for interviews were the individuals who had knowledge of Hawaiian culture and practices.

### **Selecting and Contacting Respondents**

Other criteria used to select individuals for interviews were related to the informant's knowledge, the clarity of his/her ideas or recollections, the risk of losing this information due to old age or ill health, the enthusiasm of the informant to participate, and the representativeness of a particular kind of knowledge or experience. Although many of the informants were bilingual (Hawaiian/English), all interviews were conducted in English. Several of the interviews were audio-taped and, as a back-up, hand-written notes were taken by this researcher.

### **Areas Assessed In the Interviews**

The Health Environmental Risk Ranking Report (HERR), (Minerbi, McGregor, Matsuoka, 1993) identified aspects of Hawaiian and local culture that should be assessed in a socio-cultural impact study. Drawing from this report, the investigator developed open-ended questions that were used in an informal interview format to obtain information on the following areas (See Appendix B for interview materials):

1. Community Life – Refers to the cohesion and integrity of “cultural *kipuka*”; the continuity of life cycle events and social evolution of residents sharing a common locale, culture, and lifeways.
2. Family Life – Refers to the cohesion and integrity of the ‘ohana or extended family system.
3. Human Well-Being Spirituality – Refers to physical, mental, and spiritual health and how they may be affected by cultural disruption or development.
4. Customs and Practices – Refers to subsistence practices and the methods used to obtain natural resources; spiritual beliefs and associated customs and practices; behaviors and beliefs that reflect genealogical or intergenerational linkages to ancestral lands; and the significance of cultural/historic sites.

5. Rights — Refers to the exercise of rights defined in the Hawai‘i State Constitution, the Hawai‘i Revised Statutes, the American Indian Religious Freedom Act (AIRFA), and common law which was incorporated into the Hawaiian legal system of 1892.
6. Natural Environment and Ecological Resources — Refers to the different resource zones within a particular district that offer various types and species of resources necessary to maintain cultural practices.

### **Cultural Practitioners**

The term “Hawaiian practitioner” is inclusive of members of Hawaiian *‘ohana* (extended family) and cultural groups who have established or seek to revive cultural, religious, or subsistence customs, beliefs, and practices in a particular district. The definition that is proposed in amendments to the American Indian Religious Freedom Act is relevant and applicable. It defines a Hawaiian practitioner as

...any Native Hawaiian with an obligation to protect a Native Hawaiian religious site or any Native Hawaiian who practices Native Hawaiian religion or engages in a Native Hawaiian ceremonial or ritual undertaking.<sup>1</sup>

Customs and practices are usually established in relation to a district in which the *‘ohana* or cultural group has exercised or intends to re-establish traditional access and use rights. Thus, Hawaiian practitioners usually can be considered within the following categories relative to a particular locality:

1. Members of Hawaiian *‘ohana* and Hawaiian cultural groups living within or in close proximity to the natural /cultural resource area being considered and frequently use the area for cultural, religious, or subsistence purposes and activities (Gathering Rights Article XII, Section 7, Hawai‘i State Constitution).
2. Members of Hawaiian *‘ohana* who live outside of the natural and cultural resource area but have established or seek to re-establish and revive religious, cultural, or subsistence practices (Gathering Rights Article XII, Section 7, Hawai‘i State Constitution).
3. With regards to Hawaiian Homelands, Hawaiians and their *‘ohana* who seek to get established on those lands as stewards, curators, settlers, or license holders are included.

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<sup>1</sup> Native Hawaiian and Local Cultural Assessment Project: Matsuoka, McGregor, Minerbi 1996: 9



4. Non-Hawaiians who are part of Hawaiian *'ohana* through intermarriage or *hanai* are included in the above three categories (Gathering Rights Article XII, Section 7, Hawai'i State Constitution).
5. Hawaiian cultural groups who live outside of the natural/cultural resource area but have established or seek to re-establish and revive religious, cultural, or subsistence practices in those districts. These also include traditional healers who may use the areas to gather *la'au lapa'au*, native plants for medicine; *hula halau* whose chants and dances honor deities associated with the natural/cultural resource area who may need to gather certain native plants from these districts; fisherman, hunters, gatherers, taro planters etc. who have accessed and used the natural/cultural resource area.

### **Contemporary Political Status of Hawaiians: Why an Ethnography on Hawaiians?**

Although Hawaiians are not organized as a nation today, there are efforts underway to reconstitute a government for a sovereign Hawaiian nation. There are several organizations who are involved at different levels in the process.<sup>2</sup> In the absence of a national government, *'ohana* networks survive as the primary traditional social unit of organization.

The Indigenous Hawaiian people, unlike Native Americans, Aleuts, and Eskimos, are not yet recognized as a nation by the United States government. Nevertheless, Congress has included Hawaiians in a definition of Native Americans in federal legislation which recognizes the distinct social condition and cultural beliefs, customs, and practices of the indigenous peoples within the United States. The definition currently being used in Congress for "Native Hawai'i" is, "any individual who is a descendent of the aboriginal people, who prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawai'i." Federal laws are relevant to this ethnography because they relate to the protection of cultural resources.

The Constitution and Hawai'i Revised Statutes of the State of Hawai'i also recognize the unique status of the Native Hawaiians and affords protection for traditional Hawaiian beliefs, customs, and practices.<sup>3</sup> The recognition of Hawaiian as an official language of the State of Hawai'i and the acknowledgement that the State of Hawai'i has a responsibility to perpetuate the Hawaiian culture laid an important foundation for state protection of Hawaiian culture. In addition, Article XII, Section 7, of the Hawai'i State Constitution states:

The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua'a* tenants who are descendants of native Hawaiians who inhabited the Hawai'i and Islands prior to 1778, subject to the right of the State to regulate such rights.

---

<sup>2</sup> Ka Lahui Hawai'i, claiming to represent 20,000 members, has already held 4 constitutional conventions which have established their own national legislature, governor, and council of elders.

<sup>3</sup> A comprehensive compilation and analysis of laws and court cases affecting Native Hawaiians was published as the *Native Hawaiian Rights Handbook* in 1991 by the Native Hawaiian Legal Corporation (edited by M. Mackenzie, esq.)

During more than 200 years of continuous contact with Europe, America, and Asia beginning in 1778, Hawaiian customs, beliefs, and practices have undergone uneven processes of change, continuity, and revitalization. The reign of King David Kalākaua from 1874 through 1891 is distinguished as a period of renaissance for the Hawaiian culture. Hawaiian culture again went through a period of revival and renaissance in the 1970's and 1980's. A decade after Hawai'i became a state in 1959, the awareness and practice of Hawaiian culture and spiritual customs and beliefs heightened. This renewal was manifested in such activities as establishment of Hawaiian language pre-schools and Hawaiian language immersion classes, an increase in the number of *hula hālau* or schools which teach traditional Hawaiian dance and chant, and the development of Hawaiian studies in public and private schools from elementary to university levels. Traditional navigational arts and skills were revived with the transpacific voyages of the Polynesian Voyaging Society on the double-hulled canoe, *Hokule'a* (navigational star). The traditional practice of *aloha 'āina* (love the land) in rural Hawaiian communities, strongholds of traditional Hawaiian subsistence lifestyles, gained a new prominence.

At present, there are numerous Hawaiian organizations working for re-establishment and recognition of sovereign rights in the areas of Hawaiian health, education, and standards of living. Hawaiians also seek to protect and perpetuate the natural and cultural resources essential for religious, cultural, and subsistence customs, beliefs, and practices. Hawaiians are seeking redress for past injustices, restitution of all of the territory of the Hawaiian nation, compensation for mismanagement and destruction of ceded lands and natural resources, and the re-establishment and recognition of a government to exercise sovereignty and self-determination (Hawaiian Sovereignty Advisory Commission, 1994).



## Cultural Kipuka: A Framework for the Ethnography of Upper Kalihi Valley

The social significance of traditional Hawaiian rural communities for the perpetuation of native Hawaiian society may be compared to phenomena in nature. Botanists in their study of the natural rain forest have observed that eruptions have destroyed and covered large areas of forest lands, leaving little oasis of native trees and plants in their wake called *kipuka* (opening). From these natural *kipuka* come the seeds and spores for regeneration of the native flora. For contemporary Hawaiians, traditional Hawaiian rural communities are cultural *kipuka* from which Hawaiian culture can be regenerated and revitalized back into the contemporary setting. Cultural *kipuka* were often traditional centers of spiritual power. In traditional Hawaiian chants and mythology, major *akua* (gods) and Hawaiian deities were associated with these areas.

### Historical Description

The ethnographic histories of Kalihi Valley relate to the major historical periods in Hawai'i. The traditional cultural significance of the district (Kona) was examined and the place name for the district as well as and the '*olelo no 'eau*, or descriptive proverbs and poetic sayings for which the area is famous, were interpreted. These provide valuable insights about the cultural resources and features for which the area was known and thus the role of this area overall in the traditional cultural practices and customs of Hawaiians.

In his introduction to *Ancient Sites of O'ahu*, Edward Kanahale explained the relationship of myths about various deities to *wahi pana* or sacred places throughout the islands. He also explained why the understanding of a place, its place names, and the reason for its designation as *wahi pana* or sacred area is essential to understanding the area's function and cultural significance to Hawaiian society:

“As a native Hawaiian, a place tells me who I am and who my extended family is. A place gives me my history, the history of my clan, and the history of my people. I am able to look at a place and tie in human events that affects me and my loved ones. A place gives me a feeling of stability and of belonging to my family, those living and dead. A place gives me a sense of well-being and of acceptance of all who have experienced that place.

The concept of *wahi pana* merges the importance of place with that of the spiritual. My culture accepts the spiritual as a dominant factor in life; this value links me to my past and to my future, and is physically located at my *wahi pana*.

Where once the entire native Hawaiian society paid homage to numerous *wahi pana*, now we may give *wahi pana* hardly a cursory glance. **Only when a native Hawaiian gains spiritual wisdom is the ancestral and spiritual sense of place reactivated. Spiritual knowledge and the *wahi pana* are ancestrally related, thus spiritual strength connects to the ancestral guardians, or '*aumakua*. My '*aumakua* knew that the great gods created the land and generated life. The gods infused the**

earth with their spiritual force or *mana*. The gravity of this concept was keenly grasped by my ancestors: they knew that the earth's spiritual essence was focused through the *wahi pana*" (James 1991).

From Ulu and Nana-ulu, sons of Ki'i, twelfth in succession from Wākea and Papa, all high chiefly families count descent. Hikapoloa, as well as the Waha-nui and Keikipaanea families of early legend, belong to the Nanaulu line. The important Māweke family is, according to Kamakau, the first of that line from whom men today trace their ancestry. Their contemporaries are the Paumakua of O'ahu, the Kuhiailani of Hawaii, the Puna of Kaua'i, the Hua of Maui, and the Kamāuaua of Moloka'i. To the Ulu line belongs the late migration of chiefs introduced by Pā'ao to the Island of Hawaii, from whom most families of that island trace descent. Both legends, that of Pā'ao and that of Māweke, are believed to have bearing upon early colonization of the Hawaiian group from North Tahiti.

The coming of Māweke and his sons to the Hawaiian group is dated sometime between the eleventh and twelfth centuries. Their descendants are supposed to have occupied the whole of O'ahu and spread to the islands of Kaua'i, Maui, and Moloka'i, and hence, some say, come the differences in speech and custom between these islands and Hawai'i. Of the three sons of Māweke, Mulieleali'i who inherited his father's lands on the south side of the island of O'ahu, Keaunui who settled the western end of the island, and Kalehenui who took the north side, it is the children of the first son about whom legends are told today. Of the three sons of Mulieleali'i, Kumuhonua, Mo'ikeha, and Olopana, it is the firstborn, Kumuhonua, who succeeds to his father's lands. Kamakau asserts that the two younger brothers, Mo'ikeha and Olopana, make a sea attack upon him and are defeated and taken captive, together with La'a. However, this may be the Kumuhonua line of O'ahu ruling chiefs which ends with Haka. With Mailikukahi, who succeeds Haka, the Mo'ikeha branch is established as the ruling line.<sup>4</sup>

### **Kalihi's Past**

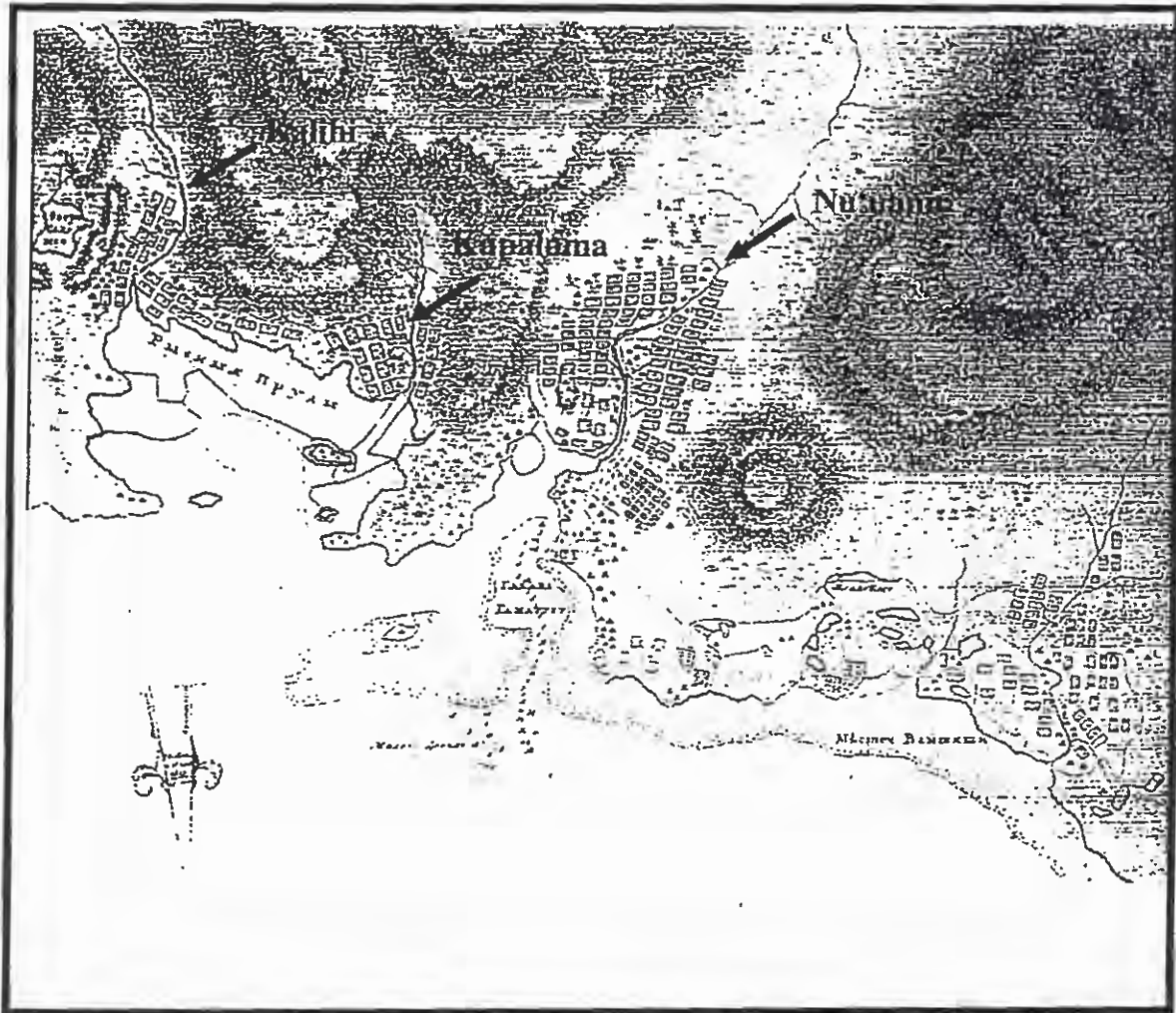
After 1778, the responses of the Hawaiian people changed and were largely influenced by the individual social and economic roles they played in the society. The rejection or acceptance of the Western culture was largely the prerogative of the ruling class of *Ali'i* (chief/chiefess). The earliest recorded references to this area are provided by descriptions, maps, and drawing of the Western explorers who sailed through Hawaiian waters in the early 1800's.

In 1816, Otto von Kotzebue and his fellow travelers from the Russian ship *Riurik* explored the areas west to Honolulu. His journal describes this passage through the region from Nu'uaniu through Kalihi, to Moanalua, and beyond to 'Ewa. His map of Kalihi, Kapālama, and Nu'uaniu (Otto von Kotzebue 1817 in southeast O'ahu shows extensive *lo'i* on either side of the Kalihi Stream and a number of fish ponds. It also marks trails that he followed from Honolulu to 'Ewa (see Figure 3).

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<sup>4</sup> [www.sacred-texts.com](http://www.sacred-texts.com)

Figure 3. Location Map of 1817 (Otto von Kotzebue) of Kalihi, Pālama, and Nuʻuanu



John Papa Iʻi, a prominent leader in the Hawaiian Kingdom during the 19<sup>th</sup> Century, recalls his childhood, circa 1810, and makes reference to the taro patches of Kalihi. He also makes note of the extensive trail network utilized at that time, which indicates the important role Kalihi had in connecting the population centers of Oʻahu:

“When the trail reached a certain bridge, it began going along the banks of taro patches, up to the other side of Kapalama, to the plain of Kaiwiula; on to the taro patches of Kalihi; down to the stream and up to the other side; down into Kahauiki and up to the other side; turned right to the houses of the Portuguese people . . .” (Iʻi, 95)

## **Monarchial Period**

Throughout the monarchial period and upon the death of Kamehameha in 1819, rivalry and rebellion was feared from rival traditional chiefs who were close to Kamehameha. Undermining their rivals, the Council of Chiefs, under the leadership of Kamehameha II, Kuhina Nui Ka'ahumanu, and High Chief Kalanimoku, instituted the 'Ai Noa or abolition of the state religion. This act abolished the traditional chiefly religion under which rivals could claim rank, prestige, and position, The Kamehameha chiefs consolidated political power and brought the entire kingdom under their control.

## **Māhele of 1848 and Land Commission Awards**

In 1848, under the legislation of the Māhele or land division, individuals were given the opportunity to claim land they resided on and/or held in active cultivation. Land Commission Awards (LCA's) were issued from 1846 to 1855 to persons who filed claims to lands from 1846 to 1848 in order to quiet land titles. These lands could then be sold freely on the market. Over 100 Land Commission Awards were recorded for Kalihi. The Land Commission register and testimony documented Native Tenant claims in terms of the types and uses of garden plots, the types of crops grown, irrigation systems, locations of homes, and boundaries. The traditional Hawaiian practice of maintaining residences dispersed within and throughout agricultural fields continued in Kalihi until the mid-19<sup>th</sup> century. The settlement pattern, according to Land Commission Awards, included claims for houses and garden plots on the natural terraces on both side of Kalihi Stream, predominantly in lower Kalihi Valley and on the flat lands seaward of the valley (Folk et. al., 9).

## **Territorial Period**

From 1900 through 1959, Hawai'i was governed as a Territory of the United States. The official U.S. policy was to Americanize the multi-ethnic society of the Hawaiian Islands. Up until World War II, Hawaiians had real control of politics, as they held the plurality of votes and controlled the legislature and the delegation to the U.S. Congress. Hawaiians also held 46 percent of the appointive executive government positions, 55 percent of the clerical and other government jobs, and over half of the judgeships and elective offices. Through 1935, Hawaiians held almost one third of the public service jobs and dominated law enforcement.





## 20th Century Kalihi

Very little documentation specifically describes the Kalihi *ahupua'a* in the 20th Century. Kalihi, like Ka'imukī, was the end of the trolley line which moved along King Street to Fort Shafter. Prior to the construction of the H-1 Freeway, North King Street was the main road from West Honolulu to downtown Honolulu. King Street in Kalihi became host to numerous "Mom and Pop" grocery stores, saimin stands and barber shops. By the 1960's, Kalihi and the surrounding area became urbanized with many residences, concrete buildings, and small businesses.

## Kalihi Today

One of the many vibrant features of present day Kalihi is the weekly Farmer's Market, where vendors sell fresh vegetables, fruits, and other products in the community. There are also art and craft fairs for church and school fundraisers. The Farmer's Market has been highly successful. Several hula studios, Hawaiian foods, and special clothing shops have also contributed the multi-ethnicity of Kalihi.

## Na Ka'ao ame na Mo'olelo (Legends and Stories)

Kalihi is the setting of some of the more significant Hawaiian legends and hula:

- **Papahanaumoku and Wākea in Kalihi**

In 1906, the Hawaiian language newspaper, "*Ka Na'i Aupuni*," recorded the following concerning the legendary ancestors of the Hawaiian people, Wākea (male figure) and Papahanaumoku (female figure) who lived at Kilohana in Kalihi:

*O Wākea, he kanaka maoli no ia; a o kana wahine 'oia o Papa, I kāpaia nohoi o Haumea, a o ko laua wahi i noho ai 'oia ka pali o Kilohana. 'Oia kela wahi kaola pali mawaena o ke awawa o Kalihi-uka. Ame Ko'olau.*

Translation: Wākea is a man and his wife Papa, who is called Haumea, they lived at the cliff of Kilohana. That cliff trail is between the valley of upland Kalihi and the Ko'olau.

The myths also tell of Papa, in her form as Haumea, and center around themes concerning the food supply for the life of the *'ohana* to increase the family stock. At Kalihi, Haumea mates with her children and grandchildren to give birth to the Hawaiian race. The *heiau* of Ka'ie'ie is located in the land of Ka'ie'ie, directly makai and adjacent to the land of Maluawai in which most of the park site is located. One source credits the location of this *heiau* as being near King Street, presumably in the vicinity called Ka'ie'ie in Kalihi Kai.

“A visitor to the uplands of Kalihi Valley on the island of O‘ahu, should he start just *mauka* of Kamehameha School grounds and go on to the center of the valley and look straight up toward the Ko‘olau mountains, will see a peak on the north eastern side of the valley. That is the peak or hill of Kilohana, the home dark with mist, of Wākea and Papa, the ancestral *kupua* [a supernatural being possessing many forms] chiefs of Hawai‘i . . . Of Papa, it is said that she was a woman more than mortal, a *kupua*, and that she bore many names, such as Papa, Haumea, and Kamaha‘ikana . . . Wākea was a man and human and he was the husband of Papa when she was called Haumea. They left the border of Kahiki in the days long past, and became the parents of the Hawaiian people and lived on the hill of Kilohana which stands high up in the valley of Kalihi” (Sterling and Summers 325).

- **Wākea and Kumuhonua**

Pahukikala is a place in Kalihi that is related to a battle between the chiefs Wākea and Kumuhonua:

“Wākea and Haumea were kind to the Ko‘olau people. When Kumuhonua heard that they had returned and were living as chiefs of Paliku, he sent messengers around O‘ahu to raise an army to fight. The Kona men responded but the Ko‘olau men did not. They were in favor of Wākea. When Kumuhonua declared war again, the Ko‘olau men under Kali‘u came up to Nu‘uanu and Kalihi. In the battle, Kumuhonua’s hip was pierced with a spear and killed near a pool. The place is called *Pahukikala* (Pierce-hip) to this day. Wākea became chief of the whole island of O‘ahu” (Sterling and Summers 326).

- **Haupu‘u and Kalaihauola**

Haupu‘u and Kalaihauola are stones, and the place to this day is named Haupu‘u:

“It was said that these two belong to the mysterious little people of Nu‘uanu Valley who wandered to that place because of the war going on in Nu‘uanu when some fled. These two came to the up lands of Kalihi -- where are the others. Strangers who visit the valley should pull leaves, braid them into a wreath and lay the wreath on the stones in order to meet with no such difficulty as mists and cold or the loss of their road on the way to Kilohana and back. Should the mischievous little people see that there are no wreaths on the stones when visitors are on the way to Kilohana, they will break a branch of the flowering mountain apple or the leaf of a tree fern, dip it in water and sprinkle the two stones. Soon after, the summit of Kapo will be covered with mist and a drenching rain will cause the stranger to shiver with cold. Sometimes, the little people will throw away the wreaths and do the same” (Poepoe 65)

- **Kapo-ula-kina‘u and Kamohoali‘i**

Kapo was the daughter born to Haumea or Papa while she was living in Kalihi Valley with Wākea, her husband. Kapo had many names, such as Kapoulakina‘u and Laka:

*“E kapu, he ihiiki a he pae akua no hoi  
“O very sacred tabu of the gods.”*

She was the leader who was never absent from those skillful in the art of the Hawaiian hula. A very sacred *tapu* of the gods rested upon her. Some say she was born from the eyes of Papa. One source indicates that there is a stream said to be the *kinolau* of Kapo, patron of Hula, of high rank and able to assume many shapes at will, as well as a cliff that was the *kinolau* of Kamohoali‘i, elder brother of Pele, and Lord of sharks:

“Kapo-ula-kina‘u, Kamohoali‘i, Pele-honua-mea are the three wonderful ones who came from Wākea and Papa. A very sacred tabu of the gods rest upon her. Birds never sing about her tabu home up Kalihi Valley. There at noon when the sun is shining brightly, she may be seen on the hillside beyond the upland of Kilohana where stands her tabu stone (7 feet long and three feet high) into she entered, shape like a house in front, like a fish’s tail behind.” (Poepoe 65 translated and quoted in Beckwith, 186-187).

Ms. Colleen Aiu, *kumu hula* (dance teacher) who is also the daughter of the late and great *kumu hula*, Ma‘iki Aiu, in an interview recalls a story that was told to her by the late aunty Sarah Kailikea. While Aunty Sarah and Aunty Alice Holokai were traveling through the Wilson Tunnel, Aunty Sarah heard a drum beat. Later, both her and Aunty Alice visited Tutu Kawena and shared her story. Tutu Kawena informed them that “long ago, there was a hula mound and hula gatherings in upper Kalihi Valley. It is the hula maiden of Kalihi Valley, Kapo or Kapo-ula-kina‘u, Laka, and others. She is the daughter of Haumea” (see interview notes, Appendix C).

Likewise, according to McCallister, David Kama, who was the caretaker of the water reserve in Kalihi Valley, tells him that he heard the drums on the Nights of Kāne (*Kāne o ka Pō*) above his house but has never found the *heiau*. However, Thrum (94) mentions three *heiau* about which McCallister has been unable to obtain additional information:

“Ka‘ie‘ie, Kalihi-Uka, on premises of Dr. Huddy, of Ho‘ouluai class, Haumea deity. Parts of foundations only remain. Kaoleo, Kalihi-Kai, no particulars ascertained Haumapo, Kalihi-Kai, no particulars ascertained” (McCallister 88-90).

However, these three *heiau* in the valley were ideal for growing *‘uala* (sweet potato), *uhi* (yams), *wauke* (paper mulberry) and *mai‘a* (bananas).

A map of Kalihi dated 1883 indicates the place names of Popoulu and Kapo within the *waoakua* region (i.e. the uninhabitable mountain region where deities dwell) of the ahupua'a. Sterling and Summers, quoting Poepoe (65), speak of Kapo and Kamohoali'i:

“Look now at the steep cliff to the right, to the hill equal in height with the side of Kapo. This hill is Kamohoali'i. This is own [sic] brother of Kapo. He was born from the top of the head of Haumea [Papa]. He is the beloved brother of Pele, the one who saved the fire alive when she battled with Kamapua'a” (Sterling and Summers, 324).

- **Kupehau**

When one is almost out of the hill valley of Kalihi, on the *mauka* side of Joe Kalama's residence is the spot called “The anus of Kalihi,” “*Ka-elemu-wai-o-Kalihi*.” The exact feature is a solidly planted rock in the middle of the stream in the center of which when the flow is low, one can see a little hole shaped like an anus out of which the water flows and runs down below. The rock about the hole is shaped like the buttocks:

On the *ewa* side of Kalihi Stream, the home site is still to be seen at a place called Kupehau. Here, chiefs of Hawaii resorted because of the delicious poi and tender taro tops. Kamehameha I was one of the chiefs who visited the spot. After his battles on O'ahu, he went to rest at Kupehau. One day, the chief came down to the stream to bathe when the water was low. Kamehameha stuck his finger into the hole and said, “Kahaha! The water of Kalihi comes from an anus!” (McCallister 90).

- **Kane and Kanaloa in Kalihi**

The gods Kāne and Kanaloa are associated with activities related to 'awa drinking. With 'awa as their principal food, they must have water with which to mix it (Beckwith 63). Westervelt, quoted in Beckwith, relates the following story:

Kane and Kanaloa journeyed along the coast of the island until they came to Kalihi. For a long time they had been looking up the hillsides and along the water courses for 'awa. At Kalihi, a number of fine 'awa roots were growing. They pulled up the roots and prepared them for chewing. When the 'awa was ready, Kanaloa looked for fresh water but could not find any. So, he said to Kāne, “our 'awa is good, but there is not water in this place. Where can we find water for this 'awa?”

Kane said, “There is indeed water here.” He had a “large and strong staff.” This he took in his hands and stepped out on the bed of lava which now underlies the soil of the region. He began to strike the earth. Deep went the point of his staff into the rock, smashing and splintering it and breaking open a hole out of which water leaped for them to mix with

their prepared *'awa*. This pool of fresh water has been known since the days of old as Kapukawaiokalihi (the water hole of Kalihi).<sup>5</sup>

### *'Olelo No'eau*

- **“Ka Ua Ko‘i-lipilipi o Kalihi”  
The Adz Rain of Kalihi (*'Olelo No'eau* #1572)**

The *'olelo no'eau* or traditional sayings represented the most dramatic qualities of the Hawaiian people. Typically, there are underlying messages that, when understood, can convey humor, wisdom, and eloquent poetry. These traditional sayings were compiled and translated by Mary Kawena Puku'i and published in *'Olelo No'eau* by the Bishop Museum Press in 1983.<sup>6</sup>

There is a story entitled “Ka Ua Po'olipilipi-o-Kalihi” that describes the rain that sharpens the head. In the days of old, there were two lovers who hid in the forest so they could indulge in their passion without the girl's parents knowing. There, a little patter of rain fell upon them but they did not pay any attention. After a time, they went to see if the rain had cleared, but rain was still falling and they slept again. For some days and nights, the rain fell and the two kept on sleeping. When they awoke, their heads were sharpened and flattened from sleeping so long while the rain fell day and night. Thus, the rain at Kalihi is called “the rain that sharpens the head at Kalihi,” “Ka ua Poolipilipi-o-Kalihi.” (Poepoe quoted in Sterling 326)<sup>7</sup>

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<sup>5</sup>Beckwith, Matha W., *Hawaiian Mythology*, University of Hawaii Press, Honolulu, p. 63.

<sup>6</sup>Puku'i, Mary Kawena, *'Olelo No'ea: Hawaiian Proverbs and Poetical Sayings*, Bishop Museum Press, Honolulu, Proverb #1572.

<sup>7</sup>Ibid.

## CHAPTER 3

### HAWAIIAN BELIEFS, CUSTOMS, AND PRACTICES

#### Spiritual Beliefs and Practices

Protocol, or knowledge of proper behavior, is very important in the Hawaiian culture. Understanding the history, language, permissible uses of a *wahi pana* (sacred place) and need for cultural awareness requires a proper attitude of respect for the culture and people. According to traditional Hawaiian belief, nature and land are considered sacred and alive, animated with living things. The world is a conscious entity and humans communicate with all species in nature and interact in a mutual relationship of rights and responsibilities:

O ka pono ke hana 'ia a iho main a lani.  
Continue to do good until the heavens come down to you.<sup>8</sup>  
(*‘Ōlelo No ‘eau*, #2437)

The concept of reciprocity is an important part of this general belief system. The land or *‘āina* is the provider, and the tenants who are beneficiaries of these resources are obliged to “*mālama*” or take care of the land. On some occasions, users offer chants and “*ho ‘okupu*,” or symbolic offerings to pay respect to the deities.<sup>9</sup> Some of the natural elements that are considered manifestations of deities (*kinolau*) include: *moana* (ocean), *la* (sun), *ua* (rain), *‘au* (clouds), *honua* (land) and *mahina* (moon). Prayer to the deities is used to protect travelers from the elements and help them when they are lost or stranded.

Sacred sites and religious structures included ceremonial and ritual sites of the official religion for chiefs and priests and the sacred places of worship for the common people. Sacred sites include groves, lands, caves of refuges, and other places including *Pōhaku o Kāne*, sacred stones. Sacred structures include: temples, hula platforms, certain houses of the *kauhale*, the family compound. *Pu‘uhonua*, places of refuge, include both certain sacred lands and enclosed structures.

Other individuals maintained a relationship through prayer or direct interactions with their *‘aumakua* or ancestral god. These family gods were long departed ancestors who offered protection and assistance to Hawaiian families. The *‘aumakua* took the form of animals, plants, or even inanimate objects (e.g. stones). The *‘aumakua* that was identified was *mano* (shark), *mo‘o* (lizard), and *pueo* (owl). Some families were expected to learn their *‘aumakua*, their functions, dwellings, and “*kino lau*” or different physical form. An *‘aumakua* has the ability to change from an animal to a corresponding plant form.

There were other spirits described that were devious and intended to do harm to the unwary. There were spirits in the forest that called one’s name and tricked one into following them. If a

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<sup>8</sup> Cayan, Phyllis C., Basic Protocol At Hawaiian Sacred Places, Honolulu, Dec. 1999: 1

<sup>9</sup> Native Hawaiian and Local Cultural Assessment Project: Matsuoka, McGregor, Minerbi 1996: 113-14

person followed them they could get lost. For this reason, Hawaiians were taught never to call each other in the forest. Other spirits or ghosts would roam around people's yards with the intention of causing them harm. By throwing rock salt around their yards, they could ward off these evil spirits.<sup>10</sup>

An interview with Ms. Toni Alatan, grand-daughter of Colonel Charles and Berlinda Marek and former resident of the home on the lower portion of the property site, shared her experiences. Ms. Alatan recalls telling her grandmother about the gardener's mother who would walk up and down the road after dark and she would always feeling someone touching her. When this happened, she would run and scream all the way down the road. Her grandmother would always tell her "Not to be afraid up there (valley), don't be afraid, oh, don't be afraid. You're a *keiki o ka 'āina* (child of the land) and you belong here as long as you're alive, no one will ever harm you." In addition, Ms. Alatan mentions the uncovering of the terrace walls and the *heiau* her grandmother had instructed Ms. Alatan's brother and her to locate. Her grandmother said, "at one time, the Hawaiians built these terraces and some of them were platforms for homes." It was an engineering marvel. While in this area, Ms. Alatan mentions picking guava where there were tall *koa* trees and *pili* grass. It was very windy that day. While she was putting the guava in the box, she turned and stepped into an area where everything stopped moving around her. Feeling creepy and with hairs standing up on the back of her neck, she ran home to tell her grandmother. Later, her grandmother read an article written by Clarisse Taylor of the Star-Bulletin newspaper. The property sits upon a trail of giant walking warriors, not night marchers, but giant people. It is also possible the trail could have been an ancient Hawaiian trail for travelers going from one village to another deep in the upland.

### Oli (Chant) and Hula

- **The 'Ulu or Breadfruit Tree**

As recorded in an article in the newspaper "*Ka Na'i Aupuni*", the personification of Haumea is captured in a *ko'ihonua* (a genealogical chant). Although much of the story takes place in Nu'uaniu, it is important to recognize Haumea in Kalihi as related in this story:

"O ka ulu wahi a keai mo'olelo 'oia kekahi kino o Haumea.  
A I ka wa kahiko o Hawai'i nei, ua lilo ka ulu he akua no  
kekahi po'e, a ua hoomanaia ma ka inoa o Kameha'ikana. A  
penei ke mele Ko'ihonua a ka po'e kahiko no Haumea ame  
kona kino kumu ulu"

"Wahine akua a Wākea  
O Haumea wahine o uka o Kalihi  
Noho i Kalihi, hele i kai  
Komo i ka ulu, he ulu ia  
Lo a ia kino hou ona, he ulu  
O ke kino ulu, o ka pahu ulu o lau ulu ia nei  
O ka lala ulu o Kameha'ikana

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<sup>10</sup> Ibid

O Kameha'ikana ia o ko inoa ulu, a lau ulu  
He lau ke kino 'oia wahine o Haumea"

Translation: The breadfruit spoken of in this story is a *kinolau* (body form) of Haumea. In ancient times in Hawai'i, the 'ulu became a god for some people and was worshipped in the name of Kameha'ikana. Thus follows the genealogical chant of the ancient people:

"The female god of Wakea  
Haumea woman of upland Kalihi  
Lives at Kalihi, go seaward  
Enters the 'ulu tree, an 'ulu  
She has gotten a new body form, an 'ulu  
An 'ulu body, a trunk and leaves she had  
The breadfruit branches of Kameha'ikana  
Your name is Kameha'ikana  
Greenery is the body of this woman Haumea.<sup>11</sup>

### **Ceremonies and Protocol**

There is much basic protocol or special rules at Hawaiian *wahi pana* (sacred places). Based on the concept of 'aloha 'āina, Hawaiian family teachings may vary. There is no offense intended nor any asserted that protocols described here are the only way of doing things but are only presented for clarity on proper behavior at Hawaiian sacred places.

Basic protocol or knowledge of proper behavior is a very important part of Hawaiian culture. Included in this knowledge is an understanding of the history and usage of a sacred place, and such knowledge requires a proper attitude of respect for the people and their culture. Unfortunately, there are many more examples of disrespect for and lack of knowledge of proper Native Hawaiian protocol than of its correct observance. Every year, large numbers of visitors come to various sites throughout Hawai'i, especially to the National Parks on the Big Island, various sacred pools, burial sites, and *heiau* (altars). Unknowing visitors often leave offerings of a *ti* leaf wrapped around a stone. This is culturally offensive to many Native Hawaiians. Such "offerings" have no cultural meaning and are inappropriately left at sacred sites.

Guidelines for culturally appropriate behavior when visiting *wahi pana* and other special places:

1. prepare and research the places, the peoples, and its culture
2. dress accordingly when touring these sacred places; avoid loud and/or aggressive behavior and keep romantic or sexual behavior out of public view
3. don't be obtrusive, disruptive or damage the environment
4. be careful not to step on, to sit up or stand on anything that you may not normally do (some sacred structures may appear to be "just a pile of stones" to the unknowing)

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<sup>11</sup> *Ka Na'i Aupuni Newspaper*



5. be respectful at all times and do not take photographs if ceremonies are being conducted

One basic concept that permeates Hawaiian culture is “*aloha ‘āina*” or love of the land. As explained in the Kaho‘olawe Study on the protocol of aloha ‘āina for that island, the late Auntie Edith Kanakaole observed, “Our kūpuna leave us the same thought saying:

“E mālama pono I ka ‘āina; nana mai ke ola.”

“Take good care of the land -- it grants you life.” (Cayan 2)

Some of the basic rules shared by this researcher’s *‘ohana* include:

1. Before entering a sacred place, ask permission of the spirits there silently by telling them who you are, why you are here, and giving thanks for the privilege of entering that sacred place.
2. Know and understand that you are in the presence of many gods. Therefore, all things require respect for their *mana* (spiritual life energy).
3. Offer prayers in silence that acknowledge the spirituality of the place, that which is unseen, and the peoples of that place. Include a silent prayer of thanks before and after entering, and apologize for any shortcomings you may have brought to the sacred place.
4. Silence is the best behavior.
5. *Ho‘okupu* (offerings) are not required. Silent prayers or chants are offerings in themselves. Most *ho‘okupu* are offered during the conduction of more formalized rituals or ceremonies.
6. If you are unsure, don’t do it. If you feel you have stepped on or sat on or desecrated an area, say you’re sorry and apologize to the gods.

In a chapter called “WorkingWith Nature” in the book *Change We Must* by Nana Veary, the author describes how she planted sweet potatoes in her grandparents’ village. Each child was required to recite this prayer to the sun while the elders chanted: “*Kanu nei au, aia ia ‘oe ka ulu.*” (I plant and the growth is yours). When the sun is ascending, everything is growing and energy is growing toward its peak. The children were very careful about not letting their shadow fall on the new plants so as to stunt their growth. Nana was also instructed to say a prayer, ask for permission, and give thanks – that was the Hawaiian protocol that extended to every aspect of life in nature (Veary 39-40).

Protocols were also described in an interview conducted with Mrs. Marguerite Kealanahale, wife of the late Dr. (Kahu) Edward Kealanahale. Raised by his grandparents, he was taught Christian principles by the Reverend Samuel and Mary Kauwe Kealanahale in Kawaihae on the Big Island of Hawai‘i. As a child, he was taught to speak Hawaiian. English was his second language. He also trained as a *kahuna nui* (high priest) by Mahealani Lono, who was a messenger for the King and last known *kahuna* trainer for Waipi‘o Valley.

Mrs. Kealanahale recalls that such protocols were conducted by her husband as he visited various sacred sites. She remembers when her husband visited Kalihi Valley. She had dropped

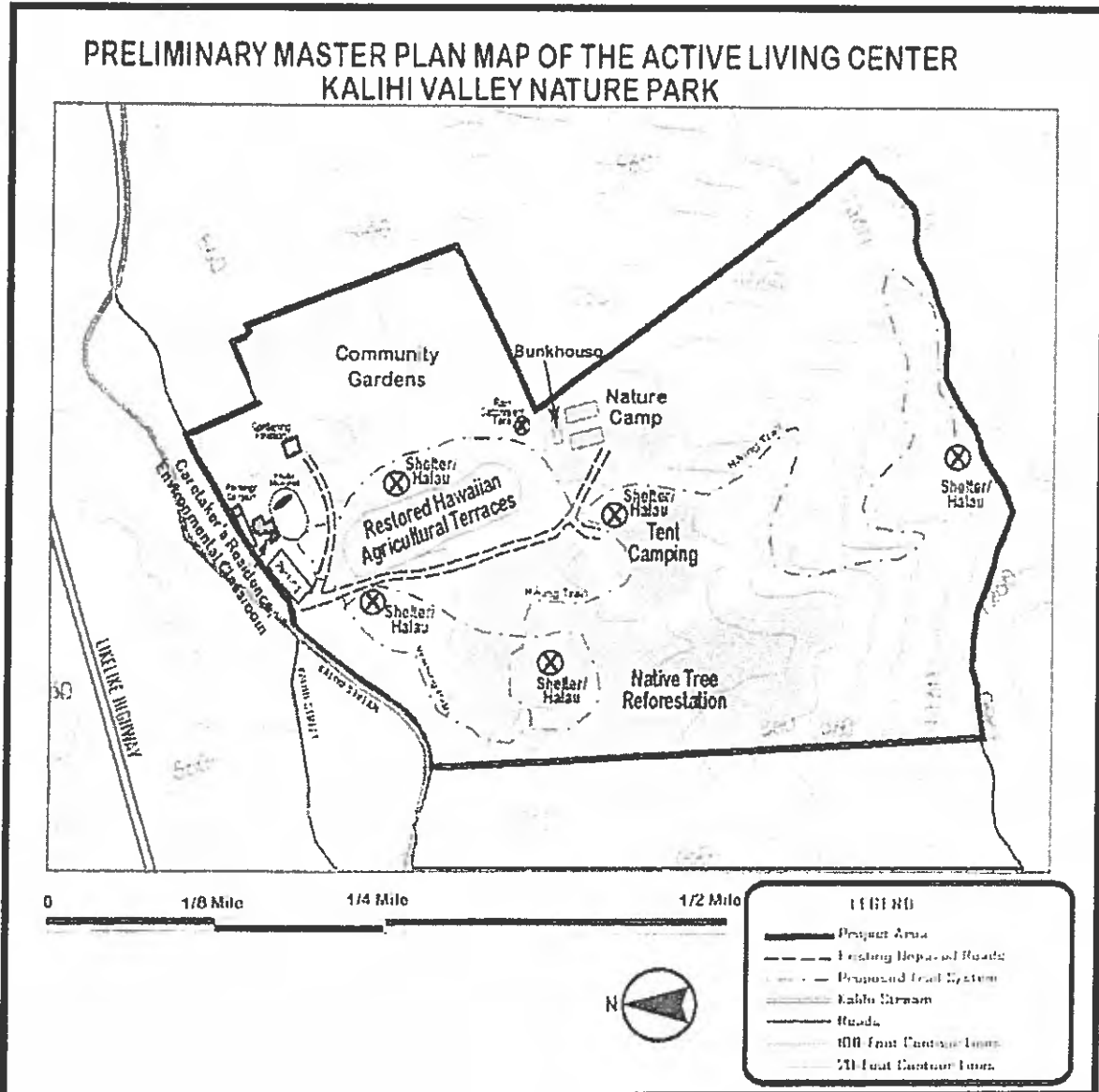
him off at the end of Kalihi Street with water and Hawaiian salt. He would be in prayers for three nights and days. It was also very important for him to ask for permission from the *kūpuna* (ancestor), cleanse himself *ho'oponopono* (asking for forgiveness) and give thanks before entering and leaving a sacred site. When she returned to pick him up, he mentioned that this valley is filled with women spirits and it belonged to the hula maidens of the valley.

CHAPTER 4

AREAS OF CONCERN FOR KALIHI VALLEY

Map of Kalihi Valley

Figure 5. Location Map, Kalihi Nature Park Master Plan



## Trails and Access

Under the state and federal laws, any development or change in the uses of natural resources must take into account the potential impact upon the free exercise of Native Hawaiian rights.

Trails are very important to cultural perpetuation as they allow Native Hawaiian practitioners to access resources in the park. Maintaining and gaining access to traditional and cultural areas is a primary issue. Some traditional access routes may have been changed by overgrowth of vegetation and changes in ownership and control of lands over the years. Lack of access may have been caused by installation of fences in order to deny passage to unauthorized persons, or by absence of a bridge to connect the main road to the site.

## Forest Gathering

Hawai'i's natural conditions regarding soil, climate, competition with plants and animals, and isolation caused by presence of mountain ranges or large bodies of water served to produce a highly unique environmental situation for the evolution of plant life (Degener, 1975). Consequently, Hawaiian flora consists of plants that have been so changed by local conditions from the ancestral structure that they are now recognized as separate species, being endemic or peculiar to these islands.

Hawaiians noticed that the rains were attracted to forest trees, therefore they selectively cut the trees, giving thanks and taking only what was absolutely required:

Hahai no ka ua i ka uluā`au  
*Rains always follow the forest*  
(`Ōlelo No`eau, #405)

The gathering of forest plants serves many important cultural purposes. Plants are consumed for food and medicine, used as tools and building materials, art, and adornments. Those who engage in *la`au lapa`au* (herbal medicine) depend upon a healthy forest where they can gather native herbs and plants. In Kalihi Valley, there are Native Hawaiian plants (endemic, indigenous, and introduced by Polynesians) that could serve traditional uses.

Some examples include:

1. Alahē`e (*Psydrax odorata*): indigenous tree or shrub used in place of kauila; hardwood used in making an adz to cut the soft *wili-wili* wood; used for tools to till the soil, *o`o* digging sticks; it also furnished the small poles for keeping open the mouth of the bag net; the leaves produce a black dye.
2. Hāpu`u pulu (*Cibotim chamissoi*): a tree fern; its tender shoots were eaten as food in case of famine.
3. `Ie`ie (*Freycinetia arborea*): pliable aerial root, represented demigoddess Lauka`ie`ie; it was braided as cordage; used for making fine baskets and fish traps.

4. Koa (*Akacia koa*): the largest trees, were used for canoes, surf-boards, hoe or paddles, spears, and calabashes.
5. Lama (*Diospyros sandwicensis*): endemic ebony, its wood was used in house construction and for erecting enclosures for certain idols; used on the altar for Laka, the goddess of Hula. Fruits were eaten.
6. Māmaki (*Pipturus*): small native tree, plant to make top quality tapa; used for cordage; bark used as poultice for bruises, cuts, sprains, and fractures.
7. ‘Ohi‘a (*Metrosideros spp*): same as *lehua*, a large tree where birds were caught. It grows on the lower mountain slope; it represented the god Kuka‘ohi‘a Laka. Its wood was used for idol making, posts, rafters for houses, enclosures of temples, fuel, ‘iako (sticks to couple double canoe), etc.
8. Pāpala Kēpau (*Pisonia species*): the exudates around seeds was used to catch birds.
9. Uluhe (*Dicranopteris*): fern used as tea and as a laxative.

Other plants in the valley that were introduced by Polynesians include:

1. Kamani (*Calophyllum inophyllum*): the stem was used for wood, the fruit for oil, the flower and the sap to tint tapa.
2. Niu (coconut) (*Cocos nucifer*): the coco palm tree; *kinolau* (body form) of the god Kū; its fruits are eaten; offered in religious ceremonies; the juice is a drink; the husk is used for rope, cordage aha, the stem is used for making drums; the leaves to make fans, *pa‘ahi launiu*; the *puaaniu*, *niu* flower, *laua‘e* leaves, or *kūpaoa* were used to impregnate the *pā‘ū* dyes.
3. Hau (*Hibiscus tileaceus*): a lowland tree; it is a light wood for many uses, including windbreak, firesticks and handles for axes; it was used to decorate the altar of Laka; its bark was used to make rope and cordage; cordage for lei; its sap and flowers for medicine as an internal lubricant, mild laxative for children and for women to lubricate the birth canal; stems for cordage and lashing *ama* (canoe outriggers).

In Hawai‘i, the physical environment is constantly being threatened by urbanization. Many *wahi pana* (sacred sites) and structures as well as subsistence resources in the physical environment have been affected by development. A native plant restoration program that will provide Hawaiian gardens with medicinal and endangered plants should be incorporated into the master plan for the park. Such plants would serve as a valuable educational and cultural resource for cultural practitioners and visitors to the park.

### Hula

One of the proposed components of the master plan for Kalihi Valley Nature Park is a hula mound on the site. During the research and interview process, several *kumu hula* (dance instructor) expressed interest in using the Kalihi Valley Nature Park site for traditional

ceremonies, chants, hula performances, plant gathering, and offering *ho'okupu* (gift). Such activities, led by *kumu hula* (dance instructor) and Native Hawaiian cultural practitioners, would serve to pay homage and respect to the hula goddesses of Kalihi Valley: *Haumea*, *Kapoulakina'u*, and *Laka*. Through the perpetuation of Native Hawaiian rituals and ceremonies conducted with instructions handed down by oral tradition from generation to generation, a renewed spiritual connection could inspire new compositions and performances and of chants and hula.

By gaining access to cultural areas and gathering materials like *'Ie'ie*, *Uluhe* ferns and *Kuka'ohi'a Laka* from the valley, these plants could once again be used for adornments, arts, crafts, and medicines. Other plants could be useful as building materials and food, and could be used for projects and *pa'ina* (celebrations) on the site.

### **Hunting**

Hunters are primarily after pigs. Hunting occurs year round and in times past was the primary means of obtaining meat for families. Hunting methods vary from guns to knives and dogs. Many pig hunters use a method using trained dogs that chase and pin down a pig. The dogs are trained to catch the pig and only attack the head and rear of the animal so as not to damage the meat. The hunter follows the dogs and stabs the immobilized pig in the heart. This method is an efficient way to hunt, although it takes a toll on the dogs, often resulting in severe injury or death.

Animals are cleaned and dressed in the area where they are killed. In most cases, the meat is packed and loaded onto the hunters back who have to hike a long distance to a four-wheel drive vehicle. The meat is prepared in various ways, often by smoking, or in a more traditional method, steam-roasting in the *imu* or underground oven.

Along with master plan proposed activities such as incorporating Native Hawaiian gardens with medicinal and endangered specie plants, a pig control program is very appropriate. Hunters should be called upon when the caretaker sees aggressive activities by pigs such as plants being uprooted, other physical signs, or pig sightings. Also, pigs could be hunted on a regular basis when the park is not being used by other groups or educational classes.

### **Cultivation**

According to Handy, "Hawaiian Planter: Vol. I", there were extensive terraces that covered all the flatland in lower Kalihi Valley for approximately 1.25 miles on both sides of the stream. Above this area, the valley was considered too narrow for terraces for a mile or more; but in upper Kalihi, there were numerous small areas that were developed into terraces. The Kalihi Valley Nature Park Master Plan calls for developing community and Native Hawaiian gardens with restoration of medicinal and endangered species that could be used for *la'au lapa'au* (medicine). One of the goals for cultural practitioners is to establish an on site herbal medicine class to educate young Hawaiians on the uses of plants that used to grow in the project area. A seedling project could also be proposed to plant and propagate endemic trees and vegetation in order to restore the watershed.

## CHAPTER 5

### CONCLUSION

#### Evaluation of Cultural Impacts and Recommendations for Mitigation

The Kalihi Valley *ahupua'a* is located in the Kona district on the island of O'ahu. Any changes to the project area could impact on or in some way interfere with or prevent the freedom to access and exercise beliefs, traditions, customs, or practices in a Native Hawaiian way.

Today, many Native Hawaiian communities persevere in their struggles against development of ancestral and national lands on all islands. Any proposed changes to the project area could affect the environment, safety, health, and culture in a way that could conceivably have a negative impact on Hawaiian lifestyles and livelihoods. Culturally sensitive and environmentally restorative activities and practices would serve to mitigate any negative impacts and provide access and opportunities for Native Hawaiians to practice, perpetuate and educate others about their culture.

When proposing or conducting activities in the project area, the following concerns for Native Hawaiians' ability to practice their customs, beliefs and traditions should be considered:

1. Define areas whereby Native Hawaiians and the greater community could be restored to a healthier lifestyle by experiencing the restoration of the *'ahupua'a* in the project area, thereby restoring and healing their spiritual, physical, and mental well being.
2. Define areas of naturally occurring endangered native flora and fauna, including plant materials used for medicinal purposes and decoration in traditional cultural activities whereby creating an environmental outdoor classroom.
3. Define areas of archeological and historic significance and protect them from unrestricted access while educating visitors on observance of proper protocols and behavior when visiting such areas.

Recommendations for recreational resources:

1. Limit/control access
2. Conduct guided tours
3. Limit group size (ie. max. 8)
4. Minimize impacts of activities; schedule/monitor
5. Provide signage and handouts: "Cultural Do's and Don'ts"
6. Prohibit smoking or alcoholic beverage consumption; control or prevent littering
7. Conduct environmental education program that includes concepts of the conservation ethic intrinsic to Native Hawaiian cultural practices

Recommendations for culturally and historically significant sites:

1. Limit access – some areas declared *kapu* (restricted), others *noa* (free of restrictions)
2. Use of cultural interpreter on site during hours of operation
3. Cultural orientation and interpretation
4. Wellness program that is Native Hawaiian culturally based

Recommendations for custom and practice related to the project area:

1. Minimize curtailment of ability of cultural practitioners to perform certain religious activities caused by lack of access to, or decreased availability of necessary resources associated with religious practices.
2. Enhance ability to perpetuate knowledge of religious beliefs and customs by facilitating freedom, space, and ability to actually practice them.
3. Ensure adequate buffer zones to protect perpetuation of contemporary cultural and religious practices.

It is important to take into account the interdependence of culture and the environment for Native Hawaiians and mitigate any cumulative effects of development of the nature park on the ability of Native Hawaiians to perpetuate their traditional customs and practices. If too many of the site's features are affected or changed, the "cultural fabric" could be weakened. On the other hand, the site has been previously used as a dumping ground and by squatters, so increased stewardship and oversight of the area could enhance culturally appropriate use of the site.

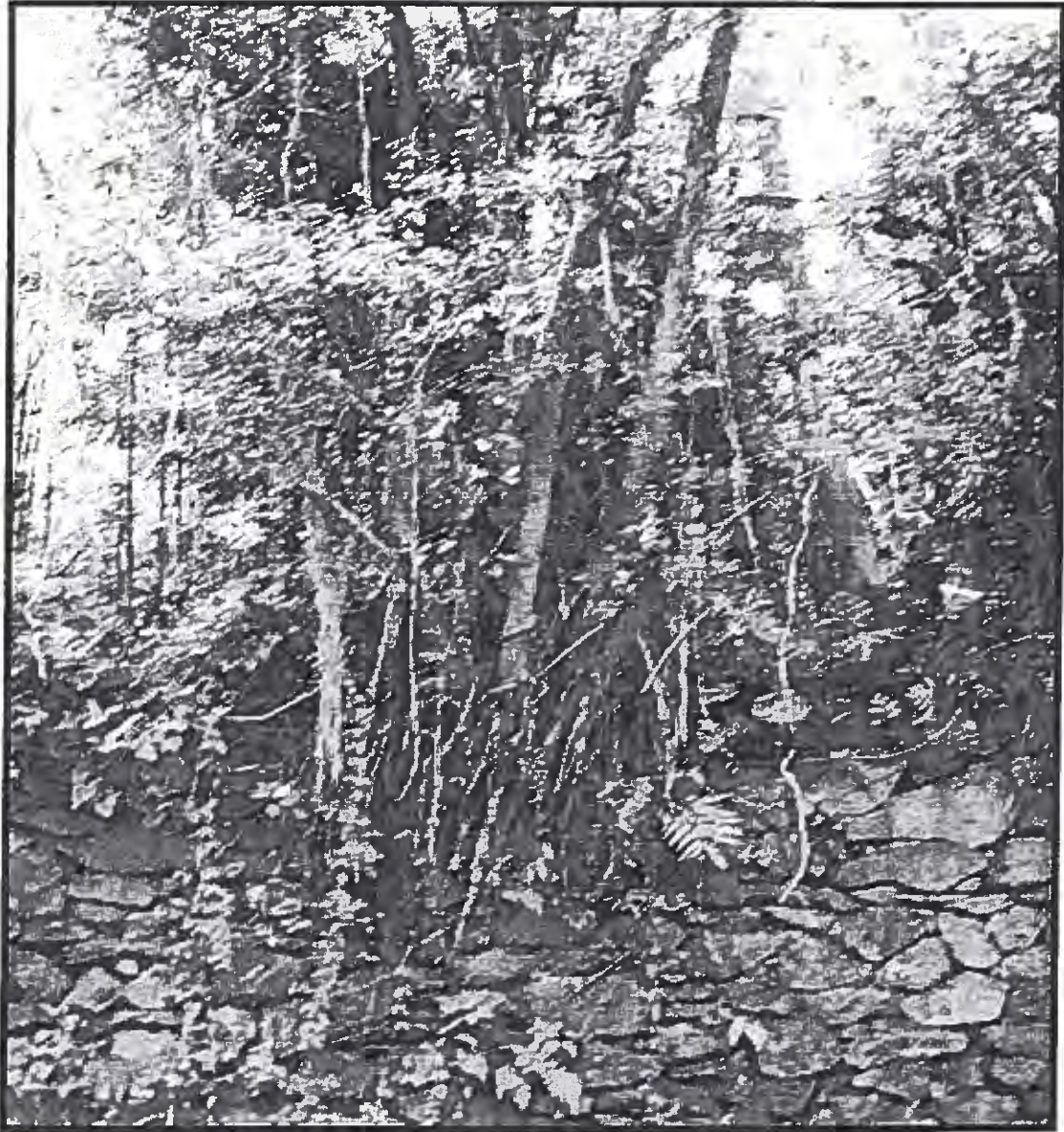
Gradually, Hawaii's unique habitats have been polluted, resources lost and indigenous customs and practices distorted. Regarding the unique Kalihi Valley Nature Park project area that exists within the limited ecosystem on this island, we cannot afford to miss an opportunity to preserve our heritage together with our *'ohana* community.



APPENDIX A  
SITE PHOTOGRAPHS



**Fig. A-1 Resources for Gathering in the Nature Park**



**Fig. A-2 Terraced Stone Wall**



**Fig. A-3 Kalihi Stream**



**Fig. A-4 Pohaku on the Site**

## APPENDIX B

### Kalihi Valley Cultural and Natural Resource Study Individual Interview Form

1. Describe your personal and family connection with Kalihi Valley.
2. Please tell us the length of time and frequency of this connection with Kalihi Valley.
3. Please share any legends, traditions, and chants associated with the area including 'aumakua and deities.
4. Please describe Hawaiian cultural and subsistence activities that can be conducted in the area.
5. If known, could you please share any information about the meaning of the Hawaiian place names and historical events or significant persons associated with the area.
6. Do you use the site for any Hawaiian traditional gatherings of fauna, flora or religious purposes?
7. Would you like to use this site?
8. How would you like to see Hawaiian cultural and natural resources be protected and managed?

## APPENDIX C

Interview with Colleen Aiu  
April 28, 2005  
Hula Halau  
Interview conducted by Francine Palama

Interview notes:

Aloha Colleen,

Mahalo for your mana`o on Aunty Sarah's spiritual journey through the Wilson Tunnel. Per our phone conversation with you today as this story was told to me.

"One day aunty Sarah Kailikea (friend of Mary Kawena Pukui) and Alice Holokai (George Holokai's mother) were riding towards the Wilson Tunnel to visit Aunty Ho`oulu Davis. On this ride, Aunty Alice noticed that aunty Sarah was very quiet and still. When they got on the other side of the tunnel (Kaneohe), aunty Alice asked Aunty Sarah, "Did you see something?" Aunty Sarah was startled. Aunty Alice asked again, "did you see something?" By then Aunty Alice said, "We have to go see Kawena right away." Aunty lived on Birch Street. There Aunty Sarah shared her story.

While we approached the Wilson Tunnel, I saw a number of idols or people with their pahu drums standing very quiet. They did not move or respond at all. There, as I entered the tunnel, I heard the drums beating but about half way through the tunnel, it stopped and I was shocked (amazed). Tutu Kawena said to Aunty Sarah, "long time ago, there was a hula mound and hula gathering was done in upper Kalihi."

Later, Aunty Sarah became a mentor to Colleen. Last February 2004, Aunty Sarah passed away at 92 years old. She shared this drum beat with Colleen. During Hurricane Iniki (1992), Colleen did a tribute and debut the "drum beat" that was given to her by Aunty Sarah of what she heard many years ago.

As a tribute to the hula mound and hula ancestors of the valley, Colleen has asked that she would like to dedicate this "drum beat" and perform at the hula mound as a ho`opkupu back to the valley.

I know and feel this story was shared because the kupuna want this wahi pana to be pono. I feel so privileged and honored this mo`olelo was shared with me by Colleen. I know that I must also travel to Kauai and meet Hauoli and Chipper Wickman of Lima Hula Gardens and keepers of Papalima Ho`a, Kauai; Kahanu Gardens and National Park Lauwae, Poipu.

Mahalo,  
Francine Palama

## APPENDIX D

Interview with Marguerite Kealanahela, resident of Honolulu  
May 20, 2005  
Mililani Residence  
Interview conducted by Francine Palama

Her husband, Dr. (Kahu) Edward Iopa Kealanahela would frequent the site to “*kūkā kūkā* (consult) with the *kupuna* as he was taught in the days of old by Mahelani Lono, the last of the *kahuna* trainer from Waipio Valley on the Big Island of Hawai‘i. Kahu, as he was often called, spoke fluent Hawaiian and Japanese. English was his second language.

Kahu was raised by his grandparents at Kawaihae on the Big Island of Hawai‘i who was also a Christian minister: Rev. Samuel and Mary Kauwe Kealanahela. They taught the ways of Christianity. Kahu was an ordained minister at Kea‘liokama‘u Church in Haleiwa, O‘ahu.

As a Kahu, he would assist or consult with people during the time of spiritual needs. He would often visit sacred places or *na wahi pana*. He also conducted protocol at these sites.

She recalls such protocols were conducted by her husband as he visited these sites. Mrs. Kealanahela remembers when her husband visited Kalihi Valley. She had dropped him off at the end of Kalihi Street with water and Hawaiian rock salt. He would be in prayers for three nights and days. It was also very important for him to ask for permission from the *kupuna* to enter site, cleanse himself (asking for forgiveness or *ho‘oponopono*) and giving thanks before entering and leaving a sacred site. When I returned to pick him up, he mentioned that this valley is filled with women spirits and it belonged to the hula maidens of the valley. He also saw the *pōhaku* or stone that was special to the hula goddess.

## APPENDIX E

Interview with Toni Alatan, resident in Kalihi Vallley (KKV)

06-24-05: Friday

Pupukea Residence

Interview conducted by Francine Palama

TA My grandmother use to tell me that up there “don’t be afraid, oh, don’t be afraid.” One time, we had a yard guy that was related to my husband and he told me a story that his mother was walking up and down and it was dark. And she always felt somebody touching her and she would scream all the way down the road. And I told my grandmother this story. She said, “Don’t be afraid, you’re *keiki o ka ‘āina*-the child of the land and you belong here as long as you’re alive, no one will ever harm you.” And it’s true. I also found out that there are some areas where right across the street at the end of the road there is a pond there. And there’s a spot over looking the pond where she was telling me it was *Hi’iaka’s* pond. It was her pond and you could go there and pray. It was a stopping place. So, I use to go there all the time and sit there and I could feel.

F The presence.

TA Yes.

F You were being taken care of and being watched at the same time.

TA I’ve never been afraid of being up there, no matter what.

F Let me share some questions of the interview with you. 1) Would you describe your personal and family connection with Kalihi Valley?

TA **My grandmother was *hanai* from a pile of kids. She was born in 1898.**

F And what was grandma’s name?

TA **Berlinda Kuulei Murray and then became Marick.** She went to see a lady name **Annie Ah Kong** (Chinese lady) and Annie Ah Kong had 2 illegitimate daughters: one was a Bertlemann and the other one was a Dowsett. And of course because they were illegitimate they were not recognized. But Annie got around. Annie was quite an entrepreneur. She bought a lot of property and according to my grandmother, she bought that property. At one time, it was 84 acres at a public auction. It was owned by a family who had debt really bad debt but I understood they were Portuguese. Ah, Lopez or something like that and the sons were gambling and there was a house up there, an original house.

F Before this house?



TA Before this house, so she bought it at a public auction for, I don't know how much but it wasn't very much. By then my grandmother was brought by her mother and her mother was Harriet (very long Hawaiian name)

F Ha, ha, ha.

TA She was name by King Kalakaua because my grandmother's mother's father was his nephew. So, King Kalakaua named all my grandmother's mother and all her siblings. So, anyway they couldn't take care of her so they came to Annie and they said, basically, "Would you like to stay here?" There was never such a thing as formal, you know, if you like stay here, stay here.

FP Yeah.

TA And so they raised her and that's how she got the property. She inherited it. They gave it to her. She graduated from Punahou and she met my grandfather on a bind date at the Alexander Young Hotel...something like that and all the aunties liked him. He managed the property and he surveyed that property that's why its land trusts. He was the one that went out to survey the property. He took care of all the stuff for Koo Koo Ann.

F Yeah.

TA That's what we called Annie, Koo Koo Annie. In fact, one time, they owned a whore house (ha, ha, ha) where the Kukui project is.

F Yep. Beretania.

TA The low rise one

F Yep, off Beretania, Aala and Liliha

TA Yeah, they rented the top floor to this Madame during the war because it was legal.

And my grandfather use to have to go and pick up the rent. **He hated** it. He said, **the smell of cheap perfume,**" and he never like and even when he was in the military. He never allowed his secretary to wear cheap perfume and red in public. Isn't that funny?

F Ha, ha, ha.

TA Isn't that weird so that's how they got it and then they built a home there.

F Oh.

- TA In fact the home was up here for quite a while and my grandfather's brother and his wife spent their honeymoon there under dark curtains. And that's where they were when Pearl Harbor was attacked.
- F So how old is that house up there? Is that the 2<sup>nd</sup> home on the original site or was ah?
- TA I think the original. The State that was there, they tore it down. However, I'm not sure but I remember them talking. See, there's a second cottage up there. At one time, it was under the Banyan tree.
- F Yes.
- TA Well, the tree had a limb that broke and scared the tenants so my grandfather picked it up and moved it further up toward where the pump house is. And I think **some of the original lumber is in there—real 2x4**. But 'um, the other house, they probably started it in the '30's because **there were no trees. All open.**
- F All open?
- TA Yep, all open. Roosevelt had his New Deal and there were rose apples everywhere. So, they built it and they were going to retire and live there. And **he retired in 1957** and he was painting all along but you know it became a serious thing for him after that.
- F He was in the military, what branch?
- TA He was a **retired full Colonel in the Army**. He was a civil engineer and in the Army Corps of Engineers. He originally started out in the regular Army from the very bottom. He was stationed at the Mexican Border and transferred to Hawaii where he got out the regular army and went into the reserve, to Officer's candidate school and became an officer.
- F. Wow. I didn't realize it went that far back!
- TA Oh yeah.
- F The archeologists were up there this past week and they were marking everything up there. Were you aware of some of the rock walls up there at that time?
- TA Yep, 'um my thing when we were under the age of 12, my grandmother would talk about **a heiau** at that time. She remembered seeing it so she told us. Of course, we were kids. So we went up. There use to be 2 tanks at the top of the property just a little ways beyond those tanks, there was a property marker because originally at one time, they owned al the way to the tope of the mountain.
- F **Kamanaiki Ridge**, all the way to the top.

- TA All the way to the top and of course, the State decided they would declare eminent domain and make it a watershed. I think it was in the late '40's or early '50's. Well, she told me to go to this marker and my brother and I were to follow it down and keep following it and eventually run into it. Well, we ran into the terraces and that's what we thought it was at first. So we uncovered the whole thing. It was just covered with California grass. So my brother and I, we just uncovered the whole thing and we saw all these terraces and said, "I don't think this is it?" And I was talking to my grandmother and she said, "at one time, the Hawaiians built these terraces and I'm sure that some of them were platforms for homes. And then later, the Chinese came and they expanded on it. It has to be all man-made because there is an area where the water drains. Because it's extremely, you know, you have to have an engineer degree to figure it out. It's very unusual but I'm wondering if the Chinese did that?"
- F Yeah, as we went further up the location following this wall, on the top, I guess where the water came out and where the rain fall comes out, I mean there's just enough water that, there's this whole dike system that happens that they would allow for the village or whatever the settlement was there at that time.
- TA And could probably channel the water.
- F You have answered all my questions in one interview but I wanted to ask one more question. Did you hear or see anything?
- TA Yeah. There is a spot when you go in the back and one time my grandfather decided to cut the mountain and so he mined some soil and then typical engineer and there use to be a thing like a grate. It's slanted and it sat against the hill and the trucks would go underneath and they dump the soil and it filters all the rocks. So, I use to go pick *waiwe* (guava) for my grandmother to make guava jam, guava jelly and the best *waiwe* was on top of that mountain where the *koa* trees were.
- F Yes.
- TA So, I would have to climb around where the big cat was and then climb up in the back and I was up there. There's a lot of *pili grass* and it was very, very windy and so, I was up there picking and putting it in a box and all of a sudden I stepped in an area and everything stopped moving around me. About maybe, a radius of 6 to 8 feet and I really got the creeps and all the hairs stood up on the back of my neck and it was like being in a cold spot. And I looked all around and everything else was moving but not where I was. So, I high tailed I home and told my grandmother about it and later she said, "She ran across an article in the Star Bulletin, she said, "you remember that time you were up in the mountains and you told me this and this and this" and I'm like, my eyes popped right out of my head. I said yeah. She said, "You know what, there's a lady name Cloris, Clarisse Taylor and she use to write about legends and Old Hawaii. You might want to tap into their archives and 'um she wrote a story that apparently the property sits upon a trail of these giant walking warriors. She didn't say they were night marchers, the were just giant people and the trail came down, well, I figured I stepped in the trail

some place, you know, so, but I could always tell when I lived in those houses up there. I use to run. I use to be a jogger and I use to run up to the old pump house up the old road and I could tell if somebody was watching because I could smell people before I even saw them because guys use to go up there looking for bottles. The guys from the bottling company and I could smell people before and get tuned to every aroma there.

But there is another place on the property right where the pump house is which I'm sure it has fallen down already. We use to have well water because we were too high to get pump water from the Board of Water Supply which was ironic. The pump house is there and the tenants there. There's a creepy feeling up there. Ever since I was a little kid I use to be kind of afraid because it's a natural spring and my grandmother told me "that when they were little kids, you know, they hadn't dug the well yet, and you can see the water bubbling up and they to go over there and play, a little spring.

But I use to go up there with my grandfather because we'd go and pump water and there's an area you get to this round well, it's like a big caldrion made up of some kind of concrete. You hang a left and follow this old, there's a little path, and it's all bamboo.

F Yes.

TA You follow it and it's a little like a stone wall and there's a stake place just beyond it. You step on it and you know something really bad happened. So, I took a friend of mine up there who was very sensitive and he told me he could really feel it long before we even got up there. And I told him, you have to tell me what happened there, I know something really bad happened there and he went there and sat around there and said, "You're right. Someone died here and they died violently. But it was very long time ago and he said for some strange reason, it just stayed here." So, I try to avoid that like a plague.

F Uh hum.

TA But we actually had a guy who use to bootleg up there. They rented it to some guy who was making '*okolehao*. He dug a cave and was making '*okolehao*. My grandmother almost had a heart attack because he couldn't make '*okolehao*. I think he was living on the other side of the gate. There's a driveway up there and there use to be a shed up there and I think that's where he was living.

Uh hum. It's sure interesting because there are a lot of little things that happen up there. But if you walked it, you can feel it.

F I always asked permission before I go up there.

TA You always had a feeling that there were eyes on you.

F Yeah.

- TA Being watched.
- F All the time.
- TA There's tones of spiritual trails in the bamboo and everything.
- F They have up there but there will be a meeting with HCC carpentry students to get up a schedule for them to do the roof and also there's a nature park in a sense Botanical gardens about 20 acres. The Boy Scouts are going help with a camp site. A hula mound will also be put on the site.
- TA It's very interesting because there use to be trails that use to go to the back of the valley but unfortunately, I followed the stream as far back as I can without getting killed.
- F Right.
- TA And I know when **they built Likelike, they diverted the stream.**
- F Uh hum.
- TA And I actually been in a place that was on the side she (grandmother) told me that these had been old trails that you could go into the back and at the head of these trails were like, in the old days.
- F Yeah.
- TA They had little stones like fish gods.
- F Yeah, yeah, the ahu (altar).
- TA The ahu, they would have these at the start of the trails and she would tell me that if you going hike on the trails go put lowers.
- F Yes
- TA Yep and I would go put flowers every time we go in the back so we wouldn't get rained on.
- F Yeah, I get chicken skin too.
- TA Yeah but 'um, the place is 'um but even the houses we own below is really strong especially the top part.
- F The whole area is so spiritual and one lady called me back. Her name was Akamine, I want to say Leinaala Akamine but she was from Kaneohe and she said, "When you get onto the property, you have to go by yourself."

TA Yep

F Because that place has strong *mana* up in that whole area and it has not been tapped. It's like opening Pandora's Box sort of speak. There are guardians and keepers up there that watch the valley. And um, I wrote it down but her and I had this conversation. I don't know much about the valley except that I know that any time you go in that area you clean yourself before you walk in and ask for permission.

TA I use to get, I use to see things when I was up there. My grandmother use to have fits when I told her that when they added on to the house, the bottom room where has the bathroom, we use to call it the River Room that was the master bedroom. It had French doors and my bedroom was up and I could see into their room through the French doors and one night I got up to use the restroom. I was in, high school already.

But every time I lived there, I had these things, you know. And I got up and I walked towards the window and I mean I came out and was dark and I looked out and my grandmother was standing, looking out the window. She had a muumuu on and everything. I could see her perfectly clear. I went to sleep and I got up the next day and I said, "Eh, I saw you standing by the window." She said, No, I wasn't." She just had fits and I said, "Wait a minute, I saw you standing there." And I know she was having a kitten because I know what I saw."

F Yep, yep. In fact they called this, the artist room or the artist house.

TA There's a big place in the back that was his studio.

F Oh, there was a loft, yea that was put in.

TA He built this room with those big windows facing the mountains because he wanted the morning light and that's why he did that. I'll show you some of his art work afterwards where the house is. At the end of the road, there was a man who lived here named Dr. Kauffman (?), and Emeritus from UH. I use to check on him because

F He was deteriorating.

TA Yeah. A neuro-disorder and he died up there. Ad he fell and it was really weird. I don't know what the problem is about living in Kalihi because I have the same problem up here (Pupukea) too, because this is a *kahuna* area.

F Especially, this is like a vortex.

TA In fact, I'm sitting on a trail. I had to put windows and doors in so I could let them out. They use to come in and out.

F Yep.

TA They don't bother us anymore. I'm use to them. So, now they all end up down the heiau (place of worship). I found his body and I wasn't sure what happened. After the cops came and took him away and the news came. I wanted to go to sleep and really wanted to know what happened. Because he fell down by the stream and when we found him, he was in the stream and clutching. He was incapacitated for a long time but I would never have heard him because the stream would have drowned out the sound.

Like I said, I don't know about that place. I mean, like you say, it's up here too. Ah, I close my eyes and I relax and I saw exactly what happened. I saw him walking, I saw him. He went down to feed his geese and I saw where he dropped the can and he was disoriented and I saw him like I was him tumbling and he died instantly. He died of a massive heart attack.

F There's this stream right over here and then there's the bridge and this house over here. There's this old lady that lives over there.

TA Ah, that's Mrs. Barnett, she's my hanai mom.

F Ok. Where was his home? The Dr's home?

TA Ok Dr. Kauffman? That's 3670 Kalihi Street. That's the house I own. That's at the end of the road where the gate is.

F Ok, ok, ok.

TA Do want to know why the gate is there as oppose to anywhere else?

F Yeah.

TA My dad, my grandfather built that home for my mom and dad. That's my ancestral home and that's why I don't even want to sell that home. "Um and when my mom conceived in Dallas and made it home 3 weeks to have me here. So, my dad became a ranger and while they were building the Wilson tunnel, he would let the workers in and in those days you had to have cards so you don't have any weird disease.

F Yep.

TA Because of the watershed. We had rains for many months. And my grandfather said, "They brought this hutch (clutch?) And he said, "Oh my God, this is weird, you can't do this. All that top soil is going to get full of water." And sure enough, it caved in and all those guys died.

My dad was the one that let the lady in, the kahuna (guardian/keeper/priest) and mom said, "She was so pretty."

F Do you remember what her name was?

TA No but my mom said, "Don't argue with her just let her go." She said, she had very, very sinister eyes and so the gate was there because it was convenient and it was never moved out. In a way it's good because it deters people.

F Yeah, it does. This whole area I know when I stepped onto that ground especially where the house was at; you talk about an energy hole that was in this area. I was like and even the walk I wore white pants and some said, "Who in the hell would think of wearing white pants?" I said, "This was my first time I'm coming to the mountain." Each time I returned to the mountain, I asked for permission to come. And I asked, "What is it that I'm suppose to learn here and what is it that I'm suppose to do from what I learned?" And when I get up to the terrace area and these faces, I was in my element. And I said, "thank you, thank you, thank you so much for allowing me to see faces on the stones as we were walking up the trail." And there's a great person name Dennis Callan.

TA I know Dennis.

F Yeah.

TA I was the one who showed him those terraces.

F He's in Europe right now but he show a clip, a DVD clip, the nature park on what's being discovered and rediscovered and it was interesting because he shared these terrace system.

TA You know, he came looking for me and I showed him where it was because at that time, they wanted to develop it. It's really hard and I didn't want my grand parents to sell it and they were getting old and it was hard for them and they worked all their lives. And they deserve to do what they wanted to do. And Herbert Horita bought it and at that time, he had a difficult time because he built all those condos and basically, my understanding is "you're going to have to ride it out with me" which they did.

Um, then I hadn't live there for awhile and I moved back to the little house to the left and Rudy Pacarro came up with a whole bunch of people and he owned some properties adjacent to that and he was trying to convince everybody to make this into a park. So the City bought it, then the City didn't want it anymore and gave it to the State, DLNR. So, a couple of years later, I said, "you guys need to trim the trees." I finally called the building inspector and so they turned me in, so I said, "no, no, no, I'll go trim al the trees on my side and you guys trim yours." Well, the building inspector said, "The State didn't have any money."

F Ha, ha, ha.

TA That's the story of their lives.



- F We're going to continue the journey with Tony and I will talk about Hi'iaka.
- TA I saw her one time, Hi'iaka floating one time above the house. I knew that stream was one of her places and I know that there use to be a BBQ area up there. Right there in that corner, you can meditate and make contact like I actually saw her floating. She had a blue-green hue about her floating above the house. Actually, I have to tell you off the record because it would be off the wall.
- F Do you see this site for a Hawaiian traditional gathering of fauna or flora or for religious purposes when it goes into this park?
- TA Oh yeah, sure. I don't see any problem with that.
- F Would you come back to the site when the time is for the dedication?
- TA Definitely! Yes, it's my home.
- F Good. I know you shared a lot of things with regards to 'aumakua and deities and as far as Hawaiian names, this is your personal experience. And you are?
- TA Toni Jean Kuulei Alatan, Charles Marek's granddaughter. There are only 2 of us left; my brother Michael James and me. They only had one child, my mother but his legacy lives on and I'm trying to promote his art.
- F End of interview.

## APPENDIX F

### GLOSSARY OF HAWAIIAN TERMS

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1. *ahupua'a* – Land division usually extending from the uplands to the sea.
2. *akua* – God, goddess, spirit, image, idol; divine, supernatural, godly.
3. *ali'i* – Chief, chiefess, king, queen, noble; royal, kingly; to rule or act as a chief.
4. *ali'i 'ai pua'a* – Chief who rules the food or pig, swine, pork.
5. *ali'i nui* – Great or important Chief.
6. *aloha 'āina* – Love of the land.
7. *'au* – To swim, travel by sea.
8. *'auhau* – 1. Tax, assessment, levy; to levy a tax, tax.
9. *'aumakua* – Family or personal god.
10. *'awa* – 1. The kava (*Piper methysticum*). 2. Sour or bitter.
11. *'ewa* – Crooked, out of shape, imperfect; place name for area west of Honolulu, used as a direction term.
12. *heiau* – pre-Christian place of worship.
13. *Hokule'a* – Name of a star; Southern Cross.
14. *honua* – Land, earth; background, as of quilt designs; basic at the foundation, fundamental.
15. *hālau* – Long house, as for canoes or hula instructions.
16. *ho'okupu* – Tribute, gift.
17. *hula* – 1. The hula, a hula dancer; to dance the hula. 2. Song or chant used for the hula; to sin or chant for a hula.
18. *ka lihi* – 1. Edge, rim, border, boundary. 2. Small quantity, particle, a little bit, minutia; slight. 3. Right or interest in property. 4. Portion of a flash hook below the point. 5. Pearl-shell lure, as for *ōpelu*, a fish.
19. *kama'āina* – Native born; host; native plant; acquainted, familiar.
20. *kauhale* – Group of houses composing a Hawaiian home.
21. *kino lau* – Many forms taken by a supernatural, as Pele.
22. *kīpuka* – 1. Variation or change of form (*puka*, hole), as an opening in a forest; especially an "island," often vegetated, of older lava land completely surrounded by a more recent lava flow. 2. Short shoulder cape; cloak, poncho.
23. *ko'ihonua* – Genealogical chant; t sing such chants.
24. *kōkua* – Help, assistant, helper; Comforter (Biblical); cooperation; to help, assist, support, second a motion.
25. *kupua* – Demigod, especially a supernatural being possessing several forms.
26. *kupuna* – Grandparent, ancestor, relative or close friend of the grandparent's generation, grandaunt, granduncle.
27. *lā* – Sun, sun heat; sunny.

28. *la'au lapa'au* – Medicine.
29. *lo'i* – Irrigated terrace, especially for taro, but also for rice.
30. *lōkahi* – Unity, agreement, accord; agreed, in unity.
31. *mahina* – 1. Moon, month; moonlight. *Mahina meli*, honeymoon. 2. Farm, plantation, patch.
32. *ma (kai)* – At, in, on, beside, through, by means of, because of, according to (*mā* frequently before primary stress) *Makai* at the sea, seaward. *Mauka*, inland.
33. *mālama* – To take care of, care for, preserve; to keep or observe, as a taboo; to conduct, as a service; to serve, honor, as God; care, preservation, support, fidelity, loyalty; custodian, caretaker.
34. *mana* – 1. Supernatural or divine power, mana, miraculous power; a powerful nation, authority; to give mana to; to have mana, power, possessed of mana, power. *Mana makua, parenalauthority*. **ho'omana**. (a) to place in authority, empower. (b) to worship; religion, sect. *Ho'omana Kepani*, Buddhist; Buddhism. 2. Branch, limb; cross piece, as of the cross; a line projecting from another line; stream branch; road branch; variant, version, as of a tale; to branch out, spread out.
35. *manō* – Shark, general name.
36. *mauka* – Inland.
37. *moana* – 1. Ocean, open sea. 2. Campground, consultation place for chiefs. **ho'omoana**. To camp. 3. Broad, wide, extended, expansive, spread out. **ho'omoana**. To spread down, as mats.
38. (*moana*) *lua* – 1. Hole, pit, grave, den, cave, mine, crater. **ho'olua**. To bake in the oven, Cf. *kālua*. 2. Toilet, outhouse. 3. Two, second, secondary, twice; doubly, much, a great deal. **ho'olua**. To do twice, repeat, do over and over. 4. Equal, likeness, duplicate, copy, match. Cf. *lua'ole*. 5. Companion, mate. Cf. *kōko'o*.
39. *mō'i* – King, sovereign, ruler, queen.
40. *mo'o* – 1. Lizard, reptile of any kind, dragon, serpent; water supernatural (extremely common in legends). 2. Succession, series, especially a genealogical line. Cf. *mo'o ali'i, mo'o'ōlelo*. **ho'omo'o**. To follow a course, continue a procedure. 3. Story, tradition (less common than *mo'olelo*). 4. Narrow strip of land, smaller than an *'ili*. Also called *mo'o 'āina*.
41. *mo'o Ku* – Priests of the lineage of Ku, devoted to the worship of Ku.
42. *mo'o kū'auhau* – genealogical succession.
43. *mo'oleo* – Story, tale, history, tradition legend, journal, record, article; minutes, as of a meeting (from *mo'o 'ōlelo*, succession of talk).
44. *'ohana* – 1. Family, relative, kin group; related. 2. To gather for family prayers.
45. *'ōlelo no'eau* – Proverb, wise saying, traditional saying.
46. *pana* – 1. To shoot, as marbles, arrows, a bow; bow and arrows; to snap, as with fingers. 2. Heartbeat, pulse, beat in music; to beat time, pulsate, throb. *Nanā ka pana*, to take the pulse. 3. Celebrated, noted, or legendary place.
47. *'ulu* – 1. Breadfruit (*Artocarpus altilis*). 2. Round, smooth stone as used in *'ulu maika* game; bowling ball; bell clapper.
48. *wahi* – 1. Place. (*Ka wahi* contracts to *kahi*). 2. Some, a little, a few, a bit of. 3. To say (usually followed by the possessive *a*, and not preceded by either verb or noun particles). *Wahi a wai?* Who said so?

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**An Archaeological Assessment Report  
for a Property Located at TMK: 1-4-014:  
01 & 26 and 1-4-14:03 in Kalihi  
Ahupua'a, Kona District, Island of O'ahu**



**AN ARCHAEOLOGICAL ASSESSMENT  
FOR A PROPERTY LOCATED AT TMK: 1-4-14: 01 & 26 AND 1-4-16: 03  
IN KALIHI AHUPUA'A, KONA DISTRICT,  
ISLAND OF O'AHU**

**JULY 2005**

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## Abstract

Although titled “An Archaeological Assessment” for reasons having to do with nomenclature associated with HRS 6e, this document is the first phase of an Archaeological Inventory Survey conducted on a property located in Kalihi Ahupua‘a, Kona District, on the island of O‘ahu. The purpose of these investigations, following the guidelines set forth in a unique scope of work agreed upon by State Parks, ACP, Inc., and Kokua Kalihi Valley, was to determine if significant historic properties exist within the project limits, and if so, to indicate their approximate locations on a topographic map. A second follow-up exercise to be conducted at a later date will supply the necessary components to complete a proper Inventory Level Survey.

Investigations took the form of an 80% surface survey of the Phase I area of the subject property in conjunction with a brief review of the historic background of the area. Following the limited guidelines in the scope of work created by ACP in consultation with State Parks archaeologist Martha Yent, 11 sites were identified on the property and their approximate locations were indicated on a map of the area. Site evaluations must await further work.

The sites encountered on the subject parcel can be divided into two categories, those constructed between 1900 and 1950 including two houses and a nursery, and those sites of unknown age and of unusual construction. Those in the second category most critically need additional work in the form of subsurface testing, mapping, and dating before evaluations can be made that determine their age, function, or who was responsible for their construction. In the meantime, all sites on the present subject property are recommended for preservation until further work determines otherwise.

Based upon the results of the current investigations, ACP recommends that the appropriate agency make a determination that the proposed development will have an “effect with proposed mitigation commitments” on significant historic properties. Because the current investigations have not yet collected sufficient information regarding any of the sites on the subject parcel, additional mitigation commitments associated with the proposed development are necessary and further archaeological work is recommended for all sites on the current subject property.

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**An Archaeological Assessment  
for a Property Located at TMK: 1-4-14: 1 & 26 and 1-4-16: 3  
in Kalihi Ahupua‘a, Kona District,  
Island of O‘ahu**

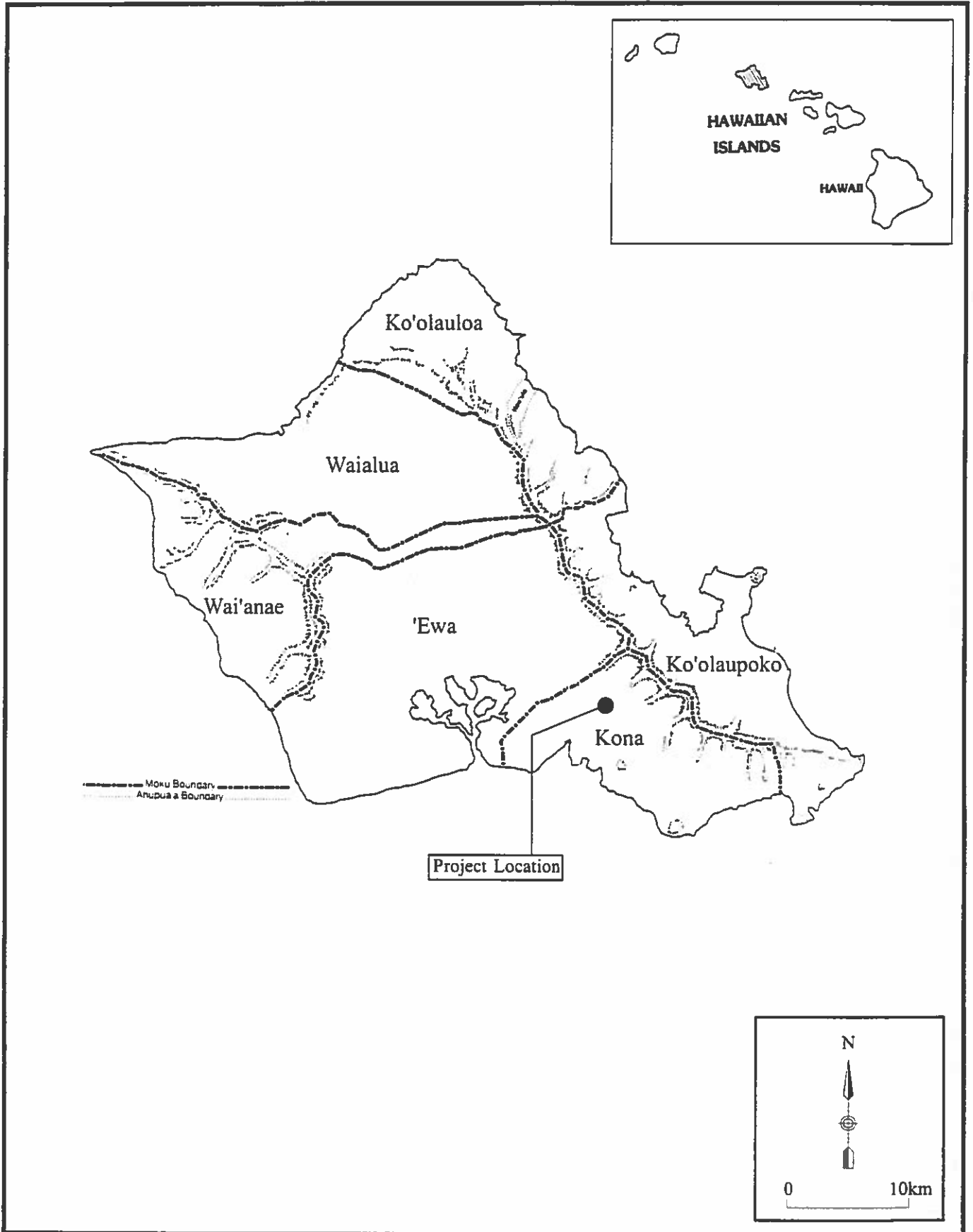
**Section 1: Introduction**

At the request of Mr. Gary Gill, Archaeological Consultants of the Pacific, Inc. (ACP) has prepared this Archaeological Assessment for a property located in north central Kalihi Valley on the island of O‘ahu (see Figure 1). The property, owned by the State of Hawaii and administered by State Parks, is currently being leased to the non-profit foundation Kokua Kalihi Valley (Comprehensive Family Services). Kokua Kalihi Valley plans to develop the subject property into the Active Living Center Kalihi Valley Nature Park (see Figure 6 for proposed plans).

The purpose of these archaeological investigations was to perform the tasks and partially meet the requirements specified by the National Historic Preservation Act (NHPA) and the Department of Land and Natural Resources, State Historic Preservation Division (DLNR-SHPD). These investigations would allow for the preliminary evaluation of the significance of potential historic resources located on the current subject property including their eligibility for inclusion in the National Register of Historic Places. These investigations also allow for making preliminary recommendations concerning the mitigation of the impact of future construction activities upon potentially significant historic resources.

This first phase of the Inventory Survey investigations has determined that all sites must be considered significant to the interests of historic preservation until further archaeological mapping, and subsurface testing can be performed. This report presents the results of a brief archival review of the historic background of the project area, a description of the sites identified and their approximate locations on a topographic map, and recommendations concerning the future phases of this survey.

Figure 1: Project Location on a Map of O'ahu



Kalihi Ahupua'a TMK: 1-4-14: 01 & 26 and 1-4-16: 03

source: Adapted from Nogelmeier in Snakenberg 1990

## Section 2: Physical Setting

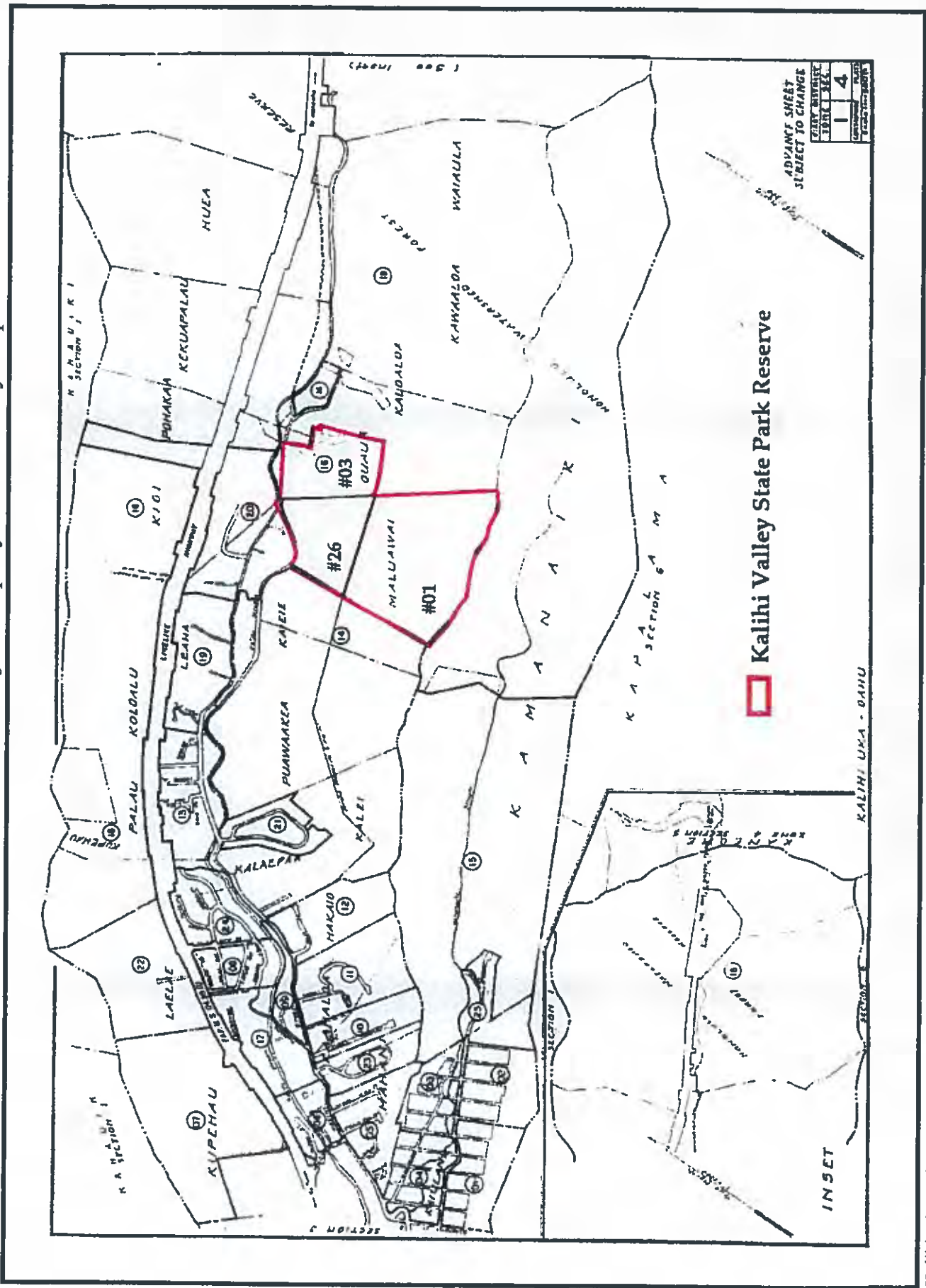
The subject property is located on the lands of Maluwai and Ouaua in north central Kalihi Valley in southern O‘ahu (see Figure 3). The project area consists of TMK: 1-4-14: 1 & 26 and 1-4-16: 3 located in the *ahupua‘a* of Kalihi, district of Kona, island of O‘ahu. The subject property is irregular in shape extending south of Kalihi Street covering 99.580 acres. The northern boundary is marked by Kalihi Stream on the west half of the property, and by Kalihi Street on the east portion of the property. Board of Water Supply watershed land forms the eastern boundary, and the southern boundary of the property is Kamaikai Ridge (see Figure 2).

The elevation on the property begins around 500ft above mean sea level (AMSL) on its northern boundary and slopes upward to the 700ft AMSL level where it begins to rise sharply up the Kalihi Valley wall ending at its southern boundary on Kamaikai Ridge (1320-1460ft AMSL). Kalihi Stream runs along the northern boundary of the subject property. Two private nurseries as well as two houses remain abandoned on the land and associated road cuts and bulldozed fields stand as evidence of previous activity (see Figure 5). The lower portion of the property is ribbed with ridges and gulches containing intermittent streams that run south-north. Rain falls year round on the subject property, averaging between 70 and 90 inches a year. A greenhouse effect is created by the high humidity providing a lush environment for both native and non-native plant species. Flora identified on the subject property include but are not limited to: *mai‘a*, banana (*musa*), banyan (*Ficus retusa*), kukui, candlenut (*Aleurites moluccana*), *niu*, coconut (*Cocos nucifera*), torch ginger (*Phaeomeria magnifica*), white ginger (*Hedychium coronarium*), *kuawa*, guava (*Psidium guajava*), *hau* (*Hibiscus tiliaceus*), manako, mango (*mangifera indica*), ‘ohai, monkeypod (*samanea saman*), Norfolk island pine (*Araucaria heterophylla*), octopus tree (*Brassaia actinophylla*), kalo, taro (*Colocasia esculenta*), ki, ti (*Cordyline terminalis*), ohia (*Metrosideros polymorpha*), Moluccan albizia (*Falcataria moluccana*), *uluhe*, false staghorn fern (*Dicranopteris linearis*), strawberry guava (*Psidium cattleianum*), rose apple (*Syzygium jambos*), common bamboo (*Bambusa vulgaris*) and green bamboo (unknown species), and various grasses (see Connolly 1980 for a more complete list of flora on the subject property).

According to the Soil Survey of the Island of O‘ahu, the soils expected to be encountered on the subject property would consist of lokekaa silty clay formed from gravelly colluvium and alluvium that has eroded from higher elevations (Foote, Hill, Nakamura & Stephens 1972:Sheet 62).



Figure 3: Location of Subject Property on a Tax Key Map



Kalihi Ahupua'a TMK: 1-4-14: 01 & 26 and 1-4-16: 03

source: Department of Taxation, Tax Maps Bureau 1932



## Section 3: Historic Background

### Section 3.1: Land Use History

#### *Legendary and Traditional Accounts*

Many of the legendary and traditional accounts in Kalihi take place deep in the valley, known as the “*wao akua*” mountain region, where the spirits were said to have resided (Hammatt & Shideler 2002). Kalihi is rich in tales of the goddess, Kapo, who, “... at noon when the sun is shining brightly ... may be seen on the hillside beyond the upland of Kilohana where stands her tapu stone into which she entered, shaped like a house in front, like a fish’s tail behind” (Beckwith 1970:186).

Kapo, patron of the *hula*, was the daughter of Papa (or Haumea) and her husband Wakea who resided in Kalihi Valley. A reference from Westervelt, in Beckwith (1970:186), states that she (Kapo) is “of high rank and able to assume many shapes at will.” According to legend, Kapo is able to detach her sexual organ from her body allowing it to travel in flight, giving her the name Kapo-kohe-lele. The following excerpt from Beckwith (1970:187) provides further insight into the legend of Kapo-kohe-lele:

When Kamapua’a attacked Pele near Kalapana, Kapo sent this kohe as a lure and he left Pele and followed the kohe lele as far as Koko Head on Oahu, where it rested upon the hill, leaving an impression to this day on the Makapu’u side. Then she withdrew it and hid it in Kalihi. When the Hawaiians dream of a woman without a vagina it is Kapo. Since Kapo does not like this part of the body, unless a medium possessed by Kapo wears a ti leaf protection she is in danger of having this part of her body torn at.

Beckwith later expands on this legend (Beckwith 1970:278-279). Kapo’s mother, in her human form as Papa (her spirit form being Haumea, or Mother Earth [Handy & Handy 1972:475]), lives on O’ahu as wife to Wakea. While living there, she “transforms herself into a growing tree in which she conceals her husband from those who are leading him away to sacrifice.” As Haumea, she resides in “the divine land of the gods in Nu’umealani and changes her form from age [sic] to youth and returns to marry with her children and grandchildren.” Many Hawaiian myths surrounding Haumea are associated with the supply of food and an increase in family stock through marriage and birth. Haumea had the power to grant a chiefess a painless childbirth and was the keeper of the powerful Makalei stick, which attracted fish and promised a never-ending food supply. Thrum noted in his research the presence of a *ho’oulu’ai*, or shrine, dedicated to an increase in food (Handy & Handy 1972:475). Ka’ie’ie Heiau, in Kalihi Valley, was dedicated to Haumea and was said to be the sight of some of her transformations. McAllister’s 1933 report on archaeological sites of O’ahu indicated that only remnants of this *heiau* remained (McAllister 1933:88; refer to Section 3.2).

McAllister also gives a description of the well-known stone affectionately called “The anus of Kalihi” (McAllister 1933:89-90):

... When almost out of the hill valley of Kalihi, close to Joe Kalama's place, on the mauka side is the spot called "The anus of Kalihi," "Ka-elemu-wai-o-Kalihi." The exact place is in a solidly planted rock in the middle of the stream in the center of which when the flow is low, one can see a little hole shaped like an anus out of which the water flows and runs down below. The rock about the hole is shaped like the buttocks.

On the Ewa side of the stream the home site is still to be seen at a place called Kupehau where the chiefs of Hawaii resorted because of the delicious *poi* and tender taro crops to be had there. Kamehameha the First was one of the chiefs who visited the spot. After his battles on Oahu he went to rest at Kupehau and one day the chief came down to the stream to bathe when the water was low. Kamehameha stuck his finger into the hole and said "Kahaha! The water of Kalihi comes from the anus!" and from that day the name stuck to the place.

Although there is no evidence of battles being fought in Kalihi, various armies had traversed through the valley on their way to battle. Fornander (1917:Vol 4, pgs.410-411), in Hammatt & Shideler (2002), indicated Lonoikaika passed through Kalihi while leading his attack against Kūali'i. Also in Kalihi, Kaiana joined forces with Kalanikūpule, climbed over Kalihi Pass and attacked Kamehameha's armies (Kalākaua 1972:406-408).

Pukui (1983:186 in Hammatt & Shideler) offers one of the rare recorded traditions of coastal Kalihi: *Ke kai nehe o Pu'uhale*, meaning "The murmuring sea of Pu'uhale." Pukui explains, "The sea at Pu'uhale, Kalihi, O'ahu was said to murmur softly as it washed ashore. There were once many fishponds there" (*Ibid.*:6).

### *Early Historic Accounts*

Kalihi Valley, at the time of Western contact, had a thriving agricultural society living along the valley's floodplains. Evidence of religious and political practices in Hawaiian society in association with Kalihi Valley is depicted in the tales of fishponds, *heiau* and trails connecting Kalihi to other important island districts (Hammatt & Shideler 2002).

Hammatt & Shideler (2002) provided an excerpt by John Papa 'Ī'Ī (1959:95) of an excursion heading west in 1810, confirming von Kotzebue's account of, "... an abundance of *lo'i* where the main trail crossed Nu'uaniu Stream, a relatively uncultivated plain as the trail traversed Kapālama and Kaiwi'ula and then more *lo'i* on Kalihi Stream" (Hammatt & Shideler 2002:7):

When the trail reached a certain bridge [at Nu'uaniu], it began going along the banks of the taro patches, up to the other side of Kapālama, to the plain of Kaiwi'ula; on to the taro patches of Kalihi; down to the stream and up the other side; down into Kahauiki...

Handy and Handy (1972:475) describe the layout of Kalihi Valley:

Kalihi had a shallow seaside area, now the shore of Kalihi Basin, that was, like that of Moanalua, ideal for the building of fishponds, of which there were six (McAllister 1933:90-91). On the flatlands below the valley there were extensive terraces on both sides of the stream, while along the stream in the lower valley there were numerous areas with small terraces (Handy 1940:79). The interior valley was rough and narrow and not suitable for *lo'i*, but would have been good for sweet potatoes, yams, *wauke*, and bananas which probably were planted there.

### *Land Commission Awards*

There were three Land Commission Awards (LCA) located on the current subject property (see Figure 4). Folk, Crotty and Hammatt (1993:9) note that over 100 LCA's were recorded for Kalihi Ahupua'a. Through the study of LCA's, it can be deduced that a majority of the population was living close to Kalihi Stream with an apparent lack of coastal dwelling.

The two prominent LCA landholders on the subject property were Victoria Kamamalu (LCA 7713) and Kaunuohua (LCA 6450), who also held a significant number of other properties around the Islands. Victoria Kamamalu, a princess and sister of Kamehameha VI and V, received many properties through LCA 7713 not only on Oahu, but also on all five major islands. The property awarded to her in Kalihi Valley was on TMK 1-2-14: 1 and 26. Kaunuohua (LCA 6450) was awarded not only the 'Ili Mokauea in Kalihi Ahupua'a but also an 'Ili of land at Waikiki, Kona, Oahu, and the Ahupua'a of Kalaupapa, Ko'olau, Moloka'i.

A small portion of TMK 1-4-16: 3 was awarded to Keawepoepoe (LCA 1049). Keawepoepoe refers to his land in Kalihi as farmland. LCA 7175, located north across Kalihi Stream from the current subject property and a house property located to the west of the current subject property (see Figure 4) were described by the claimant Kapule as follows:

The Land Commissioners: I, the one whose name is below, hereby state my claim for land at Mokauea, an 'Ili in Kalihi. There are eleven lo'i. On the east is a separate kula for me, two mala of bananas are there. On the south is a stream, on the north is a pali, on the west is a kula. I have four lo'i together in the land of Loiloa, also a small separate kula is there. There is also a house claim. My residence is at Kalihi uka in Kaieie.

Kapule X his mark

According to such testimony, farming did occur at this location in the valley and *lo'i* were utilized in the area. Therefore, although such agricultural features may not have been extensive, taro cultivation, including terrace agriculture, may have occurred on the subject property on a small scale.



## *Land Use in the Late 19<sup>th</sup> and Early 20<sup>th</sup> Centuries*

Little is known about pre-contact land use in upper Kalihi Valley. As mentioned above, Handy and Handy (1972: 475) write, “The interior valley was rough and narrow and not suitable for *lo‘i*, but it would have been good for sweet potatoes, yams, *wauke*, and bananas, which probably were planted there.” However, in 1940 (p. 79), in *The Hawaiian Planter Vol. 1*, Handy wrote that, “Extensive terraces covered all the flatland in lower Kalihi Valley for approximately 1.25 miles on both sides of the stream. Above this the valley is too narrow for terraces for a mile or more, but in upper Kalihi there are numerous small areas that were developed in terraces.” Land Commission Awards (during the mid-nineteenth century) indicate that taro was cultivated in the vicinity of the subject property. Therefore, “while upper Kalihi Valley would have been unsuitable for extensive taro *lo‘i* fields, it is likely that areas of the upper valley...were amenable to construction of smaller patches during the pre-contact period” (Hammatt and Chiogioji 1994: 4). Small settlements or habitation sites were probably associated with these small taro patches. In 1830, a traveler to the valley recalled scattered, sparse habitation sites within the valley:

The valley of Kalihi succeeds to that of Anuuana [Nuuanu], but it is less bold and diversified in its scenery. Human dwellings and cultivated lands are here very few, or scattered thinly over a great extent of, probably, the finest soil in the world. (Bennett 1840:202)

The LCA 7175 testimony by Kapule discussed above refers to *lo‘i* and a house site in areas to the north and west of the subject property. Such testimony supports the above comments regarding land use in the north central portion of the valley.

Little written information has been gathered regarding land use activity on the subject parcel itself. However, an interview with a former resident of a house (Site 6) on the subject property provided much of the historic land use information for this document. Ms. Toni Alatan’s grandmother received the land from her *hanai* and she and her husband built the main house (Site 6) on the lower portion of the property in the early part of the century. Ms. Alatan recalled her grandmother telling her about Chinese who lived and farmed in the area around the turn of the century. In addition, she mentioned a man who had lived in a shed on the eastern portion of the property while producing bootleg liquor (probably the area of Site 11). She also remembered that her family had helped to move a small house (Site 8), located to the southeast of the main house (Site 6), out from underneath an old, large banyan tree. Nearby this house was a well and pump house (Site 8) that had been built to catch water from a spring in the area. Behind the main house (Site 6), Ms. Alatan recalled a flat area that her grandfather had used as an orchard. In addition, she described how he had mined much of the area for soil, creating large cuts into the hillsides.

According to Alatan, in early 1950's a Korean man began a nursery on the upper portion of the subject property, of which a house and many equipment sheds and storage areas still remain in deteriorating condition. The nursery changed hands a few times, and was in and out of operation until the early 1980's. A number of road cuts, some still partially paved with asphalt can be found around the subject property and in both the lower east and west portions of the parcel are many old abandoned cars and other late historic and modern debris. The land passed into the hands of the City and County of Honolulu, and it was made into a park. Soon after, the City gave the land to the State where it remains today as the Kalihi Valley State Park Reserve.

### Section 3.2: Previous Archaeology

Some of the earliest descriptions of archaeological sites on O'ahu come from Thrum who documented three *heiau* in Kalihi Ahupua'a:

Kaieie .....Kalihi-uka, on premises of Dr. Huddy; of hoouluai class, Haumea its deity. Parts of foundation only remain.  
Kaaleo.....Kalihi-kai. No particulars ascertained.  
Haunapo.....Kalihi-kai. No particulars ascertained. (Thrum 1909:41)

It was not until 1933 that additional archaeological properties were documented in Kalihi during McAllister's island-wide survey of O'ahu. McAllister designated all of Kalihi Valley as Site 72 and gives the following description:

Kalihi Valley. If any archaeological remains yet exist in Kalihi Valley, they are not known to the Hawaiians. David Kama, who is caretaker of the water reserve, tells me that he has heard the drums on nights of Kane, above his house, but he has never found the *heiau*.

McAllister mentions the *heiau* described by Thrum but was unable to obtain additional information regarding these sites and did not assign them site numbers. Kaieie Heiau was located on the land of Kaieie, makai of Maluwai's land, on which the majority of the subject property lies (see Figure 4). It "was dedicated to Haumea, the earth-mother goddess and is of the Ho'oulu'ai class—a *heiau* where the first fruits were offered to insure further growth" (Connolly 1980: 6).

Ms. Toni Alatan, in an interview with ACP, recalled instructions her grandmother had given her to find a *heiau* to the west of their property. She had been told to go to two silver water tanks that used to be located on the top of the ridge near the end of their property line in the back. Near those tanks there was a pin marking the property boundary. Her grandmother told her that if she followed the line of the property straight west from the pin far enough down, beyond the terraces, she would find a *heiau* on their side of the stream. Ms. Alatan says that the *heiau* was not on their property but it may have been on the adjacent property. These directions most likely describe how to locate

Kaieie Heiau, which is located one property to the west of Ms. Alatan's grandmother's land.

McAllister also describes several named stones and prominent locations, a *holua* slide whose location was no longer known and a location known as Ka-elemu-wai-o-Kalihi (discussed in Section 3.1 above). Finally, McAllister documented two fishpond sites located in coastal Kalihi-kai.

In 1940, Handy mentioned that a number of small areas had been developed with terraces in upper Kalihi Valley.

The modern era of archaeological investigation in Kalihi Ahupua'a began around 1976 when Chiniago Enterprises conducted archaeological investigations on a five acre parcel in north central Kalihi Valley. Four previously unidentified archaeological sites were identified including SIHP Site 1419, a terrace retaining wall; Site 1420, a 1.6m high retaining wall and paved area; Site 1421, a terrace retaining wall; and Site 1422, a rectangular earthen terrace (Barrera 1976a & b)

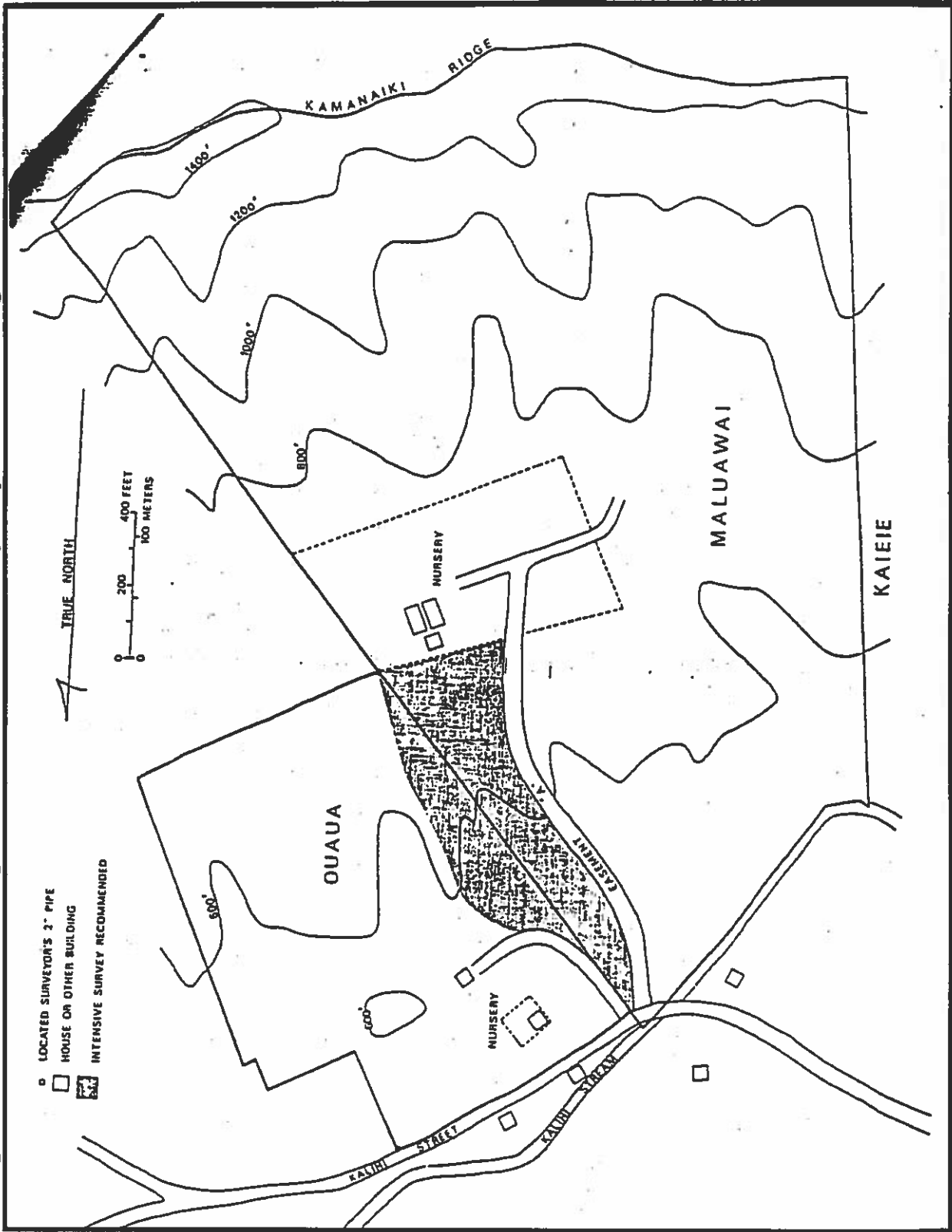
In 1980, Archaeological Research Associates conducted archaeological reconnaissance of close to 100 acres in north central Kalihi Valley on the current subject property. An agricultural complex was identified consisting of 'auwai, terrace retaining walls, boulder mounds, etc., which was subsequently designated SIHP Site 3980 (Connolly 1980) (see Figure 5).

In 1988, B.P. Bishop Museum conducted investigations of a parcel of land adjacent to the subject property covering approximately 50,000 sq. ft.. These investigations identified historic road cuts and retaining walls believed to have been associated with the "old Kalihi Road" and subsequently designated SIHP Site 2004 (Sinoto, Takeuchi & Imada 1988).

In 1994, Cultural Surveys Hawaii (CSH) carried out an archaeological reconnaissance survey of a proposed development by the Honolulu Board of Water Supply of an exploratory well site in upper Kalihi Valley adjacent to the subject property. No pre-contact or historic features were identified in addition to those documented by Sinoto *et al.* in 1988. Most of the historic wall features noted in 1988 had been destroyed by construction of a reservoir on the property, but none of the remaining features were located near the proposed well site (Hammatt and Chiogioji 1994).

Archaeological work has also been carried out in the *makai* regions of Kalihi Ahupua'a over the last decade. In 1993, CSH conducted an archaeological survey with subsurface testing for a property located on Middle Street in Kalihi on behalf of the City & County of Honolulu Public Transit Authority. Three post-contact human burials were found in association with a cultural layer, all of which were designated SIHP Site 4525 (Folk, Crotty & Hammatt 1993). In 2002, CSH conducted an archaeological assessment

Figure 5: 1980 Archaeological Reconnaissance Survey Map of Area of High Site Concentration



Source: Connolly 1980

Kalihi Ahupua'a TMK: 1-4-14: 01 & 26 and 1-4-16: 03



of the area at the proposed Middle Street Transit Center in Kalihi, determining that there were “no specific historical concerns” for the subject property (Hammatt & Shideler 2002). Also in 2002, International Archaeological Research Institute Inc. (IARI), conducted paleoenvironmental investigations at Site 73, adjoining fishponds located along the coast of Kalihi Ahupua‘a. The results indicated that the deposits tested consisted of fill material or that they had been significantly disturbed demonstrating the difficulty in targeting fishpond floor sediments in a stratigraphic column (Athens 2002). In January of 2004, Archaeological Consultants of the Pacific, Inc. (ACP) conducted an inventory survey on a property located on Sand Island Access Road near Ke‘ehi Lagoon, the former location of portions of two fishponds. Cores of lagoonal deposits were tested and found to contain sediments that had been deposited prior to the colonization of the Hawaiian Islands by humans (Moore Bevan and Kennedy 2004).

In the late 1980’s and early 1990’s, several additional archaeological investigations were undertaken which did not identify significant cultural properties. These include an archaeological reconnaissance conducted on Sand Island (Hammatt 1986), an archaeological reconnaissance conducted in northeastern Kalihi Valley (Kennedy 1990), an archaeological survey and monitoring program conducted in north central Kalihi Valley (Schilz 1990), a historic literature and document search for a property in southwestern Kalihi Ahupua‘a (Landrum & Klieger 1991), and, finally, a surface survey with subsurface testing was carried out in northeastern Kalihi Valley (Bordner 1994).

### Section 3.3: Settlement Patterns

Based upon the information concerning previous land uses and archaeological work conducted in Kalihi Ahupua'a, the settlement patterns can be summarized. The earliest utilization of the area likely took the form of temporary coastal habitation, which provided access to the nearby littoral resources. Simple structures constructed near the shore would have provided temporary shelter. As the population of the islands increased, permanent settlement would have likely been established along the streambeds and expanded inland for the development of *lo'i* and *kula* lands, while the upland forests were used for the collection of various raw materials.

The archaeological evidence and historical research cited above indicate that after permanent occupation had become firmly established, the *ahupua'a* would have seen the lands along the streams intensively utilized for *lo'i*, the coastline developed into fishponds and the *kula* slopes used for dryland crops. Permanent habitation was likely restricted to the developed areas along the waterways. Scattered temporary habitation could have occurred further inland in association with *lo'i* and *kula* crops or in areas from which specific resources were regularly gathered. This pattern likely continued until the time of Western contact. By the late 1800's, as the population of Honolulu increased, much of the land was converted into residential development or became used for industrial pursuits.

### Section 3.4: Expected Finds

Based on the land use, settlement pattern, and previous archaeological investigations within Kalihi Ahupua'a, the expected finds for the current project area may be surmised. Because it was known that pre-contact sites were present in the Kalihi area, it may be assumed that some additional examples of these sites may still be extant.

Residential units, and of course fishponds, were located in areas far *makai* of the subject property, and the recorded *heiau*, excepting the one on the land of Kaieie adjacent to the subject property, were also located in this general, seaward vicinity. While the possibility of some upland, pre-contact residential sites are possible, as are isolated pre-contact burials and religious sites, by far the most likely pre-contact site type for this particular property would be the irrigated taro terrace system, which is a hydraulic and topographic fit for this area. Streambed erosion-retaining walls have been encountered on properties located in close proximity to the current subject parcel and are likely to exist on this property as well, however, the era during which these features were constructed is still unknown. Post-contact era sites older than 50 years are also to be expected in the subject area. Two houses and a nursery located on the property were constructed before or around 1950. Associated sites including bulldozer cuts, soil-mined areas, driveways, sheds, or debris are to be expected as well.

## Section 4: Archaeological Methods

The current archaeological investigations were conducted over four days in June of 2005. All fieldwork was conducted under the direction of the Principal Investigator, Joseph Kennedy, M.A.. Fieldwork was conducted by Field Archaeologists Diane Guerriero, B.A., and Elena Kouneski, B.A.. Fieldwork methods consisted of an 80% surface survey of the subject area below the 700-foot contour line as set forth in the special conditions of the Phase I scope of work.

The methodology employed in the recordation of features identified within the project area during this phase was set forth in the scope of work (SOW) (see Section 4.1, p. 17 of this document) written by Joseph Kennedy of ACP in close consultation with State Parks Archaeologist Martha Yent,. Upon completion, the SOW was given to State Parks personnel. Holly McEldowney of State Parks composed a more detailed SOW in agreement with that of ACP's and submitted it to DLNR-SHPD for approval June 23<sup>rd</sup>, 2005 (see Appendix C for State Parks SOW). As of the completion of this report, no response has been received from DLNR-SHPD regarding the SOW.

All identified features, site complexes, and areas of potential sites were flagged and given temporary site numbers with their locations approximated on a topographic map. Approximately 20% of the property was impossible to survey due to vegetal restrictions created by extraordinary thickets of *hau* (*Hibiscus tiliaceus*). It is expected that additional sites remain to be identified in these heavily vegetated thickets. Sites that were identified around the periphery of these vegetated areas are presumed to continue under the vegetation. Vegetation clearing at a later date will aid in the documentation of these sites.

A pedestrian survey was utilized to systematically investigate portions of the subject parcel. The purpose of the pedestrian survey was to identify all potentially significant historic properties located on the surface of the portions of the subject area investigated. The field archaeologists conducted the pedestrian survey by sweeping the parcel on foot using transects spaced approximately 10 to 15 meters apart. Transects were oriented roughly north/south. Visibility varied from good to poor due to the dense vegetation. Through the use of this procedure an 80% surface survey of the subject area below the 700 foot contour line was completed, and all potentially significant historic properties within this area were identified.

This report does not provide complete descriptions of an Inventory Level Survey. The investigations undertaken did not include the placement of the features on plans drawn to scale or the testing of cultural properties. Also, the presentation of the results does not include final determinations of site significance or information regarding the impact of future construction endeavors. As discussed and agreed upon, detailed mapping and testing of these cultural properties will take place at a later date.

#### **Section 4.1: ACP, Inc. Scope of Work (SOW)**

1. Archaeological Consultants of the Pacific (ACP) shall conduct a modified Inventory Level Survey on a portion of a property identified as TMK: 1-4-14:01&26 and 1-4-16:3 which shall be identified in this SOW as Phase I.
2. ACP shall include in the final Phase I report the standard component parts as follows: Introduction, Methodology, Physical Setting, Previous Archaeological Work in the Area, Settlement Pattern, Site(s) Description, Expected Finds, Land Use History, Significance Evaluation Criteria, Recommendations for Further Work and Conclusion.
3. In this case, The Area of Proposed Effect (APE) shall be modified to accommodate a phased survey. Phase I shall consist of those portions of TMK: 1-4-14:01 & 26 (por), TMK: 1-4-16:03 (por) that are below the 700 foot contour line. Phase II shall be considered all that is above the 700 foot contour line. This SOW applies to Phase I only.
4. There are special conditions that shall effect the methodology employed in the Phase I fieldwork. These special conditions are that a 100% pedestrian survey of lands on TMK:1-4-14:01 & 26 (por), 1-4-16:03 (por) that fall below the 700 foot contour shall be undertaken, with the exception of those areas that are determined to be so heavily vegetated that normal passage is deemed impractical. These areas shall be designated on a map and presented in the final report. Also the report shall contain a proviso that these areas will have to be subjected to survey sometime in the future.
5. A second special provision shall cover any site or site complex that is discovered in the course of the Phase I survey. These sites or complexes shall have their approximate locations presented on a map in the final report, however detailed mapping and testing of these cultural properties shall be allowed to take place at a later date. A proviso to this effect shall appear in the final Phase I report.
6. The details of this SOW were discussed and agreed upon between Joseph Kennedy of ACP and Martha Yent, archaeologist of the State Parks section of The Department of Land and Natural Resources on Friday, June 3<sup>rd</sup>, 2005.

#### **Section 5: Archaeological Findings**

The current investigations included an 80% surface survey of the subject property. No subsurface investigations were conducted in this phase. The subject property is in an area that has been the site of two residences and large commercial nursery operations. Portions of the property appear to have been bulldozed, leveled, or mined for soil. However, although the subject property has been significantly altered by these modern activities, a number of archaeological sites still exist and will be described in further detail in this section. All site and feature numbers are temporary designations.

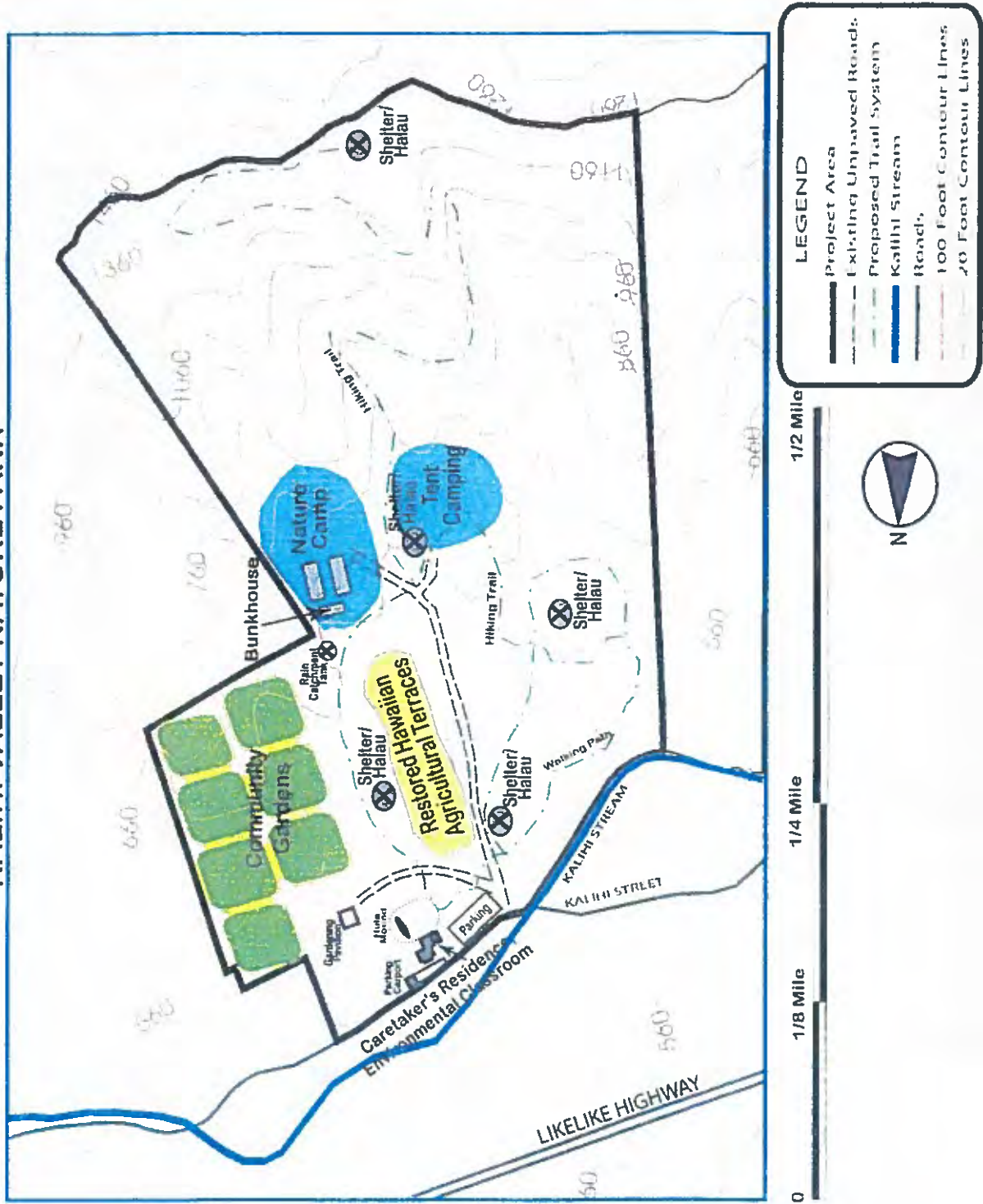
Table 1: Temporary Site Numbers, Site Descriptions and Tentative Functions

1A	Stream bank retaining wall	Water diversion
1B	Rock walls	Water diversion
1C	Auwai	Water diversion
1D	Auwai	Water diversion
1E	Auwai	Water diversion
2	Possible historic refuse scatter	Habitation Related
3	Nursery	Agricultural/habitation
4A	Stream bank retaining wall	Water diversion
4B	Rock mound	Ag/boundary*
4C	Rock mound	Ag/boundary*
4D	Rock mound	Ag/boundary*
4E	Rock alignment	Ag*
4F	Terrace and rock mound	Water diversion
4G	Terrace	Water diversion
4H	Terrace	Ag
4I	Terrace	Ag
4J	Terrace	Ag
4K	Terrace	Ag
4L	Rock mound	Ag/boundary*
4M	Rock mound	Ag/boundary*
4N	Rock mound	Ag/boundary*
4O	Rock mound	Ag/boundary*
4P	Terrace	Ag*
5A	Stream bank retaining wall	Water diversion
5B	Terrace	Ag*
5C	Stone platform	Habitation*
5D	Stream bank retaining wall	Water diversion
5E	Stone dam	Water diversion
6	Historic House	Habitation
7A	Stream bank retaining walls	Water diversion
7B	Rock mound	Water diversion
8A	Stone-retained slope	Habitation related
8B	Dilapidated house	Habitation
8C	Pump house	Habitation related
8D	Well	Habitation related
8E	Stream bank retaining wall of cement blocks and stone with mortar	Habitation related
9	Ahu	Landmark/boundary*
10	Stream bank retaining wall	Water Diversion
11A	Historic refuse site	Habitation related
11B	Rock alignment	Habitation related
11C	Historic midden scatter	Habitation related

\*indicates a tentative designation

Figure 6: Preliminary Plans for the Development of the Active Living Center Kalihi Valley Nature Park

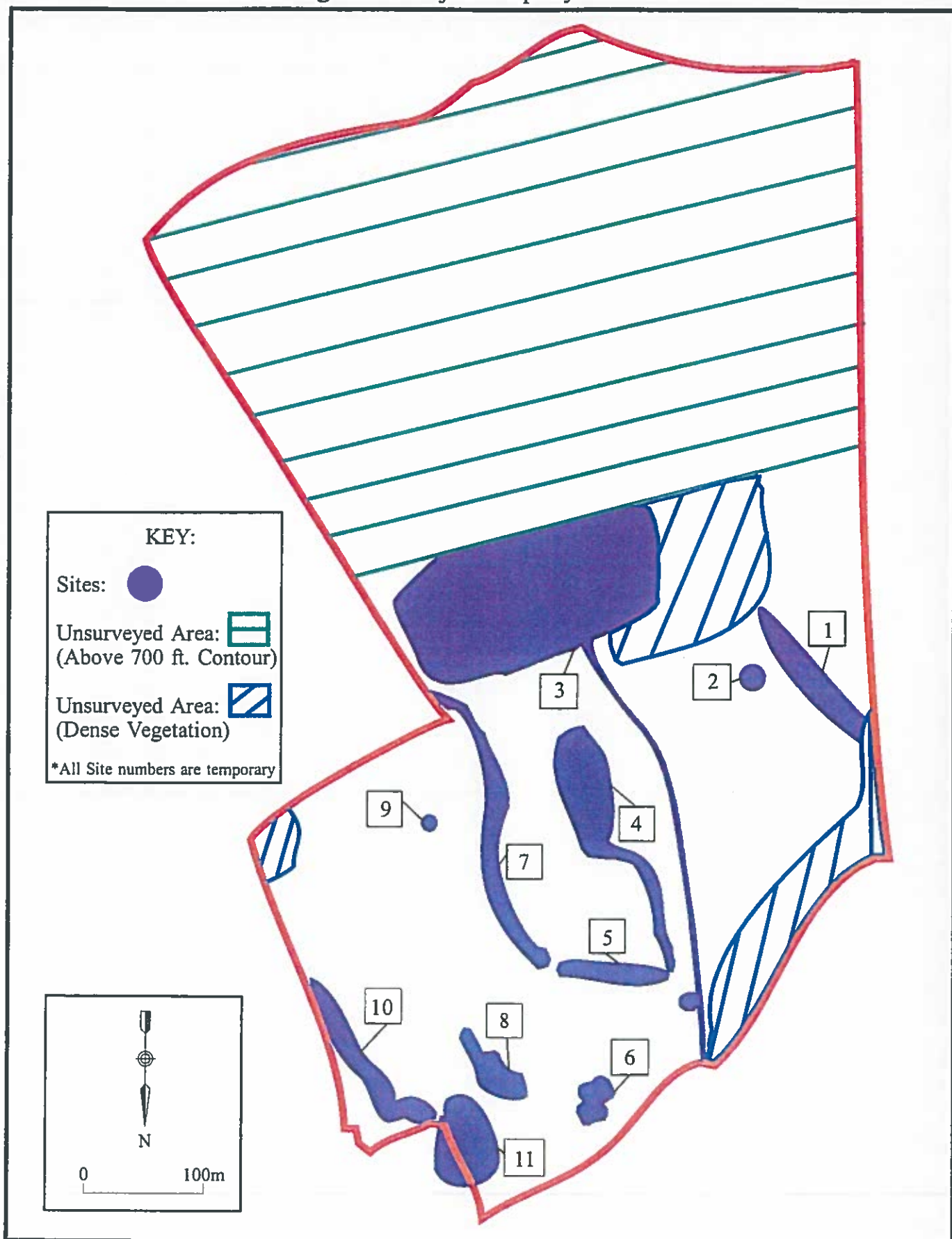
## PRELIMINARY MASTER PLAN MAP OF THE ACTIVE LIVING CENTER KALIHI VALLEY NATURE PARK



Source: Kokua Kalihi Valley

Kalihi Ahupua'a TMK: 1-4-14; 01 & 26 and 1-4-16; 03

Figure 7: Subject Property Site Plan



## Section 5.1: Site Descriptions

### *Site 1*

Site 1 is comprised of stream bank retaining walls that line the major water channel (intermittent streambed) in the western-most gulch on the property. In addition, secondary *auwai*-like water diversion rock mounds run above the streambed in some areas, and perpendicular to the streambed, diverting water into the stream, in other areas.

**Feature A** –This feature consists of stream bank retaining walls, intact and faced in only a few portions of the lower (northern section) of the stream. Each intact section measures about 1-2 m. in length, and consists of small boulders stacked three to four courses high varying in height between 0.5m and 1m. The survey of this gulch began just above its 30 foot cliff that drops down toward Kalihi Stream. About 50-75m above this cliff along the gulch, the stream becomes thick with *hau*. Following the present scope of work, the archaeologists could not proceed further along the stream due to the vegetal restrictions. Additional stream bank retaining walls are likely to exist throughout the *hau* area, and may be well-preserved.

**Feature B** –This feature consists of two parallel stone walls running perpendicular to the main stream channel. The walls are 3-4 m apart and extend up the stream bank hillside for 2-3 m. A ditch without stone lining or walls extends for another 10m up the hillside from the end point of the walls. This feature appears to be an *auwai*-type structure diverting or channeling water off the hillside ditch into the main streambed.

**Feature C** –Further up the ditch on the east side, across from a large banyan tree is the beginning of a linear rock mound. It runs parallel to the gulch (SE/NW) about 2m to the west of the streambed and measures 7m in length. The mound is 0.8 m wide and less than 0.5 m in height. It consists of small boulders measuring 20-30 cm in diameter. This is considered an *auwai*-type feature that probably served to keep water within the streambed path during heavy floods.

**Feature D** –This feature begins about 10m further E/SE up the streambed from Feature C. It consists of a low, mounded wall that begins about 1m above the stream on the NE side and extends for 3m further N/S, perpendicular to the streambed. A large tree is growing out of the middle of the feature. Again, its function appears to be associated with diverting water into the stream.

**Feature E** –Two meters further up the streambed from Feature D is Feature E, a free-standing mounded boulder wall consisting of small boulders that runs parallel to the gulch. At this position, the streambed is shallow, and the mound appears to form one side of its wall. The wall is about 0.8m wide and 0.5-0.8m in height. At one time, the wall may have been bi-faced, core-filled, but at this time, no specific construction method could be identified. It extends for 10m into dense *hau* and appears to extend further, but the archaeologists could not investigate the area due to vegetal restrictions.



## *Site 2*

This refuse site is located on the ridge to the east of the western-most gulch (Site 1). The site appears to be in the vicinity of the proposed shelter/*halau* and hiking trail area for the Kalihi Valley Nature Park (see Figure 6). On the ridge, the terrain flattens. A refuse site, covering an area measuring 5m in diameter, is located on this level area and the top portion of the western slope of the ridge. A number of glass bottles and jars of clear and brown glass were encountered. Dates could not be determined for these bottles in the field. No samples were collected at this time.

## *Site 3*

This site consists of features associated with the nursery on the upper section of the property. The features include a house, a driveway and other road cuts, a number of large sheds and storage facilities, and a small abandoned equipment shed and metal tank located along the lower portion of the old easement driveway. The nursery residence is a utility style home built on the top of the bank along the middle gulch. Reinforcement walls made of cinderblocks and stones line the hillside on which the house is located. The house itself has plywood walls, and corrugated roofing. Its construction appears to be modern, although it may have been standing before 1950 and has since been modified. Behind the house is a large area that appears to have been mechanically leveled. Three large storage facilities in this level area contain old cars, piping, wood, planting pots, and other refuse once utilized by the nursery. Behind the house about 50m south is a small Japanese tea house associated with the Buddhist monastery adjacent to the subject property. It is abandoned and in deteriorating condition. An old driveway ran from Kalihi Street up to the nursery grounds and small portions of asphalt remain along this pathway today. Along the lower part of this roadway near Kalihi Street is a dilapidated equipment shed containing electrical boxes, metal debris, watering cans, wood, etc. A metal tank stands next to the shed. It is rusted through in many places, and it stands about 3m high with a diameter of about 1.5m. According to informant testimony, the nursery was constructed just before or around 1950, abandoned for a while, then re-used until the early 1980's. Therefore, while some of these sites associated with the nursery are historic, many have been added or modified in modern times and will not need to be considered further in this survey.

## *Site 4*

This site extends throughout the gulch and intermittent streambed that runs along the nursery's driveway easement. The site consists of stream bank retaining walls, a number of stone mounds both free-standing and contoured to the slope, a few water diversion walls/terraces or dams, and four major agricultural terraces. There appears to have been significant amounts of soil deposited in this low-lying gulch area between two ridges.

**Feature A** (see Figure A1) –This feature consists of the stream bank retaining walls that run along the gulch. The facing does not occur continuously along the total length of the feature. It occurs on both sides of the gulch in some areas, and only on one side in other portions. The first intact facing on the stream bank walls occurs about 30-40m south of where a stream branches to the east of the main stream. This facing runs for about 4m on one side of the bank, then becomes tumbled. About 30m further south up the stream, the ditch is lined on one side with small to medium boulders 30-70cm in diameter, stacked five courses high. About 13m further south, the stream becomes lined with retaining walls on either side. The gulch is about 1m wide at this point. 20m to the south is Feature B (a stone mound). The streambed continues for another 30-50m then ends in four large agricultural terraces. Above the terraces the streambed is defined again and is lined on the west side. Here the wall that lines the ditch appears to have been free-standing at one time, but soil has accumulated on the back side making it appear to be a retaining wall built into the stream bank. This portion of the wall can be seen extending for 20m further south along the streambed. At this point, the vegetation became impenetrable, and following the present scope of work, the archaeologists did not pursue this feature further.

**Feature B** (see Figure A2) –This feature is a stone mound contoured to a small slope. This is the first of four rock mounds that run east up the valley alongside the streambed. At this location the stream is oriented 60/240, or almost E/W. Feature B is faced on the west side, standing four to five courses high. The exterior height from the existing surface is 1m on the west side. The mound has three sides, with a width (east to west) of 3.4m. The surface of the mound is fairly level and rock-filled. Some of the mound appears to be incorporated into natural outcrop. The function of these mounds is indeterminate at this time.

**Feature C** (see Figure A2) –This feature is a rock mound with no faced walls. Its dimensions are 2.1m (N/S) by 1.6m (E/W). It is 0.7m in height and is composed of sub-angular cobbles and small boulders and one natural rock outcrop. It is located about 3.2m east of Feature B.

**Feature D** –This rock mound was once formally stacked on one side, but is mostly tumbled now. Some natural outcrop was also incorporated into the feature. It measures 4m (N/S) by 3.5m (E/W) with an exterior height on the north of 1.1m. The feature, composed of large and small boulders, is cobble-filled. It lies 3.5m east of Feature C.

**Feature E** –This small stone alignment runs parallel to the streambed further south of Feature B. It is partially buried in soil and lines a small rise, running for 2-3m.

**Feature F** –This feature consists of two parts, a terrace or stone-retained slope and a mound built on top of the western end of this terrace. The total length of the terrace portion is 15m and runs SE/NW along the streambed. The exterior height of the terrace on the southeastern end is 0.76m and on the northwest is 1.1m. On the northwest end, another smaller wall runs parallel to the terrace and appears to be of the same construction period. The terracing and parallel wall is made of large and medium

boulders and large cobbles. Between the two walls at the northwestern end is a mounded area that extends another 0.4 m on top of the terrace. The width is about 1.5m between the two walls and it runs for 3.5m, the length of the smaller wall. The mound appears to be part of a later construction period, and it consists of loosely piled cobbles that fill the area between the two walls.

**Feature G** –This feature serves as a small dam for water diversion purposes. It was constructed between two forks in the streambed. It appears to have been faced, and stones are still partially stacked 5-6 courses high. The height is 1m and the width is 4m by 2.5m.

**Feature H** (see Figure A3) –This feature is the first of four agricultural terraces. It runs west to east for 11m and ranges in exterior height from 1 to 1.2m. The east portion of the wall is built up 0.6 m above the surface on the interior of the terrace. This built-up portion extends for 3m. The terrace wall is five to six courses high and composed of large cobbles, small boulders, and boulders. The west end of the wall is tumbled, but at one time, it probably extended to the bank of the low area in which it lies. A large banyan tree grows out of the middle area of the terrace.

**Feature I** (see Figure A4) –12.2m south of Feature H is the second agricultural terrace, Feature I, which runs 250/70 for 15.5m. The exterior height is 1.1-1.2m on the eastern end and 1.5m on the western portion. This terrace is similar in construction to Feature H but is entirely contoured to the slope and therefore has no interior height. A large banyan tree grows adjacent to this terrace as well.

**Feature J** –This terrace lies 8.5m to the south of Feature I. It is considerably shorter in wall height than the previous two. It is 9m long and runs 250/70. The exterior height on the eastern end is 0.5m. A banyan tree grows at the western end of this terrace.

**Feature K** –The fourth terrace is 8.6m to the south of Feature J. It is 12m long and oriented at a bearing of 210/30. On the eastern end, the exterior height is .9m.

**Feature L** (see Figure A5) –Further south of the last terrace the gulch is lined again. To the east of the gulch are four mounds and a terrace/ stone-retained slope running along a line oriented N/S. Feature L is the northern-most stone mound. It is partially contoured to the slope with an uphill height of 0.26m and a down slope (exterior) height of 0.97m. It measures 1.7m E/W by 1m N/S. The mound consists of small cobbles and small boulders stacked five courses high on the down slope (western end).

**Feature M** –Feature M is 3m south of Feature L. It measures 1.8m wide on its E/W axis and 2.6m N/S. It is contoured to the slope, and on the down slope end, the height (exterior) is 1.3m. It consists of cobbles and small boulders but some large boulders and bedrock are also incorporated into the structure.

**Feature N** –2m further southeast of Feature M lies Feature N, a stone mound, mostly tumbled. It measures 2.2m E/W and 1.3m N/S with an exterior height on the down slope of 1.3m.

**Feature O** (see Figure A5) –This stone mound lies 2m south of Feature N. This is the only mound that is not contoured to the slope. It is a rectangular mound measuring 2.5m (N/S) by 1.5m (E/W). The height is 1.1m and the structure consists of small to medium sub-angular boulders stacked four courses high. The mound is cobble filled.

**Feature P** (see Figure A5) –This feature, beginning 2.6m south of Feature O, first appeared to be a terrace or stone-retained slope because it was contoured to the slope, however, on closer examination, it seemed to be a typical core-filled wall of which the back side had been filled in with soil deposits. The structure incorporates some natural outcrop. It measures 5.8m long and runs N/S, parallel to the wall that lines the streambed. It consists of large cobble fill on top and small-large boulders stacked 5-6 courses high, forming the wall. The exterior height measures 1.2m. The back side of the wall rises a little above the slope or fill, giving the structure an interior (upslope) height of .36m. The width of the wall is 1.2m.

#### *Site 5*

This site consists of features in the gulch and intermittent streambed that branches east off of the lower (northern) portion of the streambed containing Site 4. The main feature is the well-constructed stream bank retaining wall. Other associated features in the gulch area include a small terrace/stone alignment, a stone platform or possible habitation site, a stream bank retaining wall in a small branch off the main stream, and a small rock dam in the middle of the stream.

**Feature A** (see Figure A6) –This feature consists of stream bank retaining walls found throughout the gulch. Immediately after the stream branches east from Site 4, the streambed is intermittently faced with stones. Many large boulders fill the ditch. The lining occurs on the south side most frequently up to a large banyan growing in the stream. Further east of the banyan, the north side is well-lined reaching 6 courses high. The streambed widens at this point. 10m east of the banyan, the stream narrows again about 1-1.2m in width and both sides become well-lined. This narrow portion stretches for about 12m east until it reaches a second large banyan tree. For the length of the narrow portion of the streambed, the retaining walls are 5-8 courses high and measure 1.6-1.8m above the base of the streambed. The walls consist of small and large boulders. The bottom of the streambed is not lined, although it is filled with tumbled boulders. After the second banyan tree, the streambed splits and the deep, well-preserved retaining walls stop.

**Feature B** –This feature is a small terrace or stone alignment that lies to the north of the streambed containing Feature A. It begins just after the stream branches to the east. It is 3.4m in length running N/S and its width (E/W) is 0.5m. The feature is contoured to the

slope and has an exterior height of 0.4m. It is single stacked and consists of a few large boulders and cobbles.

**Feature C** –Feature C, a rectangular rock platform, lies 8m to the north of the streambed just east of Feature B. The southwest side of the feature is a terrace wall with corners on either side. The platform surface area formed by the terrace is rock-filled in some areas. This appears to be a possible habitation site. The main terrace wall is 25m long. On the SE side, a stone alignment extends to the northeast forming a corner. The corner has an exterior height of 1.1m. The alignment extending from the corner measures about 6m. A similar wall measuring 8m extends northeast from the northwest corner. The northwest corner has an exterior height of 0.8m. In the northeast, corner on the northern end of the structure, a small portion of the back corner is intact as a small wall. Its height is 0.8-0.9m and it stretches 2m SE/NW and 1.4m SW/NE.

**Feature D** –This feature consists of tumbled stream bank retaining walls along the north branch of the intermittent stream. The stream branches east of the second large banyan tree and the deep, lined ditch (Feature A). On this branch, the streambed is shallow. The purpose of its lined walls may have been to direct the water in this branch into the deep, well lined portion of the stream that begins at the banyan tree. The most well-stacked portion of the wall stretches 3.5m and has a height of 0.7m. Further east, the stream becomes lined on both sides, but it is tumbled. One area of the wall is mounded, measuring 0.8-1m wide and filled with cobble and small boulders. This portion of the wall appears to be at the beginning of the stream branch where the water begins to be channeled downward. Further east of this point the stream channel ends and only a level gulch area remains.

**Feature E** –This feature occurs on the south branch of the stream. This streambed/ditch extends southeast from the second banyan tree. It is not stone lined, but its soil walls are deeply cut. About 30m up the stream branch, a rock pile across the stream forms a small dam. The rock pile is tumbled with no specific construction. It is 2m long and 1.2m wide. Modern debris (plastic toys, metal etc.) is caught in the stones of the dam. Many large palm trees are located in this level area around the streambed.

#### *Site 6 (see Figure A7)*

Site 7 is the main historic house built in the 1930's on the lower central portion of the property, just off Kalihi Street. Building plans are available from the descendants of the original owners (contact Toni Alatan). The house faces Kalihi Street, and the backyard is a cement paved patio area. The back portion of the house on the western end appears to be a newer addition. This portion has a corrugated metal roof, while the rest of the house has tar paper and shingles on a gabled roof. The house is constructed with cinder blocks. Inside the main part of the house, the walls are plaster/sheetrock, the ceiling is an open beam style, and the floor is covered with worn linoleum. A small covered patio outside has a tile floor and a large outdoor oven/fireplace is built into the wall using the same chimney as the indoor fireplace. The back yard is paved with cement

blocks and a moss rock wall that stands nearly 10 feet in height surrounds the backyard. A small rock wall, 1.5 feet in height, runs along the taller wall creating a small koi pond with flower beds on either side. A small drainage channel was built into the cement patio that drained out to the side of the house. A storage shed was built on the western side and on the southwest, a detached studio building was added in the late 1950's. The studio was built with cement tile and has many windows facing east. One wall was built with tongue and groove wood paneling and inside is a small loft. It has open beam construction and the beams are 4x6in. The roof is layered with corrugated metal on top of plywood. The house is now in various stages of deteriorating condition.

### Site 7

This site runs along the large gulch that cuts through the middle of the property up to the nursery and nursery house. Extensive stream bank retaining walls and freestanding walls line the intermittent streambed or divert water like an *auwai* within this gulch.

**Feature A** (see Figure A8) –Feature A consists of the stream bank retaining walls and freestanding wall systems that line the streambed in this gulch. The first remnants of stone lining appear about 50m south from the beginning of the streambed. Here, the ditch is 5-6m wide and small remnants of retaining walls can be seen off and on along both sides. They are constructed with small and medium boulders and some cobbles. The first of these sections occurs on the eastern bank and stretches for 2.8m. It stands six courses high, amounting to 1.1m in height. On the western bank, another retaining wall segment extends for about 4-5m, then a wall on the eastern bank resumes for about 9m. Across from this portion is what appears to be a freestanding wall, crudely bi-faced, core-filled, diverting the water between it and the eastern lined-portion. The backside of this wall appears to have been built into the earth or against the wall of the stream at one time, but the water has since changed directions and washed away all the earth on the backside exposing the wall's construction. Above this portion, the stream bank retaining wall (single stacked lining) continues intermittently on either side, and in portions the wall is thicker, again appearing to have been a regularly constructed bi-faced wall at one time. The lining reaches a large banyan tree growing in the middle of the stream. Here the lining is 8-9 courses high along the deep bank of the stream. Above this is a tumbled, bi-faced, core-filled wall extending further up along the stream. The nursery house is directly west above the hillside from this area. Extending further up the streambed, the lining continues and a wide, solid, core-filled wall about 1m wide with small and medium boulder construction follows the stream, appearing to have served as an *auwai*, directing water downward. In some portions, it appears that soil has filled in on the outside of the wall making it appear to be lining a ditch rather than a free-standing wall. About 100m up from the nursery house, the stream splits, and the wide wall continues on the northeast branch. In certain portions it is nearly 2m wide. This wall continues 200m up the streambed from the nursery house. Archaeological inspection stopped here at the end of the Phase I project area (700 ft. contour line). The wall diverting the water continues further upward.

**Feature B** –This low mounded wall feature runs parallel to the gulch (N/S), beginning where the first stone lining was identified. The wall, situated on top of a low rise, is about 5-6 m to the east of the streambed. It appears to divide a large flat area. It runs for 38m, ending near a large banyan tree. No formal construction is easily apparent because the wall was tumbled, but it may have once been bi-faced, core-filled. Its width varied from 1.2-1.4m and its height on the west side was 0.5m, while on the east it was 0.3m.

### *Site 8*

This site consists of a small dilapidated house, a stone-retained slope, and, located about 25m to the southeast of the house, a small rectangular pump house, a well, and a stream bank retaining wall made of cement block, stone and mortar. This well and pump house was utilized in the early 1900's to collect water from a spring along the stream. The spring is located at the end of a small gulch.

**Feature A** –This stone-retained slope was located about 20m to the northeast of the house. The slope was reinforced with a stone wall, 20m in length.

**Feature B** –This dilapidated house was surrounded by black plastic, plastic planting pots, and white 1-2in. piping. The structure was collapsed. Wood, glass, and plastic corrugated roofing could be seen. In the back of the structure, the old foundation was visible, constructed with cement blocks. An interview with a former resident of house Site 6, revealed that this house had originally been located in a different position. It had been moved in the middle part of the century to its present location to avoid damage from an old banyan tree. The vegetation around the house consisted of plants such as coconut, taro, and ornamental vines.

**Feature C** (see Figure A9) –This feature is a rectangular pump house. It measures 5m by 3m and is constructed of cement block. It is located about 25m southeast of Feature B.

**Feature D** –This well feature is located on the southwest side of the pump house. It is circular, with a diameter of about 2m, and is constructed of cement blocks.

**Feature E** (see Figures A9, A10) –This feature consists of a modern stream bank retaining wall, different in construction from the others seen in the ditches discussed above. The pump house and well sit on the western bank of the stream. Beginning at the pump house and extending down the streambed, the slope is cement lined for about 2m and then lined with stones and mortar for about 3m. Just above (to the south) of the pump house, in the opposite direction, a channel has been cut for the water to flow through. The beginning of the channel appears to be cut into bedrock, and then it becomes lined with cement brick hollow tile. This stretches for 3m southeast of the site.

*Site 9* (see Figure A11)

This small marker or *ahu* is located halfway up the western hillside near the end of the gulch containing Site 8. The site consists of a large boulder with smaller stones piled on top. The natural outcrop/ boulder measures 2.5m by 3m, with a height of 1.5m on the down slope portion (north side). The south side is contoured to the slope. The rocks piled on top of the boulder reach a height of 0.65m, stacked three high in one portion. The rocks include medium size boulders, small boulders and some cobbles. In all, about 12 rocks had been placed on top of the boulder.

*Site 10* (see Figures A12, A13)

This site consists of stream bank retaining walls in the eastern-most gulch that runs along the far eastern boundary of the property. The upper portion of this gulch (the southern end) consists of tumbled portions of retaining walls, and small mounds or dams associated with water diversion in the intermittent streambed. About 40m downstream from the beginning of these small features, the stream becomes well-lined. The stream is faced intermittently on either side as it curves around this area. The average height of the walls from the base of the streambed is 0.7m. First, the retaining wall runs for 12m on the southwest side, then the ditch becomes faced on both sides. The walls extend off and on for another 30-40m before the stream runs off the property boundary.

*Site 11*

This site consists of two historic refuse areas and one small stone alignment associated with a small camp or living site. Informant testimony explained that a small shack had been located in the area. A man had lived there for a time in the '20's or '30's making bootleg liquor.

**Feature A** (see Figure A14) –This refuse site was located to the west of the streambed, probably most of which is off the subject property. A rusted door knob, 2 square-cut stones, metal pans, unused cement bags, condiment jars, Pepsi and Budweiser bottles and cans, many beer (Nippon brewery and others), soda, and wine bottles, milk bottles, sake bottles, rice bowl fragments, possible ink bottles, and a gold-gilded mug (painted with "...Miles" and inscribed with "Made in Germany") were found in the 30m by 30m area that contained the most refuse. Across the stream from the site (off the subject property) were a number of exotic plants indicating that a living site had probably been in the area.

**Feature B** –This small stone alignment was located halfway up the slope of the hill to the west of Feature A. The stone alignment outlines a small level area. It consists of three large boulders lining an area that measures 2m.

**Feature C** –On top of the hill above Feature B was a flat area lined with large trees containing more refuse. It appears that a driveway had once followed the tree line, but no



evidence of a house or shack could be found in the area. A large pit had been dug between two of the trees, presumably by pot hunters, and a number of glass bottles and rice bowl fragments surrounded the hole. Around the area, broken window pane glass, milk, medicine, and beer bottles, pieces of croc pots, the bottom of a vase (inscribed with "R. Samish, 211 Post St. San Francisco"), a metal pitcher (inscribed with "Viko-the popular aluminum"), the inside of a clock, and other debris were encountered.

## Section 5.2: Discussion of Archaeological Findings

Given the limited scope of work for the subject property located in Kalihi Valley, few conclusions can be made at this time. This Assessment was intended to identify sites and determine their general location on the property. Future work will complete an Inventory Level Survey and provide the information necessary to make evaluations of the sites and assign SIHP site numbers. Such additional work will need to include detailed feature plan maps, subsurface testing, and possibly radiocarbon dating in order to determine age and function. After the 1980 reconnaissance survey completed by Connolly on the subject property, SIHP site number 3980 was assigned to the entire agricultural complex of stone-lined ditches, terraces, and mounds. Additional work will also help determine how many component parts make up this previously designated site, as well as identify other sites that represent different time periods. In the meantime, informant testimony and previous archaeology in the area can provide some suggestions for the construction, time period, and function of the features that should be investigated in future document research, mapping, and subsurface testing.

The sites on the property can be divided into those associated with living and work activities on the property in the last 100 years, and those sites, such as the stone-lined retaining walls and terraces, whose age, intended function, and builders are unknown. According to informant testimony, almost all sites on the property were built before 1950 and therefore will be considered in this report. However, some have been modified since that time. The flora of the landscape has changed considerably in the last 100 years and this has destroyed some sites and preserved others. In addition, large amounts of colluvial and alluvial soil deposits have filled the gulches and changed the topography, possibly burying or exposing sites.

An interview was conducted with Ms. Toni Alatan, a former resident of the house on the lower portion of the subject property (Site 6) and granddaughter of the original owners of the house. Ms. Alatan mentioned that her grandfather had mined soil in the back of the property creating many of the bulldozer cuts and small cliffs that can be seen today. In addition, she recalled a small shack in the area of Site 11 where a bootlegger was living in the early part of the century. The refuse scatters of Site 11 most likely belong to this period. Ms. Alatan recalls extensive mechanical excavation and leveling occurring around the nursery property on the upper portion of the subject area. Also, she explained the pump house and well (Site 8) that her family had used to catch water from a spring. Although this information was helpful regarding the sites within the last 100 years, Ms. Alatan did not know the origin of the retaining walls or terraces. She remembered hearing that Chinese families had lived and farmed in that area of the Valley around the turn of the century. One possibility may be that the Chinese had a part in constructing or modifying the stream bank retention walls. However, the most likely scenario is that some or all of them are related to pre-contact Hawaiian farming activities.

In 1988, Aki Sinoto et al. conducted an archaeological survey on the Board of Water Supply land across Kalihi Street and just to the northeast of the current subject property. In this survey, a number of stone-retained slopes and stream bank retaining

walls, similar to those described above, were encountered. Time was a restraint for Sinoto et al., and therefore, extensive research was not carried out to determine their age or function. Sinoto et al. (1988: 5) write:

Due to time constraints, document searches and inquiries conducted at various state and city agencies, libraries, and archives were terminated before the exact nature and origin of the structures could be determined. However, the placement and characteristics of the features indicate historic/modern period erosional control functions most likely related to watershed maintenance, forestation, siltation control, or roadways.

Sinoto et al. speculated that the stream bank retaining walls may have been “related to the old Kalihi Street construction” (*Ibid.*: 4). This is another possible explanation for the majority of the features encountered on the subject property. However, before any conclusions can be made, additional research, mapping, subsurface testing and dating will need to be carried out for the sites discussed above.

## **Section 6: Recommendations and Evaluations of Site Significance**

Due to the limited scope of work, ACP will defer the assignment of significance categories until function and age of sites can be determined through subsurface testing, mapping, and dating. It is the desire of the landowner to preserve most of the sites on the property, and, given the present need for additional information, ACP recommends that the sites are preserved until further research can be conducted.

ACP anticipates that the majority of the gulch sites, including the stream bank retaining walls, will be considered significant under Criterion C (Site embodies the distinctive characteristics of a type, period, or method of construction, is the work of a master, possesses high artistic values, or represents a significant and distinguishable entity) and D (site has yielded, or is likely to yield, information important in prehistory or history) of the National Register of Historic Places criteria. However, further archaeological work is recommended for all sites in the form of plan mapping, subsurface testing and document research and, as mentioned above, the assignment of any significance designations will be deferred until such research has been carried out.

## **Conclusion**

The first phase of an Archaeological Inventory Survey has been conducted on a property located in Kalihi Ahupua'a, Kona District, on the Island of O'ahu. The current investigations, limited by the guidelines for the scope of work for Phase I of the Inventory Survey, have identified 11 sites and approximated their locations on a topographic map. At the present time, site significance evaluations have not been determined and the assignment of such designations has been deferred until further work is carried out. All sites are recommended for preservation until further work is conducted in the form of plan maps, subsurface testing, and dating. Such work will provide the information necessary to evaluate the sites' significance, functions, and relationships.

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**APPENDIX A:  
Feature Photographs**



Figure A1: Photograph of Temporary Site 4, Feature A



Facing south

Figure A2: Photographs of Temporary Site 4, Features B & C



Feature B: Facing south



Feature C: Facing east

Figure A3: Photograph of Temporary Site 4, Feature H



Facing east

Figure A4: Photographs of Temporary Site 4, Feature I



Facing northwest



Facing southeast

Figure A5: Photographs of Temporary Site 4, Features L, O, & P



Feature L: Facing north



Features O & P (in distance): Facing south

Figure A6: Photograph of Temporary Site 5, Feature A



Facing east

Figure A7: Photographs of Temporary Site 6



Facing northwest



Facing southeast

Figure A8: Photographs of Temporary Site 7, Feature A



Facing south



Facing east



Figure A9: Photograph of Temporary Site 8, Features C & E



Facing southeast

Figure A10: Photograph of Temporary Site 8, Feature E continued



Facing west

Figure A11: Photograph of Temporary Site 9



Facing south

Figure A12: Photograph of Temporary Site 10



Facing northwest

Figure A13: Photograph of Temporary Site 10



Facing southeast

Figure A14: Photographs of Temporary Site 11, Feature A



**APPENDIX B:**  
**Interview Notes from Interview with Toni Alatan, June 27<sup>th</sup>,**  
**2005**

*Interview with Ms. Toni Alatan*

*6/27/05*

*Pupukea Residence*

*Interview conducted by Joseph Kennedy and Elena Kouneski*

*Interview notes:*

Above the house was a flat area her grandfather used as an orchard. There also used to be road that went all the way in the back, gravel and dirt.

Her grandfather cut right through the mountain mining soil. Through part of the hip, on the other side there is a huge area where it is all cut out. If you face the mountain, it is in the corner.

Her grandmother was *hanai*, and her *hanai* bought the land at public auction Her grandmother's *hanai* owned it. Her two daughters inherited it from their mother.

Ms. Alatan wonders where the original old estate was on the property that existed when her grandmother bought it at public action. It had been a big house. Remnants of its pad are probably still there.

The main residence still existing on the property was where her grandparents lived. Her grandfather built the adjacent studio to paint in. The backyard had ornamental gardens and ponds. The main house was a stucco house. Now the interior must be beat up. The adjacent studio must have been built in late 1950's. Her brother has all the appraisals and building plans. She has a box of photos that show what the area looked like before. Her grandfather did the original survey of the property and put it in land court.

The main house built by her grandparents was built in the 30's. All those houses in the area were built before or around the 1950's. The cottage is very old. She didn't know about the age of the house associated with nursery. She mentioned that Pierce might have redone it post-1950.

Behind the main residence there was a huge banyan tree. A house was under the banyan tree. The tree dropped some limbs and scared the tenants so she remembers that they picked the house up and moved it over to where it is now. The house is now collapsed; originally it had materials in it from very first house that they built there.

There was a well; it was a fiberglass tank. Four houses used it. A pump house was right by the well. The well was concrete, round. There was a natural spring there. She recalls that they couldn't use it. First it dried up, then when it had water in it, rat feces got in it. The man living in the back house got sick.



There were small walls over there where the well was. She thought they used to channel that water before. Her grandmother told her the well had been like a little pond. Those walls are under 100 years old.

The land was farmed up there and they used to channel water. Her grandmother told her the ones who farmed and channeled the water might have been Chinese. They probably got this property (her grandparents) around the turn of the century, early 1900's. It wasn't properly surveyed then. Chinese were probably there before that time.

She has pictures of the area in the 1920's. At that time it was a barren valley and you could see straight back all the way. One possibility she mentioned was that if it rained hard then, it may have been so strong that the lined channels' purpose really was to get the water out of the way.

Another possibility is that the Chinese or whoever came to farm upgraded a pre-existing system. She doesn't believe this, though, because she says that if streambeds were already dug out, the clay in the soil is so hard that the ditches would have stayed just like they were without retaining walls.

She disagrees with idea that the Kalihi Street construction was associated with the water channels. She believes the road was built fast just to access the water tunnels further in the valley

Hawaiians and some Portuguese families and Chinese were back there at turn of the century. She heard stories that they lived there but by that time they didn't farm, they had odd jobs and the land was changing hands fast after 1900. From her time she doesn't remember any agricultural work up there except for the nursery.

Further up Kalihi Street in watershed land, she has hiked and found platforms of stone, probably old habitation sites.

On the other side of the fence across Kalihi Street there used to be a driveway that came up to a shed. Her grandparents rented it out to somebody that was living there. He was a bootlegger. He was making 'okolehao. When her grandparents found out they got him out. The time period must have been during prohibition, during the depression, pre 1950.

In 1950 or just before, a Korean guy started the nursery, and then gave it up not long after. That parcel changed hands a lot. Finally Rudy Pacarro bought it. She explained that her family sold their adjacent property to Herbert Horita. The two new owners consolidated the parcels and gave them to the city.\*\*

The state condemned the property in 1949 or '50 and took what they wanted for watershed land.\*\*

\*\*According to Mr. Gary Gill, the land passed to the City and County of Honolulu through a condemnation purchase.

**APPENDIX C:**  
**State Parks Scope of Work Submitted to DLNR-SHPD**

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF STATE PARKS  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN NAKANO  
ACTING DEPUTY DIRECTOR - WATER


AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING

FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

MEMORANDUM

DATE: June 23, 2005

TO: Melanie Chinen, Administrator  
Historic Preservation Division

FROM: Daniel Quinn, Administrator   
Division of State Parks

SUBJECT: §6E-8, HRS, Compliance – Inventory Survey Determination and Request for  
Concurrence with Proposed Inventory Coverage, Kalihi Valley State Park  
Reserve  
Kalihi, Kona District, Oahu Island  
TMK: (1) 1-4-14: 01 & 26; 1-4-16: 03

The Board of Land and Natural Resources has approved the 20-year lease of the 99.65 acre Kalihi Valley State Park Reserve to the non-profit foundation Kokua Kalihi Valley (Comprehensive Family Services). The lease will allow Kokua Kalihi Valley (KKV) to develop, maintain, and operate public park facilities in the Park Reserve. While the final terms of this lease are still being negotiated, KKV has received grant funding to begin the natural and cultural resource studies needed to prepare the planning and regulatory documents required to develop its anticipated programs in the Park Reserve. The identification and treatment of historic properties on these State Park lands needs to be addressed during this process.

In accordance with section 13-275-5(b)(5), HAR, we request your concurrence that an archaeological inventory survey is needed for project planning purposes because historic properties are known to be present in the Park Reserve and could be affected by the proposed KKV programs. We also ask that you concur with our proposal to inventory less than 100% of the project's surface area [§13-275-4(d)] for the reasons given in the following discussion.

### Project Area and Description

The 99.65 acre Park Reserve is composed of three contiguous parcels located near the end of Kalihi Street (Figures 1 - 4). The three parcels lie on the eastern slope of the valley at approximately 650 to 1,450 feet above sea level. The terrain, formed primarily of alternating ridge and gully formations, rises gradually to about the 700 foot contour after which the slope becomes markedly steeper and forms the valley's eastern wall.

The KKV initiatives for the Park Reserve are being developed under its Active Living Program and focus primarily on park activities that encourage a healthier lifestyle for the residents of Kalihi and the public. Conceptual plans include the development of community gardens, walking paths and hiking trails, tent camping sites, public picnic areas, restoration of Hawaiian agricultural terraces, native tree reforestation, and a nature camp (Figure 5).

The proposed project area primarily encompasses that part of property, approximately 60 acres, that lies on the more gradually sloping portion of the Park Reserve below the 700 foot contour. An exception is a proposed hiking trail that would run up the face of the valley wall towards the summit ridge. A major portion of the 60-acre project area has been altered by previous land use activities. Before the property was transferred to the State in 1992, it was the site of two residences and extensive commercial nursery operations. Portions of the property were bulldozed, leveled, and excavated for use in these nursery operations. A number of jeep roads and a paved driveway once provided vehicular access to various sections of the property.

### Need for Archaeological Inventory Survey [§13-275-5(b)(5)]

Although much of the project area has been altered, the presence of archaeological sites in several areas justifies the need for an archaeological inventory survey. An archaeological reconnaissance survey<sup>1</sup> of the property conducted in 1980 located what the report's author considered to be a relatively intact agricultural complex of stone-faced terraces, stone-lined ditches or stream channels, and agricultural mounds. Several stone-faced terraces may have been used for residential purposes. These sites were concentrated in the central, lower section of the total property (Figure 6).

Subsequent field inspections by State Parks staff and individuals working with KKV have verified the existence of these features although the condition of some appears to have deteriorated since 1980. The field inspections also indicate that remnant sections of stone-lined stream channels are located in other parts of the property. In general, there is a higher probability of stone walled features and retaining walls adjacent to these stream channels. This distribution of agricultural complexes is consistent with historic-period descriptions that "there are numerous small areas that were developed in terraces" in upper Kalihi.<sup>2</sup>

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<sup>1</sup> Connolly, Robert D. 1980 *Archaeological Reconnaissance Survey at the Proposed Kalihi Valley Park Site (TMK:1-4-14: 01 and 26, 1-4-16: 03) Honolulu, Island of Oahu, Archaeological*. Report prepared by Research Associates for Department of Parks and Recreation, City and County of Honolulu.

<sup>2</sup> Sterling, E.P. and C.C. Summers. *Site of Oahu*. Honolulu, Bernice P. Bishop Museum Press, 1978:322.

### Proposed Archaeological Inventory Survey Coverage

KKV is in the process of initiating an archaeological inventory survey and has, in consultation with State Parks staff, identified a proposed "project area" to be covered by the archaeological inventory survey. We are proposing that the survey be limited to the lower portion of the Park Reserve, approximately a 60-acre, within which KKV program activities will occur (Figure 5). This essentially includes most the area below the 700 foot contour. Also included would be a 20-foot wide corridor defining the route of the proposed hiking trail that would be established up the valley's eastern face. Most of the area excluded from the survey is not suitable for park programs because it is steep, thickly vegetated, and difficult to access. In accordance with section 13-276-4(a), survey coverage of our defined project area will include visual inspection of the entire surface.

Our proposed survey strategy would not, however, constitute a 100% inventory of all archaeological sites identified within the project area because the level of documentation and test excavations required under §13-276-5(d)(4)(E) and (F) would not be undertaken in some specific cases. All of these cases include archaeological sites located along or adjacent to the stream channels that are covered by dense vegetation (e.g., hau thickets). We are requesting this exemption under section 13-275-4(d) primarily to avoid the extensive clearing of vegetation which would be needed to map these sites and conduct test excavations. In addition to being time consuming and expensive, clearing would expose these sites to potential disturbance by park users and erosion before steps could be taken to protect and stabilize them. KKV will be implementing its programs over an extended period of time as funds become available and we are uncomfortable leaving these sites vulnerable for extended or undetermined periods. Although these sites will not be mapped, they will be described as fully as possible and their location and spatial extent determined during the proposed survey.

We also believe this approach is appropriate because all of these sites, as is the case with most historic properties on State Parks lands, will be preserved and any mitigation work would focus on protecting or restoring them. KKV and State Parks are already committed to this form of mitigation regardless of the individual significance or integrity of these archaeological sites or their detailed characteristics. The information gathered during the proposed survey will be sufficient to ensure their avoidance during any park development or planning activities. These specific issues will be addressed in the inventory survey report.

We would appreciate your concurrence with our proposed survey strategies so that park planning can continue to progress. If you have any questions on our request, please call State Parks Archaeologists Holly McEldowney (587-0307) or Alan Carpenter (587-0291).

cc: Gary Gill, Active Living Coordinator, Kokua Kalihi Valley

Ms. Melanie Chinen  
June 23, 2005

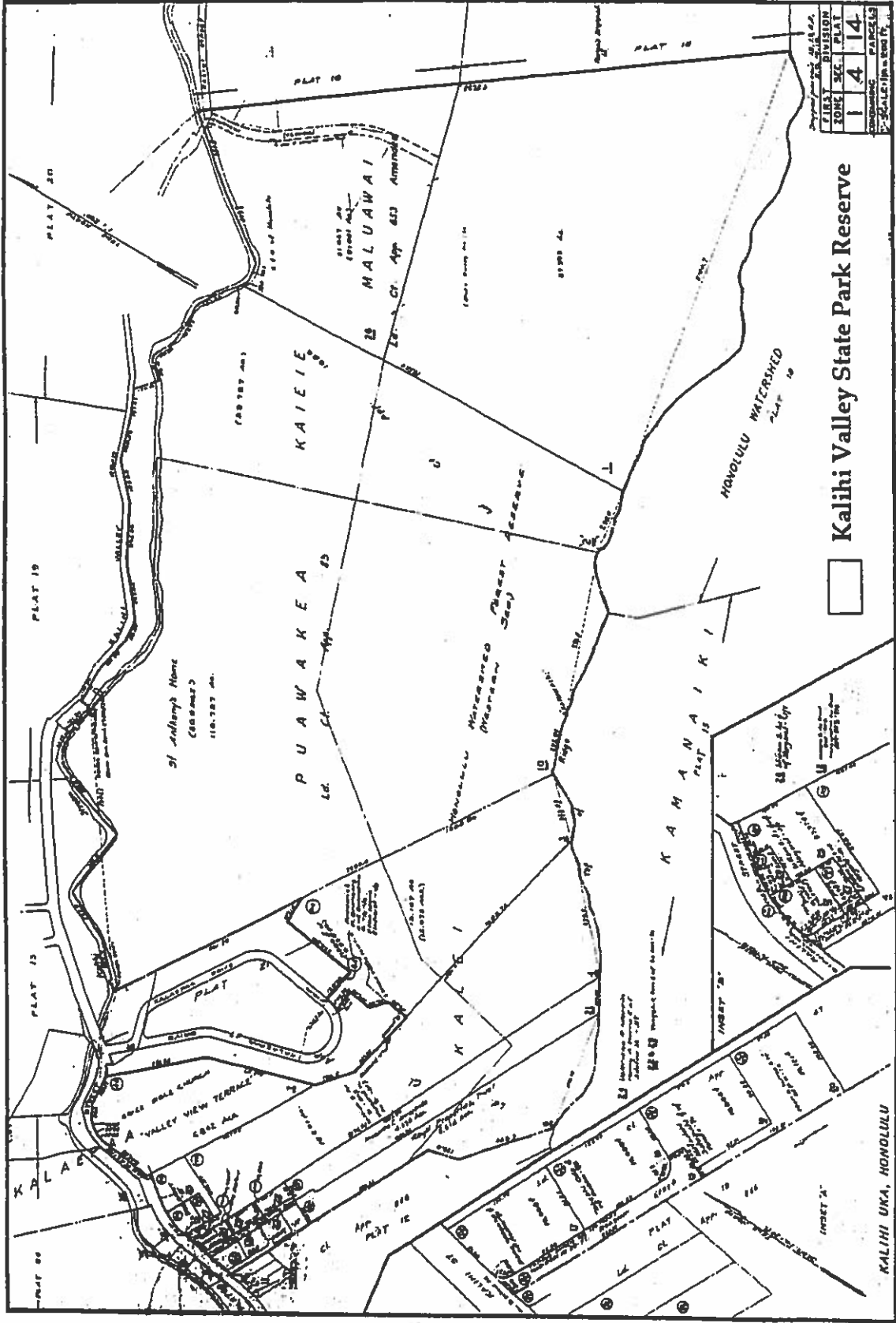


Figure 3. Location of Kalihi Valley State Park Reserve Parcels 1 and 26 on Real Property Plat Map [TMK: (1) 1-4-14: 01 & 26]

Ms. Melanie Chinen  
June 23, 2005

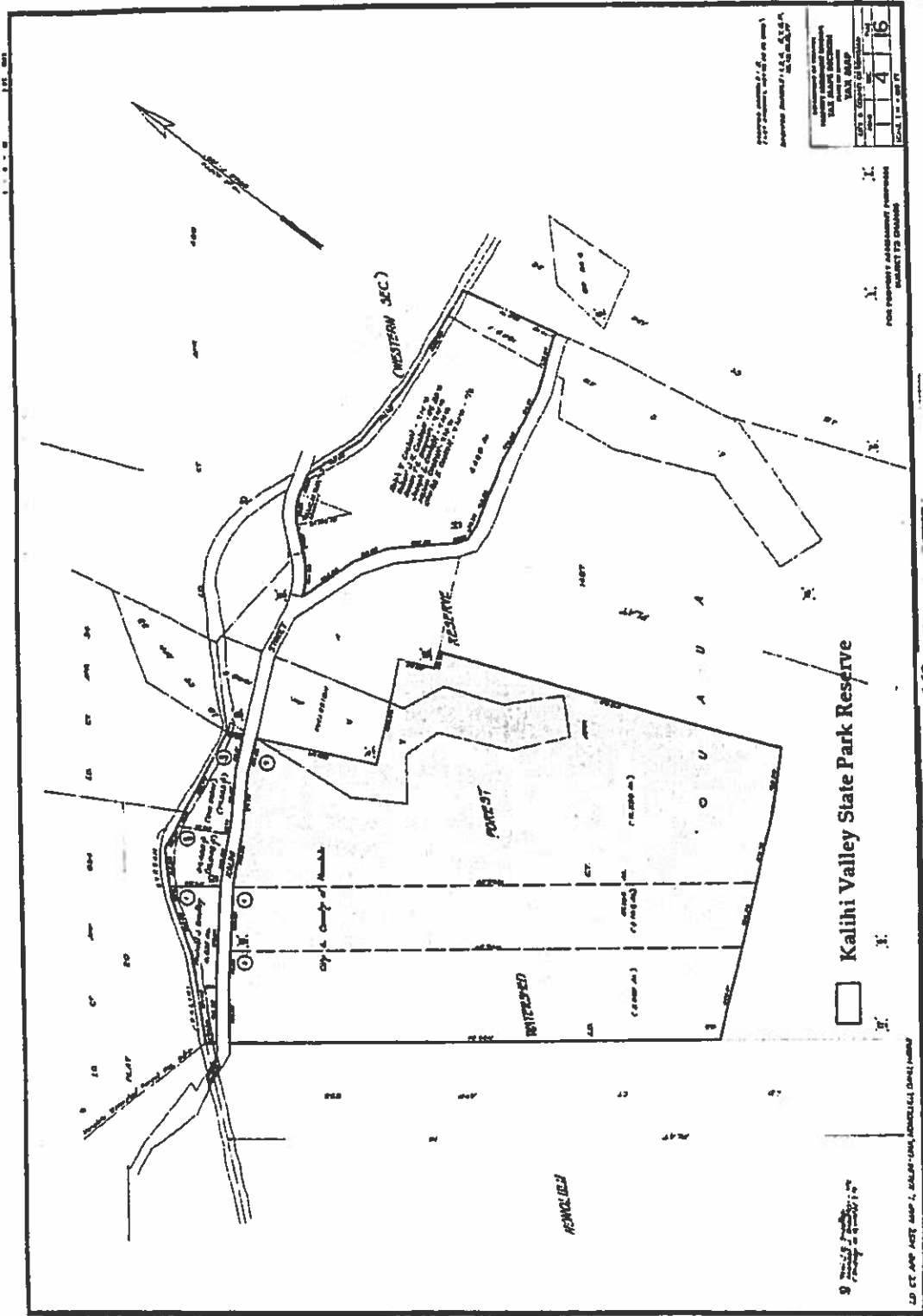


Figure 4. Location of Kalihi Valley State Park Reserve Parcel 3 on Real Property Plat Map [TMK: (1) 1-4-16: 03]





**Addendum to the 2005 Archaeological  
Assessment (Kouneski et al.) Kalihi  
Ahupua‘a, Kona Moku, O‘ahu Mokupuni,  
TMK 1-4-14:001, 1-4-14:026, and 1-4-  
16:003**



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**Addendum to the  
2005 Archaeological Assessment (Kouneski et al.)  
Kalihi Ahupua‘a, Kona Moku, O‘ahu Mokupuni,  
TMK: 1-4-14:001, 1-4-14:026, and 1-4-16:003**

---



*Ka ua ko‘i-lipilipi o Kalihi, The adze rain of Kalihi (Pukui 1983:169)*

*Prepared for:*  
Ho‘oulu ‘Āina  
Kōkua Kalihi Valley Comprehensive Family Services

*Prepared by:*



Momi Wheeler, B.S., Kanoa O‘Conner, M.A., Pua Pinto, M.A.,  
Kelley Uyeoka, M.A., and Kekuewa Kikilo, PhD

**August 2020**

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## INTRODUCTION

At the request of the Kōkua Kalihi Valley (KKV) Comprehensive Family Services land-based community health care center, Ho‘oulu ‘Āina (HĀ), Nohopapa Hawai‘i, LLC has prepared this Addendum to the 2005 Archaeological Assessment (Kouneski et.al) in the ahupua‘a of Kalihi, Kona Moku, O‘ahu Mokupuni, TMK: 1-4-14:001, 026 and 1-4-16:003. HĀ, the Kalihi Valley Nature Preserve, is a 99.65-acre of land on two ‘ili ‘āina of Maluwai and ‘Ouaua in the north central ahupua‘a of Kalihi, more specifically, Kalihi Valley also known as Kalihi Uka or by its older name, Kalihiliholaumiha (Figures 1-4).

The primary objective of this addendum is to integrate all available previous cultural, historical and archaeological data about this wahi pana, Kalihi Uka. In addition to including ethnohistorical research, this document is also based on the previous oral history of knowledgeable Native Hawaiians.

## Background

Operating since 2005, Ho‘oulu ‘Āina (HĀ) is both a program and a non-profit organization of Kōkua Kalihi Valley Comprehensive Family Services (KKV). It has “worked to restore a healthier balance between the native and invasive plants of both upland and lowland forest, removed tons of metal and abandoned junk and equipment, started restoration work on the agricultural terraces in Maluwai, and restored the residential structures to allow for community access and educational programming so that youth and other volunteers can engage in multi-day programs that support community-based forestry.” (Forest Stewardship Plan 2012:6) The property stretches from the center of Kalihi Stream (500 feet above mean sea level [AMSL]) to the top of Kamaiki Ridge (1,320 – 1,460 feet AMSL). Access to the HĀ site begins just past the wooden bridge at the mauka end of Kalihi Street. The 2006 Environmental Assessment (2006: 3-5) breaks down the designated zoning of the HĀ site:

The fee owner is the State of Hawai‘i, Department of Land and Natural Resources (DLNR), State Parks Division. The portion of the site nearest to Kalihi Stream (about 42 acres) is designated as Urban by the State of Hawai‘i (TMK 1-4-14:026, 1-4-16:003). Approximately 57 acres of up-slope land nearest the crest of Kamaiki Ridge are designated as Conservation (TMK: 1-4-14:001) by the State of Hawai‘i and therefore more tightly regulated. The City of Honolulu zoning of the site is General Preservation (P-2) for the two parcels nearest the stream (TMK 1-4-14:026, 1-4-16:003) and Restricted Preservation (P-1) for the upslope parcel (TMK: 1-4-14:001). A Conservation District Use Permit allows for limited activities in the conservation areas.

In response to community demand for ‘āina-based education and access to resources, HĀ recognized the importance of becoming more financially self-sufficient and the need to develop appropriate facilities and programs: “At the core of HĀ work is the organizational mission to serve as a welcoming place of refuge where people of all cultures sustain and propagate the connections between the health of the land and the health of the people. As the community works together to restore the ‘āina, they too are healed.” (HĀ Master Plan 2013:5) The HĀ 2013 Master Plan was a comprehensive planning process created from previous reports such as the 2005 Cultural Impact Assessment, the 2006 Environmental Assessment, the 2010 Sustainable Development and Work Plan, and the 2012 Forest Stewardship Plan: “The purpose is to guide program development, build a common understanding amongst staff, board members, and stakeholders to identify facilities/infrastructure priorities and financing strategies over the next 20 years.” (HĀ Master Plan 2013:6)

## Environmental Setting

The environmental setting provides a brief overview of the natural and man-made environment of the current project area and examines its location, geography, topography, climate (rain and wind), and native and non-native vegetation.

The Koa 'Āina, Forest Stewardship Plan (2013:5-9, 12) describes HĀ environmental setting in more detail:

This location has cultural, social, and historical significance for the community of Kalihi, and of all Hawai'i, as Hawaiian tradition places the home of Papahānaumoku (Earth Mother) and Wākea (Sky Father) at Kilohana Peak in the back of Kalihi Valley. Travelers in ancient times would have passed through the property on pilgrimages to Kilohana to honor these cosmological ancestors.

Today, the site is very near urban Honolulu, which makes it ideal for people from all walks to access to learn about and participate in native forestry and watershed protection. Directly makai of the site lie private residences on either side of Kalihi Street up unto the property itself, but mauka of the site remains undeveloped watershed and forestland.

At the inception of the project, the 100-acre (99.65-acres) site included two residential structures, the remains of facilities from a defunct nursery operation, and many ancient agricultural terraces. The lower elevation of the site was covered by introduced species (i.e. *albizia Falcataria moluccana*) while some native plants (i.e. 'ōhi'a *Metrosideros polymorpha*, koa *Acacia koa*, 'ie'ie *Freycinetia arborea*) remain nearer the Kamanaiki Ridge summit. Reflecting the long history of degradation, parts of the property remained littered with old, rusting abandoned vehicles, car parts, trash, and nursery equipment.

Since 2006, Ho'oulu 'Āina, Kōkua Kalihi Valley Comprehensive Family Services (HĀ/KKV) has worked to restore a healthier balance between the native and invasive plants of both upland and lowland forest, removed tons of metal and abandoned junk and equipment, started restoration work on the agricultural terraces in Maluwai, and restored the residential structures to allow for community access and education programming so that youth and other volunteers can engage in multi-day programs that support community-based forestry.

The rain of the valley is called Ko'ilipilipi, named 'sharp adze' for its cold and constant presence. Managing the hydrology of the site requires much attention, as the rain over years can tend to carve away at the soil and erode the hillsides. Portions of ancient, stone-line irrigation systems remain intact, the most significant of which leads away from stone agricultural terraces, indicating the eroding or flooding potential of this rain. Kalihi Stream itself runs through a steep sided channel in places nearly 40-feet deep.

Immediately above the stream channel much of the project site is relatively level, gently sloping land. Some of the land on the streamside of the property has been graded into wide terraces or excavated during the time of commercial nursery operations. A series of shallow gullies run generally perpendicular to the stream up to the valley ridge to the south. Slopes along the lower portion of these gullies are generally moderate and easily traversed. A wide plateau lies about halfway up the slope to the ridgeline. This is the site of the former nursery operation. Evidence of significant earth movement and grading are clearly visible at this location. Above this plateau, the valley walls become steeper. The gullies climb to become narrow gulches stepping up with sheer rock cliffs and

dry/ephemeral waterfalls. Steep side ridges reach up from the lower valley and intersect the top of Kamañaki Ridge.

The project site ranges in altitude from a low point of nearly 500 feet above sea level at the Kalihi Stream channel to a height of approximately 1,400 feet along the top of Kamañaki Ridge.

The overall climate of Kalihi Valley is typical of lands near the Ko'olau Mountains. Rainfall is moderately heavy in the area, averaging well over 100 inches annually at the Board of Water Supply [BWS] Kalihi Reservoir and the upper portions of the valley. The majority of precipitation occurs between November and April when winter storms add to trade wind rainfall. The traditional name of the wind is Haupe'epe'e or 'hide-and-seeK,' known to swirl in and around the steep valley walls, appearing and disappearing playfully. However, predominant trade winds from the Northeast blow through the windward pass of the Ko'olau summit and down the valley toward Honolulu.

Temperatures in the uplands are consistently cooler than the nearest official recording site at Honolulu International Airport, which range between 70° and 84° Fahrenheit. While nights on site have been recorded as low as 53° Fahrenheit and days have reached into the low 90s, most experience the weather as cool and pleasant.

Geologically, the Kalihi Valley Nature Preserve site is situated in a very old valley eroded into the Ko'olau volcanic shield. Older alluvium underlies the floor and slopes of the valley. Younger Kalihi lava of the Honolulu Volcanic Series was deposited 450,000 years ago from vents in Kalihi and Kamañaki Valleys. Kalihi Stream cut a channel and deposited stream terraces of younger alluvium. The slope of Kamañaki Ridge on the southern half of the site is classified as rock land. Soil underlying the more gently sloping valley floor is classified as lokeka'a silty clay.

Environment is important for understanding traditional land use and eventually for determining Function and Significance for historic properties, designations per the National Register of Historic Places. Hydrology in Hawaii, especially in wetland areas, is important because of the prevalence of kalo (taro) cultivation requiring a consistent and cool water source. Because of the general unpredictable and erratic nature of water flow during stormy seasons, traditional Hawaiian pā hale (homes, houses) and places of worship were often placed near water sources but also safely removed from normal flood areas.

Immediately above the [Kalihi] stream channel much of the project site is relatively level, gently sloping land. Some of the land on the stream side of the property was graded into wide terraces or excavated during the time of the commercial nursery operations.

A series of shallow gullies run generally perpendicular to the stream up to the valley ridge to the south. Slopes along the lower portion of these gullies are generally moderate and easily traversed. A wide plateau lies about halfway up the slope to the ridgeline. This is the site of the former nursery operation. Evidence of significant earth movement and grading are clearly visible at this location. Above this plateau, the valley walls become steeper. The gullies climb to become narrow gulches stepping up with sheer rock cliffs and dry/ephemeral waterfalls. Steep side ridges reach up from the lower valley and intersect the top of Kamañaki ridge (2013 HĀ Master Plan, p14).





Figure 1. Hydrology map of central and northern portion of HĀ (Ibid).

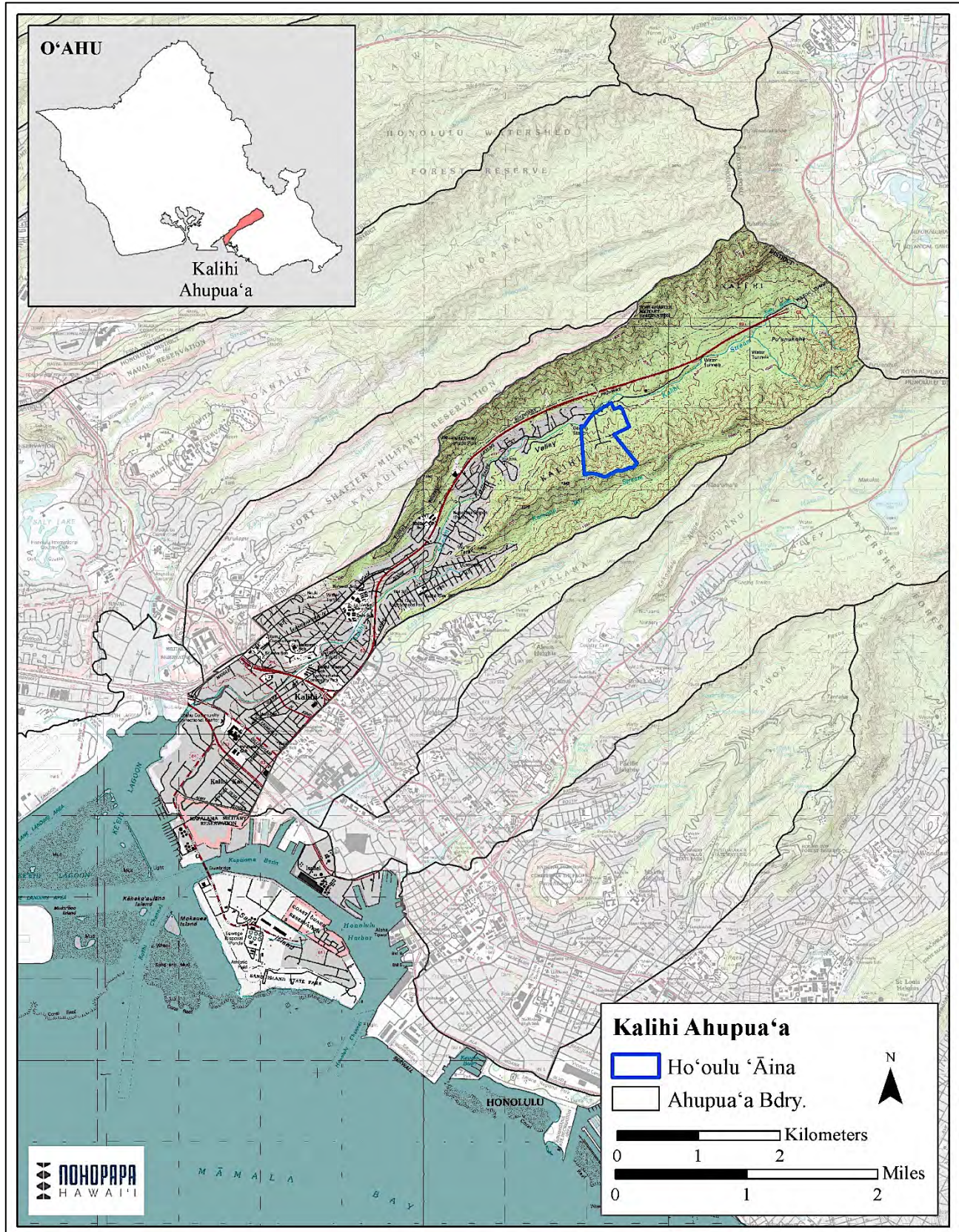


Figure 2. USGS Topographic Map showing Ho'oulu 'Aina study area.

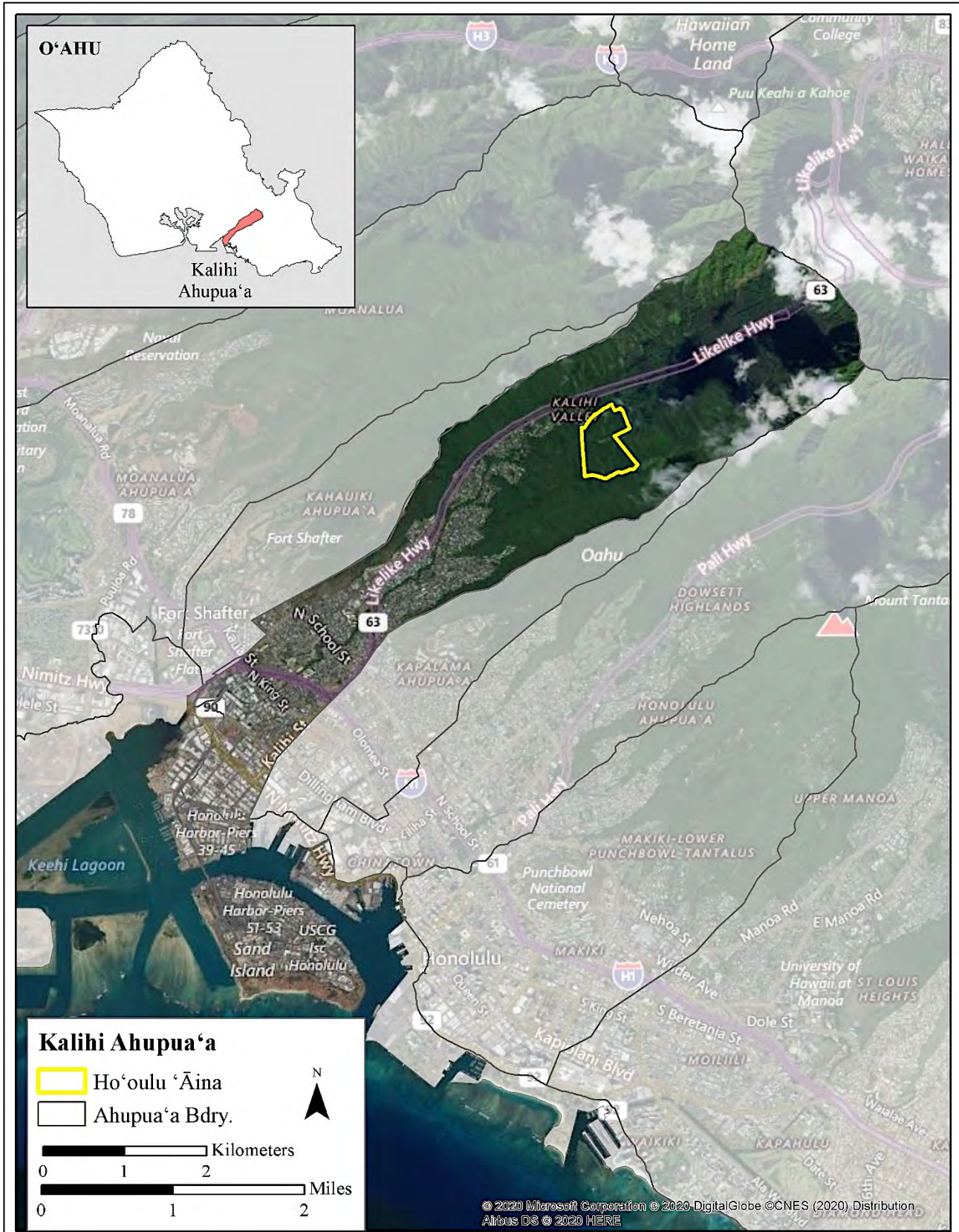
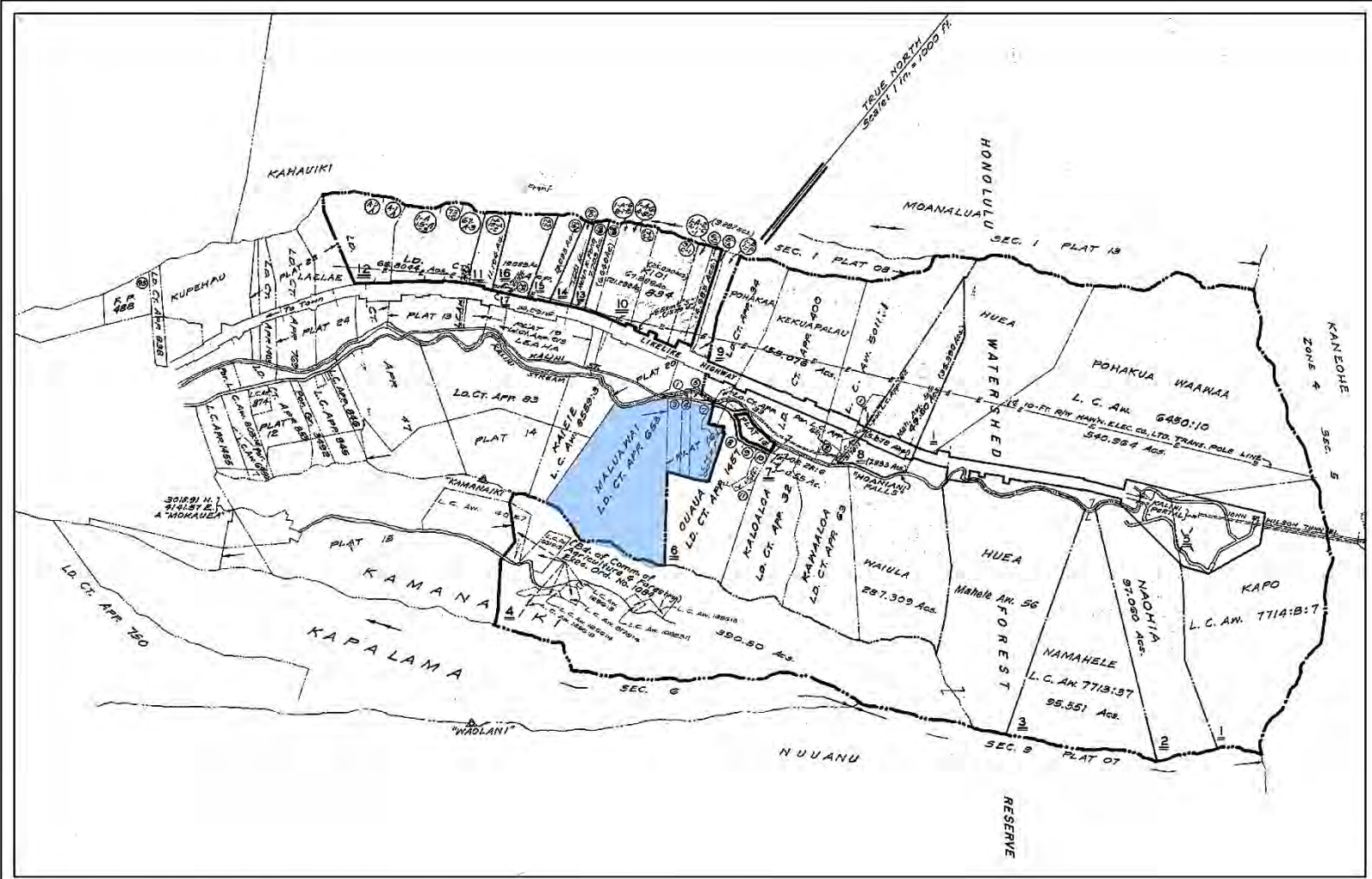




Figure 3. Aerial imagery showing Ho'oulu 'Āina study area.



**TMK Plat Map 1-4-18  
Kalihi Ahupua'a**

 Ho'oulu 'Aina

 Meters  
0 400 800


 Miles  
0 0.5 1



Figure 4. TMK Map showing Ho'oulu 'Aina study area.



## MO'OLELO

He wahi leo mahalo – Kalihi Uka is legendary, a significant place. Those who visit the valley often feel the strong and pervasive mana of this 'āina. It is beautiful. It is elemental. It is commanding. These feelings are intimated in the mo'olelo of Kalihi from ka wā kahiko. The mo'olelo often describe the strong wind that buffets us today; they describe the cold rain that still cuts through the valley; our mo'olelo talk of cloud formations we can still see, and pōhaku we still touch. We are blessed to continue to live our mo'olelo. We are eternally grateful for the kupa'āina of Kalihi, especially those who came before us, who remember and perpetuate the mo'olelo of Kalihi.

To the Harvey/Miles 'ohana, we are very grateful for their sharing of mo'olelo and their intimate connection with Kalihi Uka. We understand that their 'ohana, and potentially others, were the unnamed “informants” that provided Clarice Taylor with legends of Kalihi Uka for her articles that were published in the Star-Bulletin newspaper in 1955. Mahalo for keeping the mo'olelo alive!

Many of the written legends of Kalihi come from the work of scholar Joseph Moku'ōhai Poepoe. His 1906 mo'olelo of Haumea and Wākea and their triumphs and tribulations in Kalihi Uka and around O'ahu are invaluable for our understanding of this very special place. English-version legends about Kalihi, such as those found in Beckwith's *Hawaiian Mythology* and Summer and Sterling's *Sites of O'ahu*, often use Poepoe's stories and collections at Bishop Museum as source material. Poepoe's father, G.W. Poepoe, wrote *He Mo'olelo no Kamapua'a* under the penname G.W. Kahiolo. In that mo'olelo, Kahiolo (1998:83) self-identifies himself as Kalihi's child, “ko Kalihi keiki.” The depth of understanding and clarity of details within J.M. Poepoe's 1906 mo'olelo of Kalihi prove that he too, like his father, was a kupa of Kalihi, a child of this land. We are extremely grateful for his perpetuation of mo'olelo Kalihi.

### Home of Gods

In our mo'olelo, Kalihi Uka is a wahi pana, a storied and sacred place. It is the ancestral home of many of our gods – our akua. The akua dwell in the rocks and the plants, in the birds and the silence, in the clouds and the mountains of the valley. Some of the most well-known akua of Hawai'i choose to live in Kalihi Uka. It is home of Papahānaumoku. She is Haumea, and her humble hale is at the peak of Kilohana, at the far upland point of the valley. She lives there with Wākea – the father of the expansive sky. Kapō'ulakina'u – a goddess of hula experts – was born in Kalihi valley from the eyes of Haumea (Beckwith 1970:186). She lives in the streams, rocks, and waterfalls of Kapō. Kamohoali'i, the great shark god and elder brother of Pele, was also born in Kalihi Uka. He often dwells in the steep cliffs of his birthplace (Taylor 1955). All of the great gods had stone residences in the upper valley (Taylor 1955).

### ***Papahānaumokuakea, Papa, Haumea***

In 1906, the Hawaiian language newspaper, “*Ka Na'i Aupuni*,” recorded the following concerning the legendary ancestors of the Hawaiian people, Wākea and Papahānaumoku who lived at Kilohana in Kalihi:

*O Wākea, he kanaka maoli no ia; a o kana wahine o ia o Papa, i kapaia nohoi o Haumea, a o ko laua wahi i noho ai oia ka pali o Kilohana. Oia kela wahi kaola pali mawaena o ke awawa o Kalihi-uka ame Ko'olau.*

Translation: Wākea is a human and his wife Papa, who is also called Haumea, they lived at the cliff of Kilohana. That cliff trail is between the valley of upland Kalihi and Ko'olau.

A visitor to the uplands of Kalihi Valley on the island of Oahu, should he start just *mauka* of Kamehameha School grounds and go on to the center of the valley and look straight up toward the Koolau mountains, will see a peak on the north eastern side of the valley. That is the peak or hill of Kilohana, the home dark with mist, of Wakea and Papa, the ancestral *kupua* [a supernatural being possessing many forms] chiefs of Hawaii . . . Of Papa, it is said that she was a woman more than mortal, a *kupua*, and that she bore many names, such as Papa, Haumea, and Kamahaikana . . . Wakea was a man and human and he was the husband of Papa when she was called Haumea. They left the border of Kahiki in the days long past, and became the parents of the Hawaiian people and lived on the hill of Kilohana which stands high up in the valley of Kalihi. (Sterling and Summers 1978:325).

The myths also tell of Papa, in her *kupua*, or mortal shape shifting form, as Haumea, and center around themes concerning the food supply for the life of the ‘ohana to ensure the continuation of family bloodline or lineage. At Kalihi, Haumea mates with her children and grandchildren to give birth to the Hawaiian race.

Per Kamakau, “Haumea has six renewals or rebirths, some say in other lands; for example, as Namakaokahai, as Pele, and so forth. She is said to have changed herself into a young woman at the heiau of Hale-papa-a (House of burning land) in Nu‘umealani, a land in Pali-ku, and returned to marry her children and grandchildren. Her divine forms and her different bodies are worshiped by later generations as: Papa-hanau-moku (Papa giving birth to islands); Haumea-ka-hanau-wawa (Haumea giving birth noisily); Ka-haka-ua-koko (The place of blood); Hai-uli, because of her visits to the “blue sea” of Kahiki (on Oahu); Lau-mihi, from her gathering crabs (Ku-mihi) and seaweed (lau) there; Kamehaikana, from her entering a growing tree—the last three names referring to the time when she lived as a woman in Kalihi valley.”

The mo‘olelo of Haumea is associated with Kilohana, but her last three transformations are tied to her life as a mortal, possibly with a heiau that was built for the worship of Haumea, Ka‘ie‘ie heiau. According to Beckwith (1970):

In her human body as Papa, Haumea lives on Oahu as wife of Wakea; in her spirit body as Haumea she returns to the divine land of the gods in Nuumealani and changes her form from age to youth and returns to marry with her children and grandchildren. Some place these transformations on Oahu at the heiau of Ka-ieie (The Pandanus vine) built for her worship in Kalihi valley.

Ka‘ie‘ie heiau is most likely located in the ‘ili of the same name, immediately WSW of the HĀ park and anchors one of the earliest stories of the Hawaiian people to the area.

If we know the immediate location of the earthly home of Papa to HĀ, we can surmise that what grew in Ka‘ie‘ie also grew in Maluwai.

Ia laua e noho ana ma keia wahi, ua loa ko laua ola, ma na mea o keia nohokino ana ma o na maia palaku i ka nahele, na uhi punapuna moe lepo o ka uka, na kalo aweu manalo a lilo i poi uouo ono; na hooio [hō‘i‘o] me na kikawaio e lomi pu iho ai me na opae kala ole o ka uka waokele; na lawalu oopu momona i hele a ala i ka lauki, ame na wahi luau palupalu o ia uka iuiu. Pela nohoi me na alamihi kai aala o na kai kohola o kai ae nei o Kalihi, e laa na papai momona a pela nohoi me na wahi hua opihi mai o na Koolau, ame ko laila mau lau limu. A o keia mau mea a pau inai pu iho me ka poi aweu uouo, he ono mai hoi kau a koe (Poepoe, 1906).

While they resided at this place (Kilohana), they obtained their life from the food needed in physical living, such as the perfectly ripe bananas in the forest, the firm and mealy yams laying in the soil of the uplands, the wild, tasty taro turned into delicious sticky poi; the hō'i'o and kikawaiō ferns mixed together with the mountain 'ōpae of the upland rainforest; the sweet 'o'opu cooked in bundles (lāwalu) until fragrant with ti-leaf; and the soft, tender lū'au of these majestic uplands. With that was paired the ambrosial alamihi from the reef flats of the oceans of Kalihi, also with the fatty crabs and the meaty opihi from Ko'olau, as well as the leafy limu of that area. And all of these things were eaten together with the sticky poi made from wild taro, truly and exceedingly delicious! (Translated by Kanoa OConnor)

The name, Ho'oulu 'Āina, was in fact inspired by "the ho'oulu'ai designation of an ancient heiau" (HĀ Master Plan, 2013:1) in Kalihi Valley. Ka'ie'ie heiau, as described by Thrum (1906:94) was a ho'oulu'ai heiau.

### ***Kapō'ulakina'ū and Kamohoali'i***

Kapō was the daughter born to Haumea or Papa while she was living in Kalihi Valley with Wākea, her husband. Kapō had many names, such as Kapō'ulakina'ū and Laka:

*E kapu, he ihiiki a he pae akua no hoi*  
O very sacred tabu of the gods.

Haumea was the leader who was never absent from those skillful in the art of the Hawaiian hula. A very sacred tapu of the gods rested upon her. Some say she was born from the eyes of Papa. One source indicates that there is a stream said to be a kinolau (physical manifestation) of Kapō, patron of hula, of high rank and able to assume many shapes at will, as well as a cliff that was the kinolau of Kamohoali'i, elder brother of Pele, and Lord of sharks:

Kapo-ula-kinau, Kamohoalii, Pele-honua-mea are the three wonderful ones who came from Wakea and Papa. A very sacred tabu of the gods rest upon her. Birds never sing about her tabu home up Kalihi Valley. There at noon when the sun is shining brightly, she may be seen on the hillside beyond the upland of Kilohana where stands her tabu stone (7 feet long and three feet high) into she entered, shaped like a house in front, like a fish's tail behind. (Beckwith 1970:186-187)

Ms. Colleen Aiu, kumu hula who is also the daughter of the late and great kumu hula, Ma'iki Aiu, in an interview recalls a story that was told to her by the late aunty Sarah Kailikea. While Aunty Sarah and Aunty Alice Holokai were traveling through the Wilson Tunnel, Aunty Sarah heard a drum beat. Later, both she and Aunty Alice visited Tutu Kawena and shared her story. Tutu Kawena informed them that "long ago, there was a hula mound and hula gatherings in upper Kalihi Valley. It is the hula maiden of Kalihi Valley, Kapō or Kapō-'ula-kina'ū, Laka, and others. She is the daughter of Haumea." (Palama, 2005, Appendix C)

Likewise, according to McAllister, David Kama, who was the caretaker of the water reserve in Kalihi Valley, tells him that he heard the drums on the Nights of Kāne (Kāne o ka Pō) above his house but has never found the heiau. However, Thrum (1906:94) mentions three heiau that McAllister had been unable to obtain additional information about:

Kaieie, Kalihi-Uka, on premises of Dr. Huddy, of hoouluai class, Haumea deity.  
Parts of foundations only remain.  
Kaoleo, Kalihi-Kai, no particulars ascertained  
Haunapo, Kalihi-Kai, no particulars ascertained. (McAllister 1915:88-90)



However, these three heiau in the valley were ideal for growing ‘uala (sweet potato), uhi (yams), wauke (paper mulberry) and mai‘a (bananas).

A map of Kalihi dated 1883 indicates the place names of Popoulu and Kapō within the wao akua region (i.e. the uninhabitable mountain region where deities dwell) of the ahupua‘a. Sterling and Summers (1978:324) speak of Kapō and Kamohoali‘i:

Look now at the steep cliff to the right, to the hill equal in height with the side of Kapo. This hill is Kamohoalii. This is own [sic] brother of Kapo. He was born from the top of the head of Haumea [Papa]. He is the beloved brother of Pele, the one who saved the fire alive when she battled with Kamapuaa.

### ***Kāne and Kanaloa in Kalihi***

The gods Kāne and Kanaloa are associated with activities related to ‘awa drinking. With ‘awa as their principal food, we can assume that water must have been a critical ingredient:

Kane and Kanaloa journeyed along the coast of the island until they came to Kalihi. For a long time they had been looking up the hillsides and along the water courses for ‘awa. At Kalihi, a number of fine awa roots were growing. They pulled up the roots and prepared them for chewing. When the ‘awa was ready, Kanaloa looked for fresh water but could not find any. So, he said to Kane, our awa is good, but there is not water in this place. Where can we find water for this awa?’

Kane said, ‘There is indeed water here.’ He had a ‘large and strong staff.’ This he took in his hands and stepped out on the bed of lava which now underlies the soil of the region. He began to strike the earth. Deep went the point of his staff into the rock, smashing and splintering it and breaking open a hole out of which water leaped for them to mix with their prepared awa. This pool of fresh water has been known since the days of old as Kapukawaiokalihi (the water hole of Kalihi). (Beckwith 1970:63)

### ***Kamapua‘a from Kalihi***

In *He Mo‘olelo no Kamapua‘a* (Kahiolo 1998), Kamapua‘a identifies himself and his akua mother, Hina, as being from Kalihi. At the end of this mo‘olelo, Kamapua‘a searches for his parents. He finds Hina at the ocean of Keonealuhi (possibly near Kalalau, Kāua‘i). Here, he calls out to Hina, asking for a fish from his mother – identifying himself as a child of the goddess. She does not recognize him as her son, denying his request for fish. There is a prolonged exchange between mother and son -- Kamapua‘a insists he is her child and Hina denies his claim. Finally, Kamapua‘a performs an oli to prove his connection to his mother. The last portion of the oli states:

No Kalihi ‘oe, no Kalihi wau,  
No Kalihi ka wahine hāhā pāpa‘i,  
Moku aku ke kaula, lilo aku ka ipu.  
Hahai a ka wahine i ka ipu,  
‘O ke kai mokumoku ipukai o Kalihi,  
He pa‘a ‘o Kalihi.  
E Hina ē, na‘u kahi i‘a,  
E Hina ē, he ‘ole manawa ‘ino, aloha. (Kahiolo 1998:79)

After hearing this, Hina realizes that the stranger is indeed her son, Kamapua‘a. In the oli, “No Kalihi ‘oe, no Kalihi wau,” means “you (Hina) are from Kalihi, I (Kamapua‘a) am from Kalihi.”

The mele then references a story of Hina losing her gourd while gathering crabs in Kalihi, O‘ahu. The detail with which Kamapua‘a describes the lost gourd, with its rope breaking (ka moku ‘ana o ke kaula o ka ipu), is what causes Hina to recognize him as her son -- Kamapua‘a.

## **Kupua and ‘E‘epa**

Unknown to many of us, Kalihi Uka remains the home of many akua and supernatural kupua. These spirits protect and guide all of us in times of need, and are also known to be kolohe – playful and mischievous. These akua are very much still alive in Kalihi Uka, and Kānaka still recognize and pule to them today.

### ***Hāpu‘u and Kala‘ihauola***

Hāpu‘u and Kalaihauola are stones, and the place to this day is named Hāpu‘u:

“It was said that these two belong to the mysterious little people of Nuuanu Valley who wandered to that place because of the war going on in Nuuanu when some fled. These two came to the up lands of Kalihi -- where are the others. Strangers who visit the valley should pull leaves, braid them into a wreath and lay the wreath on the stones in order to meet with no such difficulty as mists and cold or the loss of their road on the way to Kilohana and back. Should the mischievous little people see that there are no wreaths on the stones when visitors are on the way to Kilohana, they will break a branch of the flowering mountain apple or the leaf of a tree fern, dip it in water and sprinkle the two stones. Soon after, the summit of Kapo will be covered with mist and a drenching rain will cause the stranger to shiver with cold. Sometimes, the little people will throw away the wreaths and do the same.” (Poepoe 1906:65)

### ***Other Kupua***

In *Tales of Hawaii* by Clarice Taylor (1955), several other kupua are mentioned living in Kalihi valley. These include:

Kaupe (also known as Poki by modern Hawaiians) – a big dog that also took the form of a stone or cloud formation. When Hawaiians living in Kalihi saw Kaupe over the mountains in Kalihi Uka, they knew he was warning them not to go up to Kilohana or Kapo.

Manukao is a great rock in the form of a bird living at the ridge below Kilohana. Its name literally means “bird warning.” The spirit in this pohaku often takes the form of a great rooster. Manukao could warn Hawaiians of oncoming famine.

Ioleloa is a stone that used to lay next to the old Kalihi footpath. Ioleloa was an ancient Oahu king who made a raid upon the island of Kauai. The Kauai king followed him back to Oahu and fought a hand-to-hand battle with ‘Ioleloa on the ridge of Kamananui overlooking Kalihi Valley. Ioleloa was killed and hurled into the valley where he turned to stone. Many generations later, in the early 1900’s, the stone was dynamited to create Kalihi Street. Hawaiians refused to dynamite the rock – they stood around and watched the foreigners do the job. The foreman who insisted on dynamiting the stone died when a fragment hit him.

Laukīpala is a kupua woman who lives in Kalihi Valley in a big flat stone in a pool under Kapo. She is the deity of yellow ti leaf on land and the lauki fish in the sea. She is sometimes seen as a heavy-set woman with gray hair – she is a wanderer who never stays in one spot. Her stone was known to move up and down the valley, often resting in very surprising places!

## Visited by Ali‘i

In historical legend, Kalihi Uka was a favorite place for ali‘i from O‘ahu and from afar. Kalihi’s pools and streams were often sources of enjoyment for visiting ali‘i. The valley and her people offered refuge to Kahahana, King of O‘ahu, when he fled into hiding. After his conquest of O‘ahu, it is said that Kamehameha found respite in Kalihi Uka.

### *Ka-elemu-wai-o-Kalihi*

When one is almost out of the hill valley of Kalihi, on the *mauka* side of Joe Kalama’s residence, there is a spot called “The anus of Kalihi,” “*Ka-elemu-wai-o-Kalihi*.” The exact feature is a solidly planted rock in the middle of the stream; in the center, when the flow is low, one can see a little hole shaped like an anus from which water flows and runs down below. The rock above the hole is shaped like buttocks:

On the ‘Ewa side of Kalihi Stream, the home site is still to be seen at a place called Kupehau. Here, chiefs of Hawaii resorted because of the delicious poi and tender taro tops. Kamehameha I was one of the chiefs who visited the spot. After his battles on Oahu, he went to rest at Kupehau. One day, the chief came down to the stream to bathe when the water was low. Kamehameha stuck his finger into the hole and said, “Kahaha! The water of Kalihi comes from an anus!” (McAllister 1915:90)

## He ‘Āina Waiwai

Our mo‘olelo describe Kalihi as an abundant landscape – full of life and spirit. Water – ka wai ola – is plentiful. Water gushes forth from springs (mo‘olelo of Kāne and Kanaloa), gathers in cool pools (Kapō‘ulakina‘u; mo‘olelo of Kamehameha; pōhaku hānau), and leaps down cliffs as waterfalls (Kapō‘ulakina‘u). Our life-giving rain is referred to with affection and our beloved streams are celebrated (Ua po‘olipilipi; Kāne and Kanaloa; Kapō‘ulakina‘u) in mo‘olelo. The lushness of Kalihi uka remains a common theme. Plants grow prolifically in the upland valley. Vegetation used for lei, such as ‘ōhi‘a, palapalai, maile, and lā‘ī, are luxurious and grow abundantly here. There also exist a plentiful amount of edible plants. In his mo‘olelo of Haumea and Wākea, Poepoe (1906) describes the bountiful amount of food growing in Kalihi Uka.

Poepoe uses the word “ola” for the food that Haumea and Wākea find in and around Kalihi Uka. The abundance of food truly is ola – life and health – for Kalihi. The abundance of this ‘āina continues to this day, and continues to grow and expand through the hands of those who mālama ‘āina.

## ‘Ōlelo No‘eau

The ‘olelo no‘eau or traditional sayings represented the most dramatic qualities of the Hawaiian people. Typically, there are underlying messages that, when understood, can convey humor, wisdom, and eloquent poetry.

“Ka Ua Ko‘i-lipilipi o Kalihi”  
The Adz Rain of Kalihi (Pukui 1983:169)

There is a story entitled “Ka Ua Poolipilipi-o-Kalihi” that describes the rain that sharpens the head. In the days of old, there were two lovers who hid in the forest so they could indulge in their passion without the girl’s parents knowing. There, a little patter of rain fell upon them but they did not pay any attention. After a time, they went to see if the rain had cleared, but rain was still falling and they slept again. For some days and nights, the rain fell and the two kept on sleeping. When they awoke, their heads were sharpened and flattened from sleeping so long while the rain fell day and night. Thus, the rain at Kalihi is called “the rain that sharpens the head at Kalihi,” “Ka ua Poolipilipi-o-Kalihi.” (Sterling and Summers 1978:326).

Ke kai nehe o Puuhale.  
*The murmuring sea of Puuhale.*  
The sea at Puuhale in Kalihi, Oahu, was said to murmur softly as it washed ashore.  
There were once many fishponds there. (Pukui 1983:186)

Puka kūkae wai o Kalihi.  
*Through an anus appears the water of Kalihi.*  
An expression of derision for Kalihi, Honolulu. IN Kalihi Stream is a stone that resembles the human backside. When the stream is low, water pours out of the hole. First uttered by a visiting chief. (Pukui 1983:299)

In 2015, Ka‘ohua Lucas and Puni Jackson composed the following ‘olelo no‘eau:

Pi‘i mai lau ‘o Makali‘i.  
Moe ihola ka ‘ōlena.  
*When Makali‘i (constellation) rises in Kalihi, the ‘ōlena drops signaling it is time to harvest the tuber for lā‘au.*

## HISTORICAL ERA

### Traditional Historical Accounts

The following information is an excerpt from a 2020 summary of early traditional accounts of Kalihi Ahupua‘a (Figure 7 to Figure 10) from the Kamehameha Schools Kona Wahi Pana Survey by Uyeoka et al. 2020. The information was collected as part of the effort to help Kamehameha Schools better understand the scope of existing wahi kūpuna sites in KS’ Kona, O‘ahu Region:

According to Pukui et al. (1974), the place name Kalihi, literally “the edge, border or boundary” (Pukui and Elbert 1986),<sup>1</sup> is

. . . famous in legend as the home of Pele’s sister Kapo . . . , and of Haumea, Pele’s mother who is identified with Papa, the wife of Wakea. She had many adventures at Ka-lihi and saved her husband Wakea, who was being taken away for sacrifice, by embracing him. His bonds loosened and the two disappeared into a tree. Ka-ieie was a *heiau* here for her worship. (Pukui et al. 1974:77)

In his ground-breaking study of native planters in Hawai‘i, Handy (1940; Handy and Handy 1972) described Kalihi as follows:

Kalihi had a shallow seaside area, now the shore of Kalihi Basin, that was, like that of Moanalua, ideal for the building of fishponds, of which there were six . . . On the flatlands below the valley there were extensive terraces on both sides of the stream, while along the stream in the lower valley there were numerous areas with small terraces . . . The interior valley was rough and narrow and not suitable for *loi*, but it would have been good for sweet potatoes, yams, *wauke*, and bananas, which probably were planted there. McAllister found few dwelling sites and no *heiau* remains, although Thrum listed three. . . (Handy and Handy 1972:475)

Like other ahupua‘a in Kona Moku, the upland forest was a reliable source of various native, endemic, and Polynesian-introduced plants. These upland resources provided not only food products—especially when famine struck—but also medicinal plants, wa‘a (canoe) trees, and other needed items (e.g., for religious practices, hula, and so on). John Papa ‘Īī, for example, tells a story from his childhood in the early 1800s when a proclamation was issued for the people to gather materials for thatching “*heiau* houses” (‘Īī 1959:45). He described what happened next:

All the people who went on the journey arrived in the upland of Kalihi, near the diving pool of Waiakoa, for they thought that that would be the nearest place to obtain dry ti leaves, timber, thatching sticks, and *ie* fibers for tying on the thatch. . . At this place there were many expert canoe makers, whose children were among [my] playmates (ibid.)

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<sup>1</sup> Pukui et al. (1974:77) make the following interesting and surprising statement about the naming of Kalihi: that is was “. . . said to have been named by Prince Lot (afterwards Kamehameha V) in 1856,” which would suggest the name is neither very old nor indigenous to O‘ahu.

A malihini (foreign) visitor (Bennett) in the 1830s talked about natives traveling up through the entire valley to its upper reaches, to trade (or sell) goods with the windward side:

Kalihi had a pass to the vale [valley] of Kolau [Ko'olau] similar to the pari [pali] of Anuuana [Nu'uaniu], though more precipitous, and only employed by a few of the islanders who convey fish from Kolua to Honoruru. (Sterling and Summers 1978:322)

Assumed to date from prehistoric times, three complexes of 'auwai (stone-lined water channels) and surrounding pā pōhaku (terraces) remain in varying stages of disrepair. Mentioned previously, Thrum identifies three heiau that McAllister (1933:88) was unable to obtain any additional information:

1. Ka'ie'ie, Kalihi-Uka, Haumea deity
2. Kaoleo, Kalihi-Kai
3. Haunapo, Kalihi-Kai

### ***Locating Ka'ie'ie heiau***

As previously mentioned in the Mo'olelo Section, the heiau of Ka'ie'ie was associated with the worship of Haumea in her earthly form. McAllister (1933:88), citing Thrum (1906:94), describes Ka'ie'ie heiau as hoouluai class and as connected to Haumea,

Thrum mentions three heiaus about which I have been unable to obtain additional information...Kaieie, Kalihi-uka, on the premises of Dr. Huddy; of hoouluai class. Haumea its deity. Parts of foundation only remain.

The 'ili of Ka'ie'ie was originally awarded, during the Māhele, to C. Kanaina as LCA 8859 'āpana 3 (Buke Māhele vol10:633-4). It somehow passed down to Dr. George Huddy, who was a dentist. He sold his residence to the "Charles Cranes" in 1907 (The Hawaiian Star). Charles Crane was the publisher of Ka Nupepa Kuokoa and later the Mayor of Honolulu.

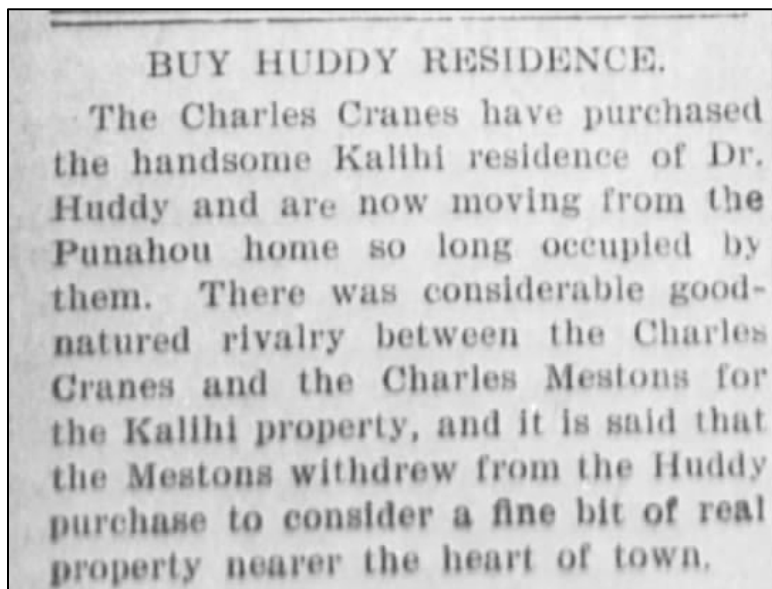


Figure 6. Newspaper clipping from the Hawaiian Star, August 8, 1907.

If you refer to Figure 6 (previous), the ‘ili of Ka‘ie‘ie is located on Register Map 1017, circa 1883, and is directly makai and adjacent to the land of Maluwai in which most of the HA park site is located, linking one of the origin stories of the Hawaiian people to this area. The ‘ili of Ka‘ie‘ie is now owned by the Sisters of the Sacred Hearts and has one small building complex with the remainder forested.

### Early Historical Accounts

Prior to Western contact, this Kalihi Valley region was once intensively cultivated by Hawaiians living along the valley’s floodplains. Evidence of religious and political practices in Hawaiian society in association with Kalihi Valley is depicted in the tales of fishponds, heiau, and trails connecting Kalihi to other important island districts (Kouneski et al. 2005:7).

In 1810, ‘Īī (1959:95) refers to the taro patches of Kalihi and notes the extensive trails utilized during this time:

“When the trail reached a certain bridge, it began going along the banks of taro patches, up to the other side of Kapalama, to the plain of Kaiwiula; on to the taro patches of Kalihi; down to the stream and up to the other side; down into Kahauiki and up to the other side; turned right to the houses of the Portuguese people . . .”

At the time of the Great Māhele of 1848, when land in Hawai‘i was first converted to private ownership, the ‘ili of Maluwai was deeded to Kamāmalu, the sister of King Kamehameha IV (Alexander ‘Iolani Liholiho) and King Kamehameha V (Lot Kapuāiwa). By the mid 1800’s, the land was used for grazing cattle. Few trees stood in the valley floor and most of the property was grassland.



Figure 7. Rim of the saddle in Kalihi Valley, looking northeast (Bishop Museum Archives CP121,896)



Figure 8. 1884 photo of hale in Kalihi Valley (Bishop Museum Archives CP77903)



Figure 9. Kalihi Valley (Bishop Museum Archives CA1885)





Figure 10. Waterfall in Kalihi Valley (Bishop Museum Archives CP121,897)

## Land Commission Awards

With over 100 Land Commission Awards (LCA) recorded for the ahupua'a of Kalihi, three LCA are within the HĀ study area. Two LCA are konohiki awards, those lands claimed and granted to ali'i. One LCA is a kuleana award, those lands claimed and awarded to the maka'ainana.

Table 1. Land Commission Awards in and around Ho'oulu 'Āina park (Buke Māhele, 1848). The thick box marks LCA within HĀ parcels. The others are adjoining.

LCA Helu (No.)	Awardeee	'Āpana (parcel)	'Ili	Location	Vol.	Pg.	Type
7713	Victoria Kamamalu		Maluwai	Majority of HĀ, central and west	10	449-450	Konohiki
6450	Kaunuohua (for Moehonua)	8	Ouaua	Por. within northeast corner of HĀ	6	768-770	Konohiki
1049	Keawepoepoe (for Keaka)	2	Ouaua	Por. within northeast corner of HĀ	9	650-1	Kuleana
8559	C. Kanaina	3	Ka'ie'ie	Alongside and west of HĀ	10	633-4	Konohiki
7175	Kapule	1, 2	Kekuapalau & Pohakaa	Alongside and north of HĀ	7	388	kuleana
803	A. Adams	12	Kioi	Alongside and north	3	40-48	not kuleana

The only other kuleana, award in the area is northeast of HĀ, to Kapule, LCA7175, 'āpana 1 and 2. Adjacent konohiki awards are also worth pointing out; the 'ili of Ka'ie'ie to the west, awarded to Charles Kanaina and the 'ili Kioi to the north awarded to Alexander Adams.

Relevant LCA are included in Table 1 (above) and on Figures 11 and 12. The following quote is from Kouneski et al (2005) and discusses the three LCA within the park.

Victoria Kamāmalu, a princess and sister of Kamehameha IV and V, received many properties through LCA 7713 not only on O'ahu, but also on all five major Hawaiian Islands. The property awarded to her in Kalihi Valley was on TMK 1-2-14:1 and 26. Kaunuohua (LCA 6450) was awarded not only the 'ili Mokauea in Kalihi Ahupua'a but also an 'ili of land at Waikīkī, Kona, O'ahu, and the ahupua'a of Kalaupapa, Ko'olau, Moloka'i.

A small portion of TMK 1-4-16:3 was awarded to Keawepoepoe (LCA 1049). Keawepoepoe refers to his land in Kalihi as farmland. LCA 7175, located north across Kalihi Stream from the current HĀ property and a house property located to the west of this current property were described by the claimant Kapule as follows:

The Land Commissioners: I, the one whose name is below, hereby state my claim for land at Moauea, an 'Ili in Kalihi. There are eleven lo'i. On the east is a separate kula for me, two mala of bananas are there. On the south is a stream, on the north is a pali, on the west is a kula. I have four lo'i together in the land of Loiloa, also a small separate kula is there. There is also a house claim. My residence is at Kalihi uka in Kaieie.

Kapule X his mark

According to such testimony, farming did occur at this location in the valley and lo'i were utilized in the area. Therefore, although such agricultural features may not have been extensive, taro cultivation, including terrace agriculture, may have occurred on the current HĀ site on a small scale.

The Hawaiian Government Survey, was founded in 1870, under the reign of Lot Kapuāiwa, Kamehameha V. Maps were created by the HGS which have preserved many place and palena names across the Pae 'Āina. Register Map 1017, drawn and surveyed by J. F. Brown in 1883 (see Figures 11 and 12) depicts the entire Ahupua'a of Kalihi, showing 'ili names and Land Commission Awards.

In addition, Maps made by the Land Court, as a required survey for clearing of Titles were highly accurate; these Land Court Application (LCApp) maps were prevalent during the Territory of Hawai'i.

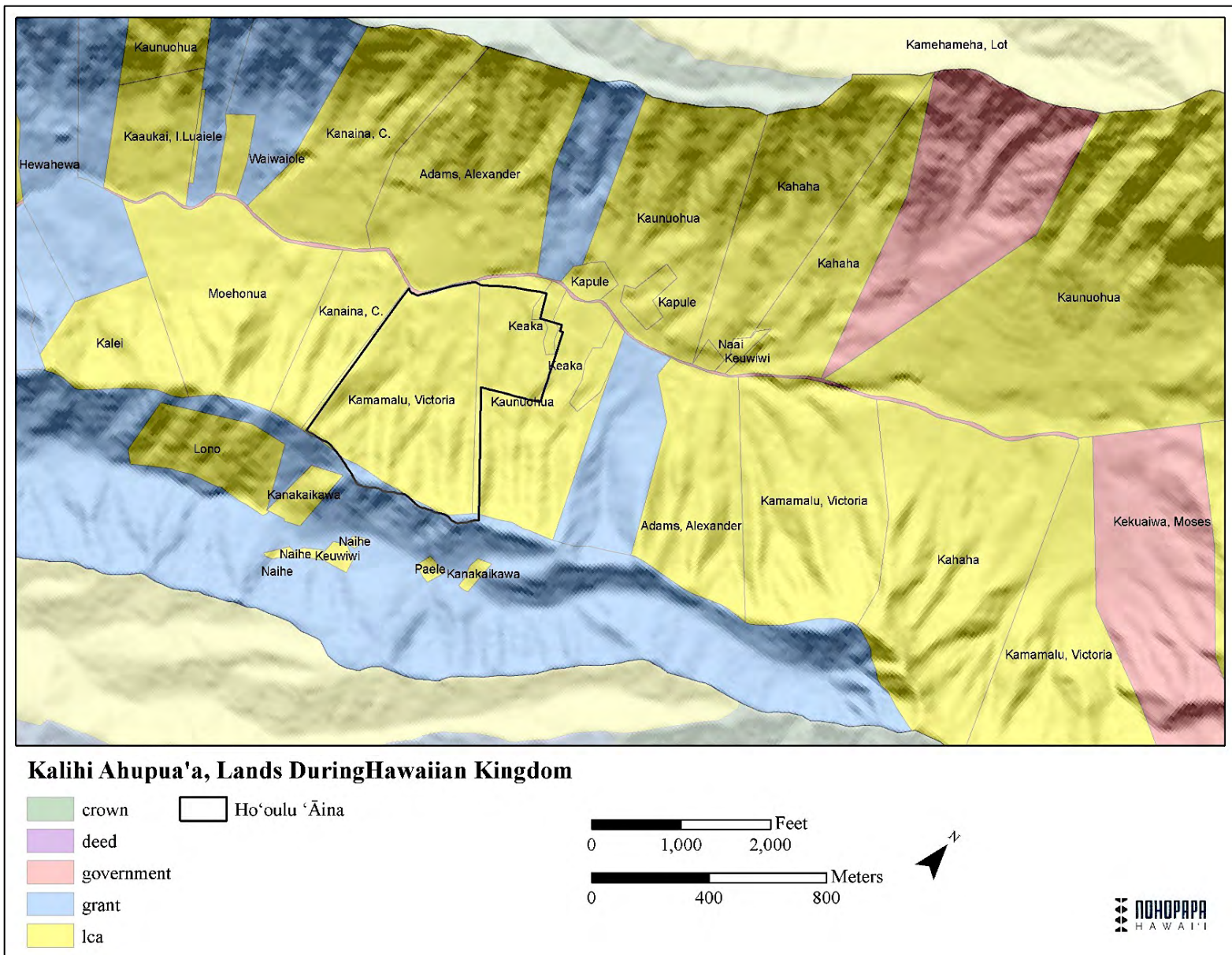


Figure 11. Ho'oulu 'Aina, showing Hawaiian Kingdom lands, including Land Commission Awards (LCA).

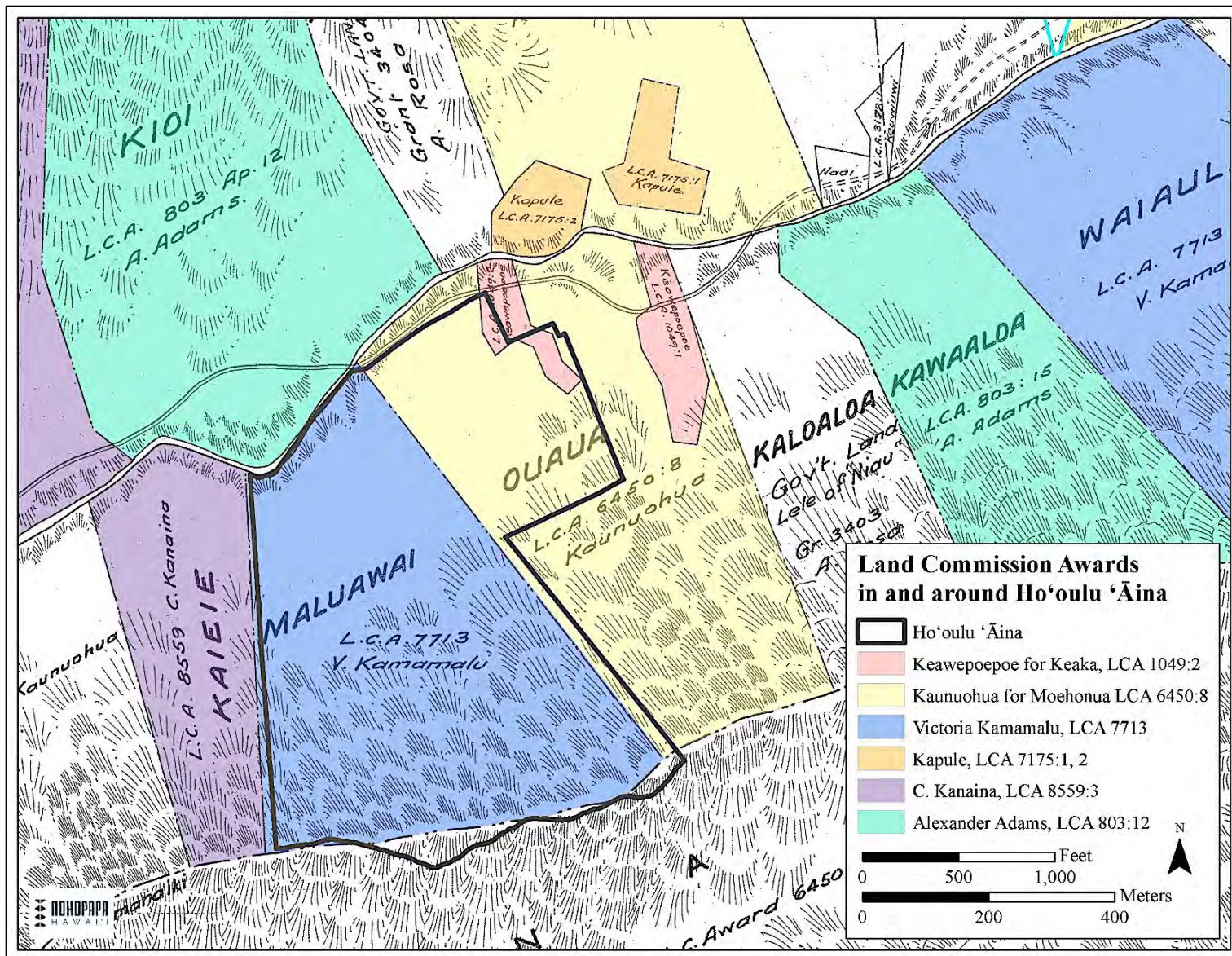


Figure 12. Ho'oulu 'Āina, showing Land Commission Awards (LCA) in and around the study area. Depiction is over a portion of Register Map 1017, by J.F. Brown, circa 1883, as traced by James Iao in 1916.

## 20<sup>th</sup> Century to Present

In the later part of the 19th century and for most of the 20th century, much of the HĀ park lands were used by a commercial nursery. Exotic species such as albizia, rose apple, bamboo, royal palms cover the property. Areas were mined for top soil, which was bagged and sold by the nursery.

In the 1930s, the property was clear and unobstructed. Toni Jean Kuulei Alatan, granddaughter of Charles Marek, (Palama 2005:35) dated the construction of one of the cottages formerly on the property to the 1930s, because at that time she described the Park lands as follows: “There were no trees. All open ...”

Toni Alatan also remembers looking for a nearby heiau her grandmother remembered seeing. She recalls the walls and terraces on HA property.

...we were under the age of 12, my grandmother would talk about a heiau at that time. She remembered seeing it so she told us. Of course, we were kids. So we went up. There used to be 2 tanks at the top of the property just a little ways beyond those tanks, there was a property marker because originally at one time, they owned all the way to the top of the mountain [Kamanaiki Ridge].

All the way to the top and of course, the State decided they would declare eminent domain and make it a watershed. I think it was in the late '40's or early '50's. Well, she told me to go to this marker and my brother and I were to follow it down and keep following it and eventually run into it. Well, we ran into the terraces and that's what we thought it was at first. So we uncovered the whole thing. It was just covered with California grass. So my brother and I, we just uncovered the whole thing and we saw all these terraces and said, “I don't think this is it?” And I was talking to my grandmother and she said, “at one time, the Hawaiians built these terraces and I'm sure that some of them were platforms for homes. And then later, the Chinese came and they expanded on it. It has to be all man-made because there is an area where the water drains. Because it's extremely, you know, you have to have an engineer degree to figure it out. It's very unusual but I'm wondering if the Chinese did that?”

Families, like Ms. Alatan's, owned parcels comprising the modern park, but parcels were sold off in the 1970s to a land developer, Herbert Horita (ibid). The proposed development was the construction of a private gated residential subdivision.

“In response to these concerns, in 1980, the City and County of Honolulu purchased the 100 acres for a park.” Consequently, the neighboring community and a group of hunters from Kalihi Valley led the struggle to gather over 100-pages of documents, including community interviews, details of the pā pōhaku and 'auwai remains, and an alternate proposal for the site. The community wanted a gathering place to engage with the environment in its natural state. These efforts resulted in various legal battles with the State of Hawai'i and the development company.

In conjunction with community-based efforts to stop the development of a gated community, Kōkua Kalihi Valley (KKV) sought innovative ways to continue to serve and improve the health of the community. KKV medical providers asked patients, “Where do you feel most healthy?” The response was not in the medical clinic itself but outside in the open air gardening or engaging with the environment. Consequently, KKV began looking at land parcels to lease.

In short time, the Kalihi Community and KKV combined efforts to secure the site from the private developer.

In 1980, the private land developer ran into tax issues with the State of Hawai'i. In response, The City and County of Honolulu purchased the 100 acres "for a park." The park land was designated to preserve a watershed to protect Honolulu's drinking water, and the property was managed by the Honolulu Board of Water Supply. However, the property was neglected and essentially sat dormant for twenty or so; unfortunately, drug usage, dumping, and other illegal crimes became prevalent during that time.

In 2003, KKV secured the lease for the site and shortly after Ho'oulu 'Āina was born.

In 2004, a 20-year lease of the 100-acre park was approved for KKV.



Kalihi Valley, Pearl Harbor in the distance.  
Figure 13. ca. 1935 aerial photo of Kalihi Valley with Pearl Harbor in the distance (Bishop Museum Archives CP59991)

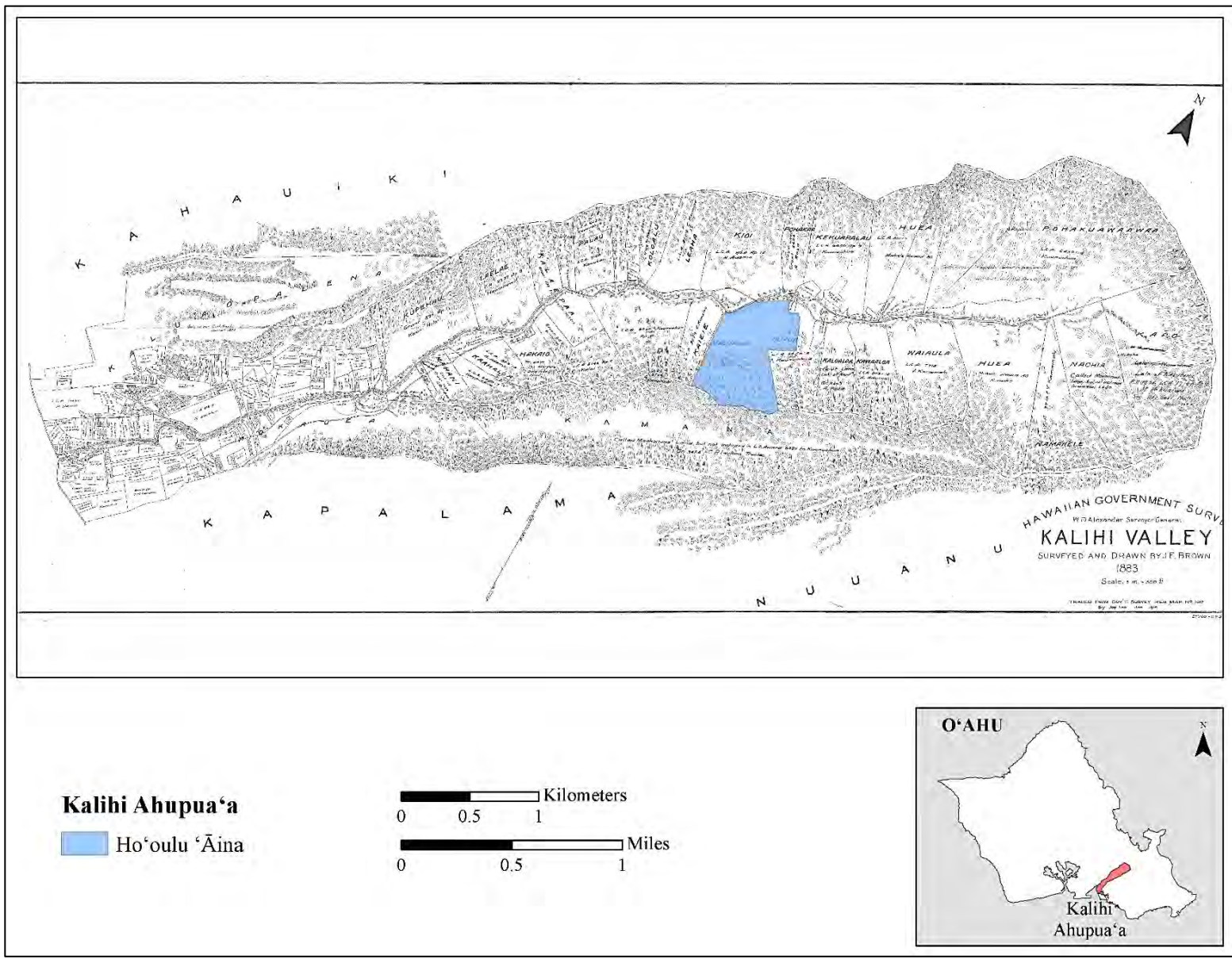


Figure 14. Register Map 1017, with study area highlighted in blue, circa 1883.



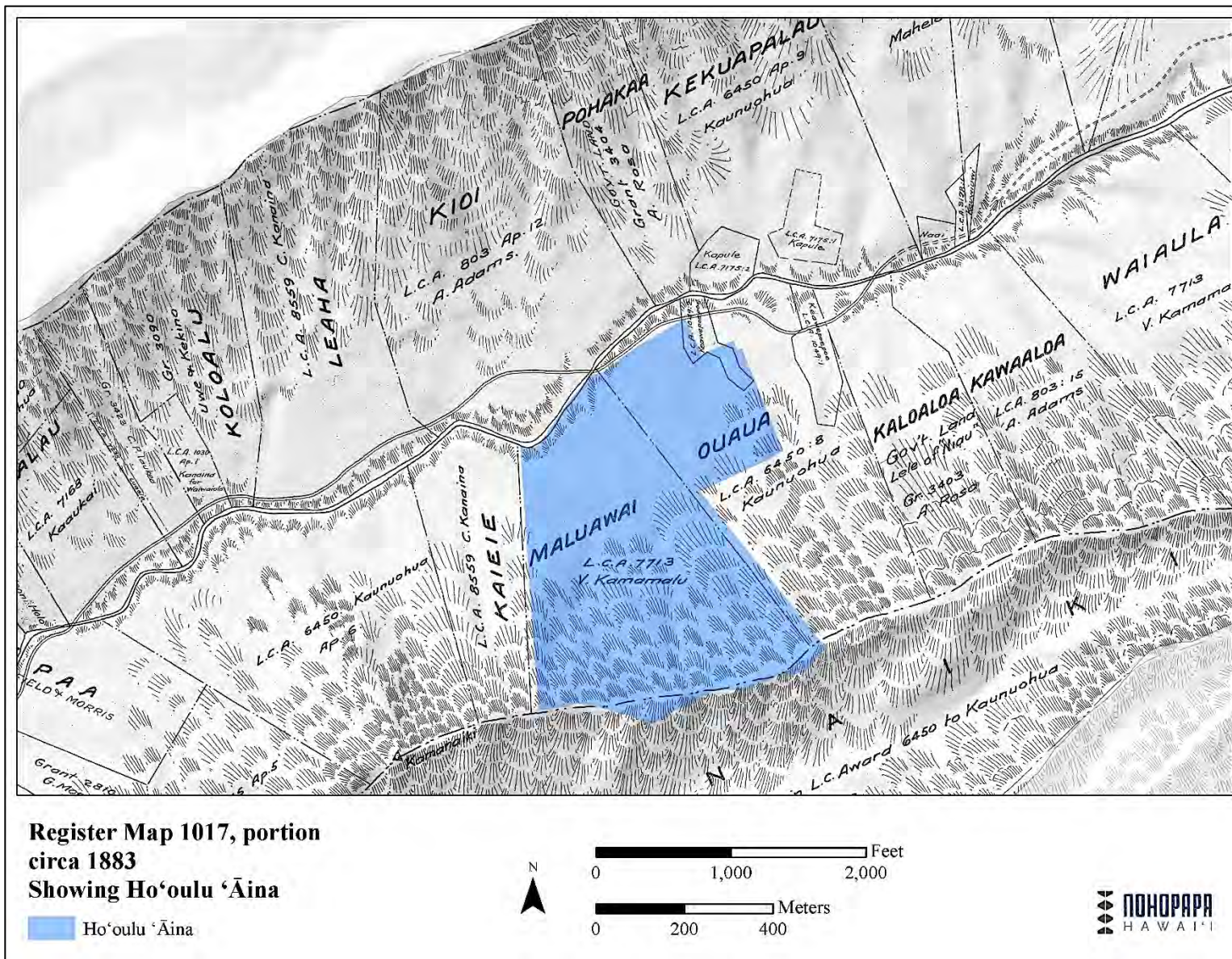


Figure 15. Register Map 1017, with study area highlighted in blue, circa 1883.



Table 2. Summary of Selected Wahi Pana in Kalihi Ahupua‘a (Uyeoka et al. 2020:10-13)

Wahi Pana	Type	Location/ Place Name	Associated Mo‘olelo/ Other Oral History <sup>1</sup>	Current Disposition	Comments <sup>2</sup>
Lower Kalihi Stream Lo‘i & Settlement Area	Lo‘i kalo (irrigated taro) & House sites	“Extensive terraces covered all the flatland in lower Kalihi for approximately 1.25 miles on both sides of the stream” (Handy 1940)	--	Filled in by urban development	--
Upper Kalihi Stream Cultivation Area	Gardening Terraces	About 2.5 miles upstream/inland, “there are numerous small areas that were developed in terraces” (Handy 1940)	--	Indeterminate – many are likely intact and still up in the upper reaches of the valley	--
Holoakekua (1,150 ft elevation)	Natural rock (outcrop) feature – ahupua‘a boundary marker	Ridgeline between Kalihi & Kahauiki	--	Presumably still intact, given its location	--
Kupehau	Storied place/area	~Ewa side of Kalihi Stream	Locally-famous pōhaku (stone) in stream w unique features; also place of an old house sites for chiefs of Hawai‘i; visited by Kamehameha	Indeterminate	Also known as “Ka- elemu-wai o Kalihi and Kupehau
Pu‘u Keanakamanō	Natural rock (outcrop) feature – ahupua‘a boundary marker	Ridgeline between Kalihi & Kapālama	--	Presumably intact	--

Wahi Pana	Type	Location/ Place Name	Associated Mo'olelo/ Other Oral History <sup>1</sup>	Current Disposition	Comments <sup>2</sup>
Ka'ie'ie	Place/area where old heiau once stood	Hakaio ridge	"In her human body as Papa, Haumea lives on Oahu as wife of Wakea; in her spirit body as Haumea she returns to the divine land of the gods in Nuumealani . . . Some place these transformations on Oahu at the heiau of Ka-ieie built for her worship in Kalihi Valley" (Sterling and Summers 1978)	Indeterminate	Thrum said it was more or less destroyed about a century ago, called it an agricultural ("hoouluai") heiau; this area and heiau associated with other old heiau about which information has been lost (Kaoleo and Haunapo)
Pōpō'ulu	Natural rock feature/steep cliff/storied place	Uplands of Kalihi near Ko'olau ridge	Associated with Kapo on the other side of the valley;	Presumably intact	Place known as Kamoho-ali'i, one of the earliest demi-god/people of old
Pu'unukohe	Natural rock feature near the Ko'olau ridge	Near Kapo and Pu'u Lanihuli; and Wilson Tunnel	Two famous pōhaku, Hapuu and Kalaihauola	Pu'unukohe is still there, but the two pōhaku, Hapuu and Kalaihauola, were supposedly destroyed in 1950s	Destruction of the two pōhaku related to Wilson Tunnel construction in 1954
Pu'u Lanihuli (2,200 ft. elevation)	Summit/top of ahupua'a; boundary w Kapālama	Ko'olau ridge	--	Presumably intact	--
Kapo	Natural rock feature/storied place	Uplands of Kalihi near Ko'olau ridge	Associated with Pōpō'ulu on the other side of the valley;	Presumably intact	Kapo was one of the earliest demi-god/people of old, a daughter of Haumea; Kapo has other names, including Laka, goddess of hula

Wahi Pana	Type	Location/ Place Name	Associated Mo'olelo/ Other Oral History <sup>1</sup>	Current Disposition	Comments <sup>2</sup>
Pu'u Kahuauli (2,200 ft. elevation)	Summit/top of ahupua'a; boundary w Moanalua	Ko'olau ridge	--	Presumably intact	--

Notes:

<sup>1</sup> References for more information on "Associated mo'olelo/other oral history" are listed in this column, where applicable.

<sup>2</sup> General references used in compiling information in this table include McAllister (1933), Pukui et al. (1974), Sterling and Summers (1978).

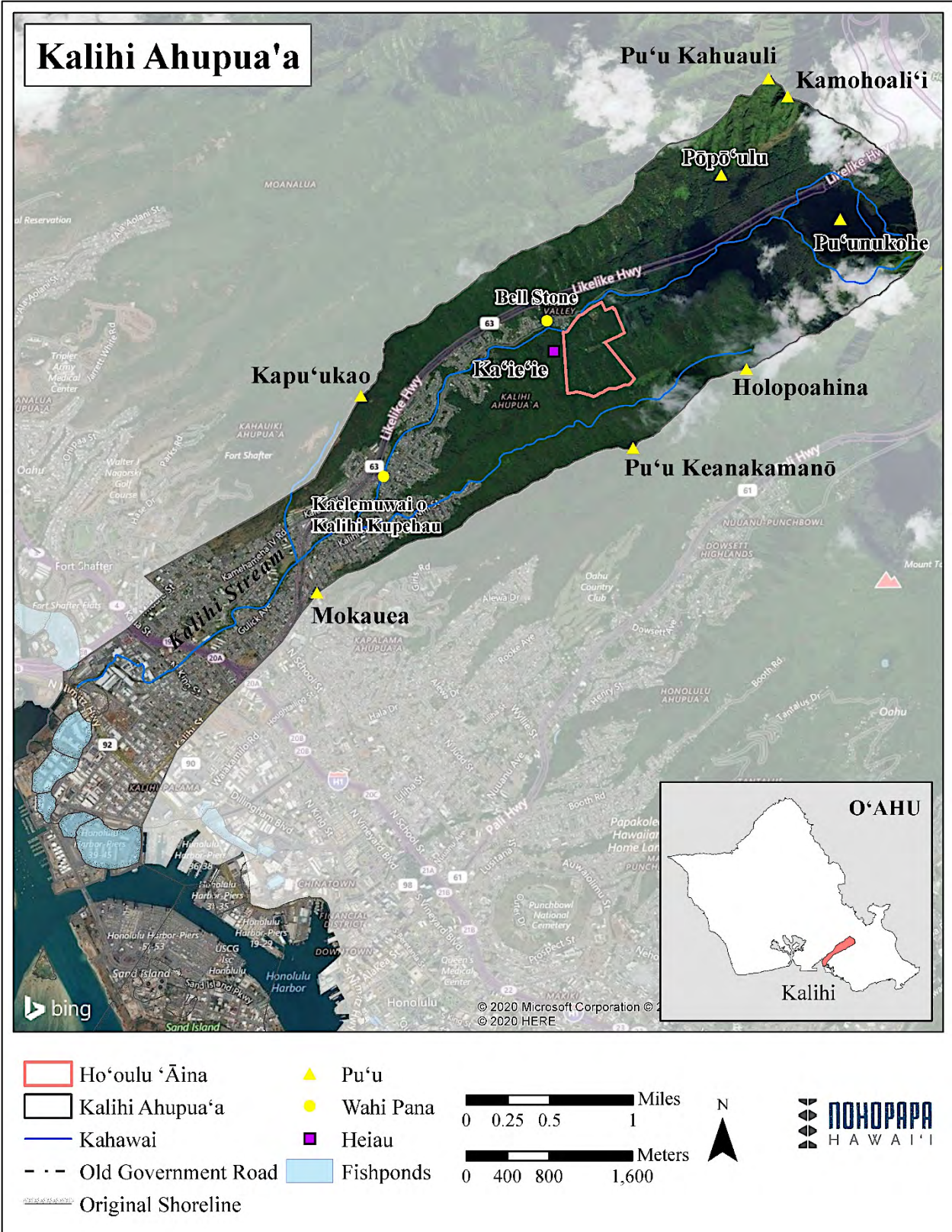


Figure 17. Aerial imagery locating traditional places within Kalihi Ahupua'a, Ho'oulu 'Aina study area highlighted in red.

## PREVIOUS ARCHAEOLOGICAL RESEARCH

This section provides a review of previous archaeological studies within or immediately relevant to the HĀ park. After presenting an overview of previous archaeological work, we discuss archaeological sites in the park.

Only two archaeological studies have been conducted within the 100-acre park -- one in 1980 and the other in 2005. Thrum's identification of a significant heiau in Hawaiian history is included here because of its proximity to the park.

### 1906 Thrum

Thrum identifies Ka'ie'ie heiau as being of ho'oulu'ai class, in Kalihi-uka, and "on the premises of Dr. Huddy." The 'Ili Ka'ie'ie is adjacent to HĀ to the west, is only 27-acres, and shares its entire eastern border, a little under 2,000-feet, with HĀ (see 'Ili map in Figure 5).

### 1980 Connolly - Archaeological Reconnaissance Survey

An archaeological reconnaissance survey was done in 1980 by Richard Connolly of Archaeological Research Associates, for what at that time was the proposed Park site. It should be acknowledged that the recommendations resulting from this survey were thoughtful and concise, they looked not just at individual archaeological features, but at Maluawai as a place, and considered Hawaiian agricultural systems as a whole (Connolly 1980:9-11). Features were not located by GPS, however a sketch map and photographs were included (photos included in Appendix B).

Connolly observed significant alterations to the landscape that were on-going in the 1980s; occupied residences, commercial operations, and illegal dumping.

Historic structures on the proposed park site included two houses, presently occupied and two private nurseries, presently in commercial operation. Other historic modifications to the park site include (1) several jeep trails, previously paved, but now in a state of disrepair; (2) several of what appear to be either borrow pits or bulldozed house lots; and (3) several large grassy fields that may have been previously bulldozed or artificially leveled. Many pieces of abandoned, rusted machinery—mainly automobiles—were seen during the survey, which demonstrated that at least portions of this area have been used historically as a dump. (Ibid:5-6).

This study identified an "agricultural complex" which has been designated SIHP site number 3980. The bounds of the site were approximately drawn on a map and recommended for "Intensive Survey." This agricultural site consists of smaller identified features, including 'auwai (traditional irrigation ditches), terraces, and retaining walls; it spans the border of the 'Ili Maluawai and Ouaua it is about 6-acres in size (see Figure 5). Portions of this identified area were sub-designated as temporary sites 15-years later by Kounesky et al.

### 2005 Archaeological Assessment

The purpose of a 2005 Archaeological Assessment (AA) by Kouneski et al., was to "identify sites and determine their general location on the property."

What the AA did not do:

- Compiled no oral histories or comprehensive LCA research.

- Made no significance determinations -- the report conclusion defers assignment of any significance designations, per the National Register of Historic Places criterion, to “future research.”
- Completed no subsurface study.
- Conducted no sketch maps or survey maps of sites.
- Collected no GPS data.
- Included no site photographs.
- Did not address the 1980 Connolly area recommended for intensive survey nor did it add specific clarification to the extent or bounds of SIHP 3980.

What the AA did do:

- Identified sites in the accessible terrain ~47% of property.
- Created an “approximate” map depicting site locations (Kouneski et al., 2005:33, see Appendix A).
- Identified 11 sites.



## Summary of Previous Archaeology

### ***Site Locations***

Sites have been located on the property, however, the accuracy of their location is not ideal -- all current site maps are only approximations. As part of HĀ's Master Planning process, planners and community members were engaged to compile detailed maps of the property, hydrography, contours, existing structures, and future plans. Although not specifically commissioned to better understand the archaeological sites, the HĀ Master Plan maps probably most accurately display the park locations of historic properties, 'auwai, traditional wall remnants, and terraced areas.

### ***Traditional Hawaiian Agriculture***

There is the remnant of ancient Hawaiian kalo growing infrastructure, 'auwai, lo'i, possibly a mānowai or poowai, and possibly cleared or platformed areas for pā hale and other uses. An interview in the 2005 CIA (Palama) confirms the presence of these fields, overgrown with California grass in the 1950s. The Connolly study (1980) confirms that these structures, terraced fields with traditional water diversions, still exist on the property. A 2005 Archaeological Assessment supports this, and knowledgeable HĀ land managers, some with extensive kalo farming experience, agree.

### ***Previous Archaeological Recommendations***

Some confusion exists regarding site recommendations from the 2005 Archaeological Assessment (Kouneski et al.). In two places, the authors recommend extensive future work for "all sites" (Ibid:32, 33). They explain that the work should be "in the form of plan mapping, subsurface testing and document research ..." Additionally, the work should include an assessment of Significance after the determination of "function and age of sites."

After an intensive review of the document, including the 'Site Description portion of the AA (Ibid:22), we can see that at least two sites and almost all of the features in another do not appear to contain any requirements or recommendations for future work including any plan mapping and/or subsurface testing. Additionally, the function and age of sites are already known. This remains somewhat perplexing and confusing.

Site 3, nursery site, is acknowledged as having several historic components, and the AA reports: "Many [sites] have been added or modified in modern times and will not need to be considered further in the survey" (Ibid:22). The site features appear to lack the significance criterion for the National Register of Historic Places (NRHP), they also appear to lack integrity; this is elaborated on and supported by information in the 2005 CIA by Palama (see interviews) and the HĀ Master Plan.

Site 6, a home built by the Marek's in the late 1950s, is described as being "in various stages of deteriorating condition." It has also been added to over time per the Kouneski et al. AA (2005:26-7) and per the granddaughter of the original owner, Ms. Toni Alatan, in the Palama CIA (2005:33-43). Based on this first hand account and the AA description, this structure clearly lacks integrity and Significance Criterion to be eligible for the NRHP. The stories that Ms. Alatan shared about her "ancestral home" are important for the historical record (Ibid).

Site 8, a "small dilapidated house, a stone retained slope...a small rectangular pump house, a well and a stream bank retaining wall made of cement block, stone and mortar" (Kouneski et al., 2005:28). These features are assigned, respectively, B, A, C, D, E. Ms. Toni Alatan remembers a

bootlegger living in the shack, she also shared stories about the pump house, the well, and the spring.

The site description also mentions that the well and pump house were “utilized in the early 1900s to collect water from a spring located along the stream. The spring is located at the end of a small gulch” (Ibid). Interestingly, this pūnāwai, spring, was not given a feature letter or looked at during the 2005 Archaeological Assessment.

### ***HĀ Park Impacts in the Historic & Modern Era***

This 100-acre Kalihi valley park has been under heavy use since the post-European contact of the Hawaiian Islands. At the time of the Māhele, by the mid-1850s, most of the HĀ property was grassland, with few trees, as a result of cattle (HĀ Master Plan, 2013). Reforestation, resulting in the current introduced vegetation, wasn’t established until post 1930 (Palama, 2005, interviews in Appendices).

At some point in the 1800s and possibly into the 1900s, there was Chinese farming in the area if not within the park itself (Palama 2005). The 1900s saw a period of intensive use as a nursery, eventually families owned and lived on portions of the park, and finally we see a more recent period marked by illegal dumping and illicit use. All of these land use phases might have negatively impacted some of the original and traditional Hawaiian cultural sites within HĀ. Interestingly, some of the remnants of these various land use phases are now considered historic.

Existing HĀ park research supports the notion that many of the on-site historic structures (Temporary sites 3, 6, and 8) were used into modern times but fell into disrepair or were vandalized.

The sites described in the 2005 Archaeological Assessment (Kouneski et al.) along the western border (Temporary sites 1 and 2) and at the northeast corner (Temporary site 10) could be traditional Hawaiian sites similar to those located to the northeast of the HĀ park on Board of Water Supply lands. These features were surveyed by Aki Sinoto (1988) who suggested that “the placement and characteristics of the features indicate historic/modern period erosion control functions, most likely related to watershed maintenance, forestation, siltation control, or roadways” (Ibid).

These possible traditional Hawaiian sites might have been impacted by historic use but still seem to be significant in their remnants. The central park terraces and ‘auwai are Hawaiian in origin. HĀ is looking to interpret, preserve, and restore this area.

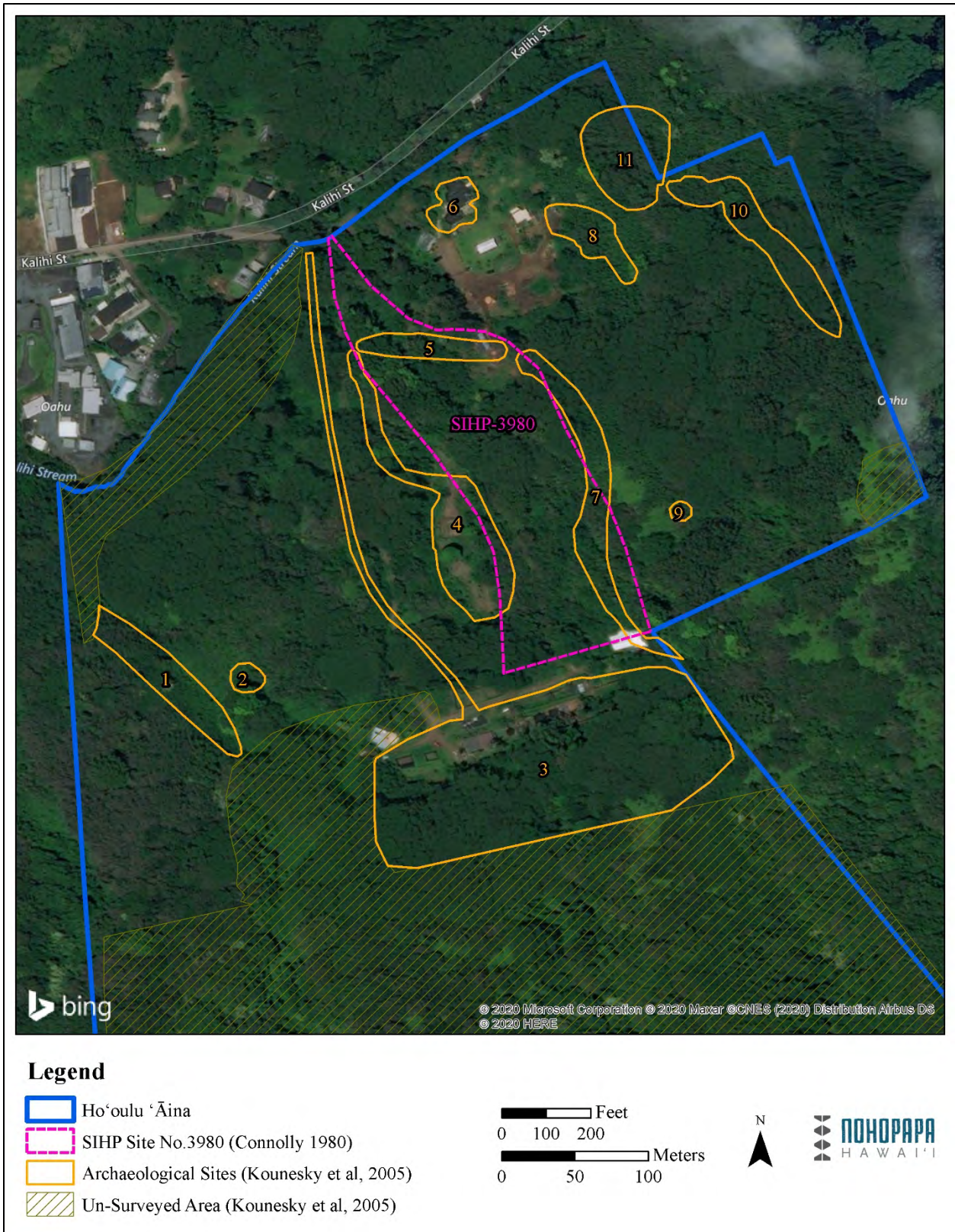


Figure 18. Aerial imagery showing archaeological features identified within the Ho'oulu 'Āina study area as “approximately” located by previous studies.

Table 3. Table of previously identified historic sites within the HĀ Park. Please note that site numbers correlate with Figure 18; all are temporary site numbers except for SIHP site no, 3980, which is on file with the SHPD.

Site Number	Source	Feature	Type	Provenance	Function	Notes	HĀ Master Plan Area
1	Kouneski et al. 2005	A	Stream bank retaining walls	Undetermined	Water diversion	Stacked small boulders, intact, faced in N. probably extends south along stream (not surveyed)	Site(s) is within the "Protected Native Forest" portion of the HĀ Master Plan footprint.
		B	Rock walls		Water diversion	Parallel stone walls, perpendicular to stream & earthen ditch extending uphill	
		C	‘Auwai		Water diversion, into stream.	Linear rock mound, parallel to gulch. posited it was for water channeling during heavy floods	
		D	‘Auwai		Water diversion	Low mounded wall on NE side of stream	
		E	Aauwai		Water diversion, into stream.	Free standing wall parallel to gulch. forming side of stream bed for 10m in open, then extends into dense hau & was not followed.	
2	Kouneski et al. 2005	N/A	Midden	Historic	Habitation related	Possible historic refuse scatter	
3	Kouneski et al. 2005, Palama 2005	N/A	Nursery	Historic to Modern	Commercial nursery, road, and habitation	Constructed ~1950, used intermittently through 1980s.	Existing: Protected Native Forest area, Caretaker’s Yurt, Shade House, Hale Imu, Bunkhouse, Shed, Tea House  Planned: Shed, Storage workshop/ machine repair, composting toilets, hale for Programatic growth

Site Number	Source	Feature	Type	Provenance	Function	Notes	HA Master Plan Area
<b>SIHP 3980</b> (Temp #s 4, 5, & 7)	Connolly 1980, Kouneski et al. 2005, Palama 2005	4.A	Stream bank retaining walls	Traditional Hawaiian	Agriculture and/or water diversion	Infrastructure for kalo farming with sites and features associated with the traditional cultivation of kalo in a wetland agricultural system.	Master Plan proposes: Archaeological Survey, Native Food Production, Trail Management, Restoration, Tool shed/hale
		4.B-D	Rock mounds				
		4.E	Rock alignment				
		4.F	Terrace & rock mound				
		4.G-K	Terraces				
		4.L-O	Rock mounds				
		4.P	Terrace				
		5.A	Stream bank retaining wall		Posible habitation		
		5.B	Terrace				
		5.C	Stone platform		Agriculture and/or water diversion		
		5.D	Stream bank Retaining wall				
		5.E	stone dam				
		7.A	Stream bank retaining walls				
7.B	Rock mound						
<b>6</b>	Kouneski et al. 2005, Palama 2005	N/A	Historic house	Historic to Modern	Modern Habitation	Main house alongside Kalihi Street. Constructed in the 1930s, the house has been occupied, renovated and added on to intermittently well into the modern era.	For existing structure(s) Master Plan proposes installation of photovoltaic panels, courtyard resurfacing, and the installation of a retaining wall to support the hale, Cistern upgrades  Proposed complex additions: Halau Waa, Machine baseyard, Widen Gate, Food Production, Fencing, Exhibition space.

Site Number	Source	Feature	Type	Provenance	Function	Notes	HÁ Master Plan Area
8	Kouneski et al 2005	A	Stone-retained slope	Undetermined	Habitation related		Site(s) is within the "Protected Native Forest" portion of the HÁ Master Plan footprint.
		B	Dilapidated house	Historic			
		C	Pump house				
		D	Well	Undetermined			
		E	Stream bank retaining wall				
9	Kouneski et al 2005	N/A	Rock mound	Undetermined	Boundary/land mark		Protected Native Forest
10	Kouneski et al 2005	N/A	Stream bank retaining wall	Undetermined	Water diversion		Protected Native Forest
11	Kouneski et al 2005	A	Historic refuse site	Undetermined	Habitation		Food Production, Fencing
		B	Rock alignment	Undetermined	Habitation		
		C	Historic midden scatter	Undetermined	Habitation		

## RECOMMENDATIONS AND NEXT STEPS

KKV, the current land manager of Ho‘oulu ‘Āina, appears intent on better appreciating, preserving, and restoring traditional Hawaiian cultural sites and practices within the 100 acre Park lands (HĀ Master Plan, 2013). This section specifically addresses the HĀ Master Plan Site Plan as it pertains directly to historic properties. In this section, we identify areas that require additional research as well as areas so heavily impacted over time that they should be excluded from future surveys. Information gaps, where relevant, are presented and recommendations are offered.

### Site-by-Site Recommendations

The following management recommendations for Ho‘oulu ‘Āina are based on all available information gathered from this study, including archival research, first-hand observations, surveys, community interviews, critical assessments by the authors of this report, and HĀ’s long term master planning maps.

#### ***Temporary Site numbers 1 and 2***

Site 1 is a series of adjacent and in stream features including stacked walls, mounds, and retaining walls described as water diversions (Kouneski et al., 2005:21, See Appendix A). These features are possibly traditional Hawaiian in origin. However, because similar structures were interpreted on the opposite side of Kalihi stream, these features may be “related to old Kalihi Street construction” (Sinoto et al., 1988:5).

Site 2 is a “possible historic refuse scatter,” that might be “habitation related” (Ibid:22).

These two sites are located in the northwest of the project area within the “Protected Native Forest” area of the HĀ Master Plan footprint. Currently, no activities, structures, etc. are being planned or proposed that would impact these properties.

At this time, preservation in place and no archaeological work is recommended for these site(s). If plans change, these features should be considered for future review based on the proposed actions.

#### ***Temporary Site number 3***

Site 3 is a nursery, the remnant of the road accessing the nursery, and a house associated with it. Some of these features were established in historic times (50-years or older), and all were used into the modern era. The nursery and this area are associated with significant earth movement tied to soil mining and the sale of that soil through nursery activities.

Kouneski et al. indicate no for future work for this site (2005:22). Based on this and the description of these features, in addition to interviews from the Palama CIA (2005, Appendices), these features are found to lack the Significance criterion to merit consideration for the NRHP. Additionally, these features appear to lack integrity.

No future archaeological work is recommended for Temporary Site number 3.

### ***SIHP Site 3890 – includes Temporary Site numbers 4, 5, and 7***

This site is traditional Hawaiian in origin based on the terrain, Māhele documents, interviews from the 2005 CIA (Palama), a 1980 Archaeological Reconnaissance (Connolly), a 2005 Archaeological Assessment (Kouneski et al.), and firsthand accounts from HĀ staff and community.

The site consists of at least three series of ‘auwai (stone lined ditches) that feed a series of terraced lo‘i kalo (irrigated taro fields) which make up an agricultural complex in the central area of the park; they are also interspersed with standing and retaining walls, a possible platform, rock mounds, and alignments.

The ‘auwai and terraced fields “remain in varying stages of disrepair.” (2014 HĀ Master Plan) This general agricultural system was given SIHP site number 3980. Figure 18 shows a modern map derived from the agricultural complex as mapped in 1980 (Connolly). Its boundaries, as with those of the features identified in the 2008 AA (Kouneski et al.), were approximated.

- At this time, it is recommended that the bounds of this site be better defined, described, and interpreted. Previous archaeological studies have provided only approximations of site locations; and more accurate boundaries should be established.
- A clearer understanding of the number of terraces and lo‘i contained, as well as other features would be important to better understand what this agricultural area can tell us about the people who once cultivated it.
  - ‘Auwai centerlines should be GPS’d in (signal allowing)
  - Sites and general features should be GPS’d in (signal allowing) to better understand the layout of the lo‘i kalo system.
- Future studies should attempt to locate possible pā hale, as it is possible that house sites would have been part of such intensive kalo infrastructure. The Archaeological Assessment indicates possible habitation locations to re-visit and assess.
- Future studies should also consider radio carbon dating of the agricultural walls (with charcoal speciation) to better understand provenance and use over time.
- Future studies should consider the long term benefit of mapping in the features of the system as they relate to each other. Mapping should be done prior to alterations of the field system.

### ***Temporary Site Number 6***

Site 6, is the main house on the property. Built in the 1930s, it sits just off Kalihi Street. The interview with Ms. Toni Alatan contributes greatly to the historical context of the house.

The HĀ Master Plan includes work at the site of the main house, as it is in the operational center of the park, including installation of photovoltaic panels, courtyard resurfacing, and the installation of a retaining wall to support the hale. While the house was built in the 1930s, add ons were conducted in a haphazard fashion into the modern period (Kouneski et al., 2005 and Palama, 2005: interviews in Appendices).

No further archaeological work is recommended for this feature.



### ***Temporary Site Number 8***

Site 8 consists of four features, a stone-retained slope, a “dilapidated house,” a pump house, a well, and a mortar stream bank retaining wall. This collection of features is located in the northeast corner of the park, within the “Protected Native Forest” area of the HĀ Master Plan footprint. Presently, no activities, structures, etc. are planned or proposed that would impact these properties.

It is likely that the condition of the small “dilapidated” house and pump house might not warrant future work, definitely not the plan mapping or subsurface testing suggested in the 2005 Archaeological Reconnaissance. The pump itself, the well, the retaining wall and the actual pūnāwai should be assessed and considered in any future studies. Ms.Toni Alatan conveyed stories about this pūnā in her interview in the 2005 CIA (Palama).

Preservation in place and no archaeological work is recommended for these site(s) at this time. If plans change these features should be considered for future review based on the proposed actions. If a future study looks at this Site, in addition to the features described in the 2005 Archaeological Assessment (Kouneski et al.), the pūnāwai, the spring that feeds the well and pump, should be located and considered.

### ***Temporary Site Number 9***

Site 9 is an ahu constructed of cobbles and a boulder and is tentatively interpreted as being a boundary marker.

This site is located in the “Protected Native Forest” area of the HĀ Master Plan footprint. At this time, no activities, structures, etc. are planned or proposed that would impact this feature.

Currently, preservation in place and no archaeological work is recommended for this site. If plans change, this feature should be considered for future review based on the proposed actions.

### ***Temporary Site Number 10***

Site 10 is a stream bank retaining wall whose function is described as water diversion by Kouneski et al. (2005:29). Possibly, it is traditional Hawaiian in origin. However, because similar structures were interpreted on the opposite side of Kalihi stream, it might be “related to old Kalihi Street construction.” (Sinoto et al, 1988:5)

Located in the eastern boundary of the park, this feature is within the “Protected Native Forest” area of the HĀ Master Plan footprint. At this time, no activities, structures, etc. are planned or proposed that would impact these properties.

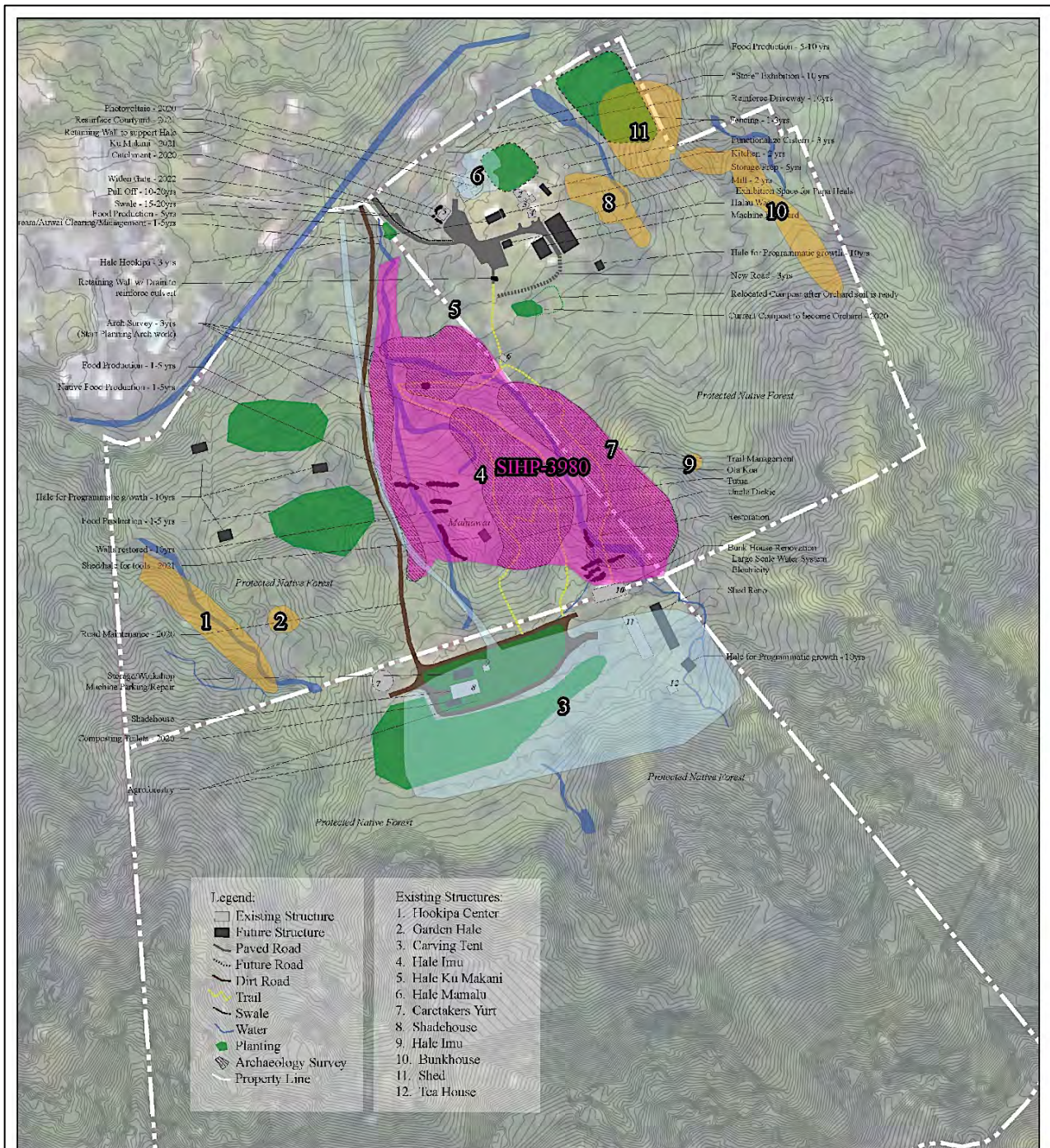
Presently, preservation in place and no archaeological work is recommended for this site(s). If plans change, these features should be considered for future review based on the proposed actions.

### ***Temporary Site Number 11***

Site 11 includes three features -- two historic refuse scatters and a stone alignment that are associated with a temporary habitation site (Kouneski et al., 2005:29-30). In fact, Ms.Toni Alatan (Palama, 2005) explained that a bootlegger once lived in a shack at this location.

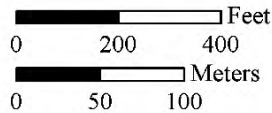
Located in the in the northeast most corner of the park, this feature is within the “Protected Native Forest” area of the HĀ Master Plan footprint. At this time, no activities, structures, etc. are planned or proposed that would impact these properties.

Currently, preservation in place and no archaeological work is recommended for this site(s). If plans change, these features should be considered for future review based on the proposed actions.



**Recommendations Site Map**

- No Future Work
- Preserve in Place, No Additional Work at this Time
- Additional Survey Recommended



\*Letters in bold with white halo correspond to Temporary site numbers (Kouneski et al, 2005)

Figure 19. Archaeological Recommendations of this Addendum depicted over Ho'oulu 'Aina Master Site Plan.

## Recommendations Summary

This report fulfills the 1980 (Connolly) recommendation for a literature search “to ascertain if any additional recorded information exists pertaining to the project site area.” In particular, this report contributes the identification of Ka‘ie‘ie heiau, which would have been located in the neighboring ‘ili of Ka‘ie‘ie as particularly important to understanding the history of the park, and the potential importance of the HĀ Park’s agricultural systems to the area.

The only site we are recommending additional work for, at this time, and based on actions outlined in the HĀ Master Plan and Master Site Plan, is SIHP site number 3890 (Connolly, 1980), which includes temporary site numbers 4, 5, and 7 as described above and depicted in Figure 19.

We recommend preservation in place, at this time for temporary site numbers 1, 2, 8, 9, 10, and 11. If plans change these features should be considered for future review based on the proposed actions.

We do not foresee the need for future archaeological work at temporary site numbers 3 and 6, and recommend no additional surveys for these features.

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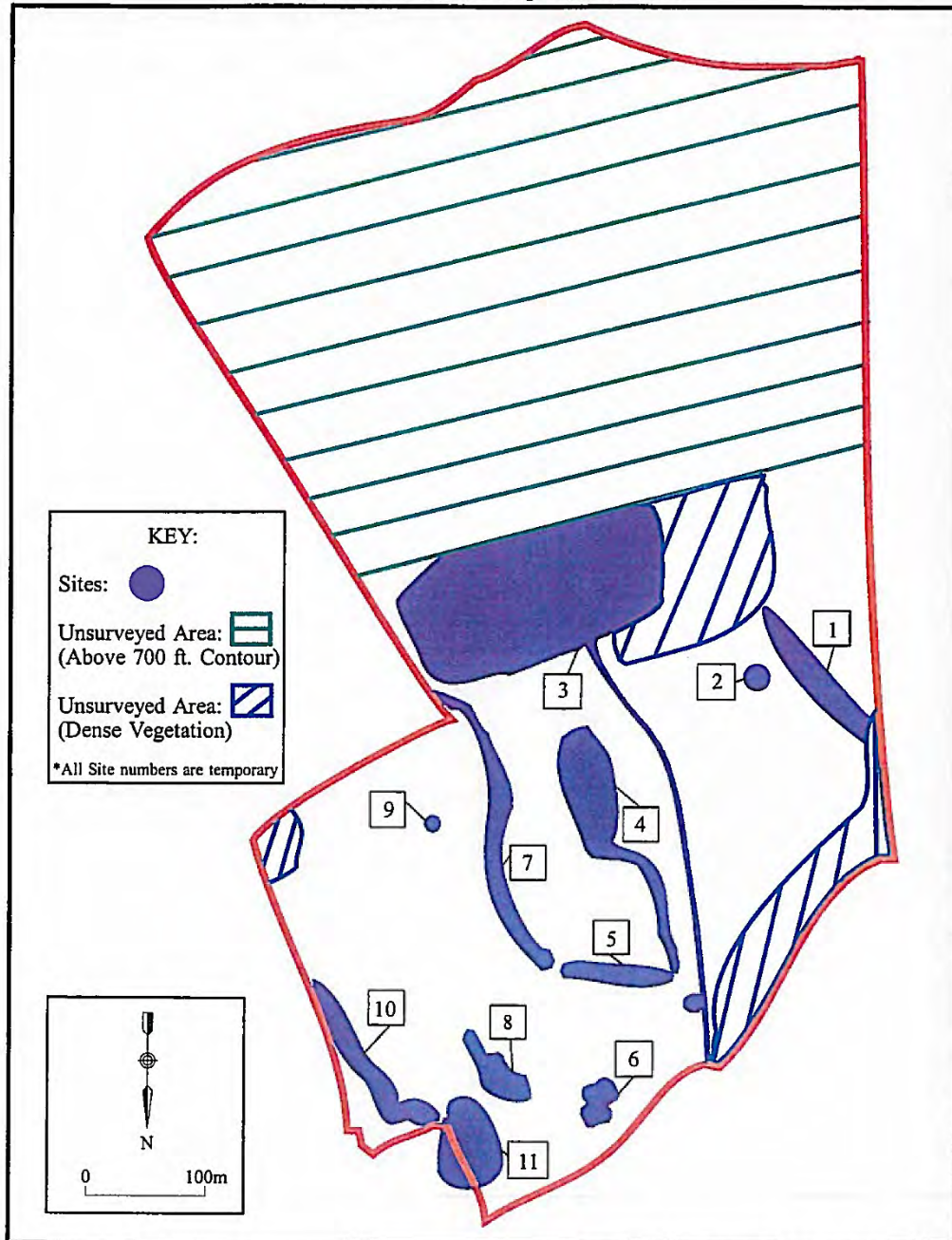
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**APPENDIX A – Site Descriptions from 2005 Archaeological Assessment (Kouneski et al., 2005:20-30).**

Figure 7: Subject Property Site Plan



Kalihi Ahupua'a  
 TMK: 1-4-14: 01 & 26 and 1-4-16: 03

Archaeological Consultants of the Pacific, Inc. 2005

## Section 5.1: Site Descriptions

### *Site 1*

Site 1 is comprised of stream bank retaining walls that line the major water channel (intermittent streambed) in the western-most gulch on the property. In addition, secondary *auwai*-like water diversion rock mounds run above the streambed in some areas, and perpendicular to the streambed, diverting water into the stream, in other areas.

**Feature A** –This feature consists of stream bank retaining walls, intact and faced in only a few portions of the lower (northern section) of the stream. Each intact section measures about 1-2 m. in length, and consists of small boulders stacked three to four courses high varying in height between 0.5m and 1m. The survey of this gulch began just above its 30 foot cliff that drops down toward Kalihi Stream. About 50-75m above this cliff along the gulch, the stream becomes thick with *hau*. Following the present scope of work, the archaeologists could not proceed further along the stream due to the vegetal restrictions. Additional stream bank retaining walls are likely to exist throughout the *hau* area, and may be well-preserved.

**Feature B** –This feature consists of two parallel stone walls running perpendicular to the main stream channel. The walls are 3-4 m apart and extend up the stream bank hillside for 2-3 m. A ditch without stone lining or walls extends for another 10m up the hillside from the end point of the walls. This feature appears to be an *auwai*-type structure diverting or channeling water off the hillside ditch into the main streambed.

**Feature C** –Further up the ditch on the east side, across from a large banyan tree is the beginning of a linear rock mound. It runs parallel to the gulch (SE/NW) about 2m to the west of the streambed and measures 7m in length. The mound is 0.8 m wide and less than 0.5 m in height. It consists of small boulders measuring 20-30 cm in diameter. This is considered an *auwai*-type feature that probably served to keep water within the streambed path during heavy floods.

**Feature D** –This feature begins about 10m further E/SE up the streambed from Feature C. It consists of a low, mounded wall that begins about 1m above the stream on the NE side and extends for 3m further N/S, perpendicular to the streambed. A large tree is growing out of the middle of the feature. Again, its function appears to be associated with diverting water into the stream.

**Feature E** –Two meters further up the streambed from Feature D is Feature E, a free-standing mounded boulder wall consisting of small boulders that runs parallel to the gulch. At this position, the streambed is shallow, and the mound appears to form one side of its wall. The wall is about 0.8m wide and 0.5-0.8m in height. At one time, the wall may have been bi-faced, core-filled, but at this time, no specific construction method could be identified. It extends for 10m into dense *hau* and appears to extend further, but the archaeologists could not investigate the area due to vegetal restrictions.



### *Site 2*

This refuse site is located on the ridge to the east of the western-most gulch (Site 1). The site appears to be in the vicinity of the proposed shelter/*halau* and hiking trail area for the Kalihi Valley Nature Park (see Figure 6). On the ridge, the terrain flattens. A refuse site, covering an area measuring 5m in diameter, is located on this level area and the top portion of the western slope of the ridge. A number of glass bottles and jars of clear and brown glass were encountered. Dates could not be determined for these bottles in the field. No samples were collected at this time.

### *Site 3*

This site consists of features associated with the nursery on the upper section of the property. The features include a house, a driveway and other road cuts, a number of large sheds and storage facilities, and a small abandoned equipment shed and metal tank located along the lower portion of the old easement driveway. The nursery residence is a utility style home built on the top of the bank along the middle gulch. Reinforcement walls made of cinderblocks and stones line the hillside on which the house is located. The house itself has plywood walls, and corrugated roofing. Its construction appears to be modern, although it may have been standing before 1950 and has since been modified. Behind the house is a large area that appears to have been mechanically leveled. Three large storage facilities in this level area contain old cars, piping, wood, planting pots, and other refuse once utilized by the nursery. Behind the house about 50m south is a small Japanese tea house associated with the Buddhist monastery adjacent to the subject property. It is abandoned and in deteriorating condition. An old driveway ran from Kalihi Street up to the nursery grounds and small portions of asphalt remain along this pathway today. Along the lower part of this roadway near Kalihi Street is a dilapidated equipment shed containing electrical boxes, metal debris, watering cans, wood, etc. A metal tank stands next to the shed. It is rusted through in many places, and it stands about 3m high with a diameter of about 1.5m. According to informant testimony, the nursery was constructed just before or around 1950, abandoned for a while, then re-used until the early 1980's. Therefore, while some of these sites associated with the nursery are historic, many have been added or modified in modern times and will not need to be considered further in this survey.

### *Site 4*

This site extends throughout the gulch and intermittent streambed that runs along the nursery's driveway easement. The site consists of stream bank retaining walls, a number of stone mounds both free-standing and contoured to the slope, a few water diversion walls/terraces or dams, and four major agricultural terraces. There appears to have been significant amounts of soil deposited in this low-lying gulch area between two ridges.

**Feature A** (see Figure A1) –This feature consists of the stream bank retaining walls that run along the gulch. The facing does not occur continuously along the total length of the feature. It occurs on both sides of the gulch in some areas, and only on one side in other portions. The first intact facing on the stream bank walls occurs about 30-40m south of where a stream branches to the east of the main stream. This facing runs for about 4m on one side of the bank, then becomes tumbled. About 30m further south up the stream, the ditch is lined on one side with small to medium boulders 30-70cm in diameter, stacked five courses high. About 13m further south, the stream becomes lined with retaining walls on either side. The gulch is about 1m wide at this point. 20m to the south is Feature B (a stone mound). The streambed continues for another 30-50m then ends in four large agricultural terraces. Above the terraces the streambed is defined again and is lined on the west side. Here the wall that lines the ditch appears to have been free-standing at one time, but soil has accumulated on the back side making it appear to be a retaining wall built into the stream bank. This portion of the wall can be seen extending for 20m further south along the streambed. At this point, the vegetation became impenetrable, and following the present scope of work, the archaeologists did not pursue this feature further.

**Feature B** (see Figure A2) –This feature is a stone mound contoured to a small slope. This is the first of four rock mounds that run east up the valley alongside the streambed. At this location the stream is oriented 60/240, or almost E/W. Feature B is faced on the west side, standing four to five courses high. The exterior height from the existing surface is 1m on the west side. The mound has three sides, with a width (east to west) of 3.4m. The surface of the mound is fairly level and rock-filled. Some of the mound appears to be incorporated into natural outcrop. The function of these mounds is indeterminate at this time.

**Feature C** (see Figure A2) –This feature is a rock mound with no faced walls. Its dimensions are 2.1m (N/S) by 1.6m (E/W). It is 0.7m in height and is composed of sub-angular cobbles and small boulders and one natural rock outcrop. It is located about 3.2m east of Feature B.

**Feature D** –This rock mound was once formally stacked on one side, but is mostly tumbled now. Some natural outcrop was also incorporated into the feature. It measures 4m (N/S) by 3.5m (E/W) with an exterior height on the north of 1.1m. The feature, composed of large and small boulders, is cobble-filled. It lies 3.5m east of Feature C.

**Feature E** –This small stone alignment runs parallel to the streambed further south of Feature B. It is partially buried in soil and lines a small rise, running for 2-3m.

**Feature F** –This feature consists of two parts, a terrace or stone-retained slope and a mound built on top of the western end of this terrace. The total length of the terrace portion is 15m and runs SE/NW along the streambed. The exterior height of the terrace on the southeastern end is 0.76m and on the northwest is 1.1m. On the northwest end, another smaller wall runs parallel to the terrace and appears to be of the same construction period. The terracing and parallel wall is made of large and medium

boulders and large cobbles. Between the two walls at the northwestern end is a mounded area that extends another 0.4 m on top of the terrace. The width is about 1.5m between the two walls and it runs for 3.5m, the length of the smaller wall. The mound appears to be part of a later construction period, and it consists of loosely piled cobbles that fill the area between the two walls.

**Feature G** –This feature serves as a small dam for water diversion purposes. It was constructed between two forks in the streambed. It appears to have been faced, and stones are still partially stacked 5-6 courses high. The height is 1m and the width is 4m by 2.5m.

**Feature H** (see Figure A3) –This feature is the first of four agricultural terraces. It runs west to east for 11m and ranges in exterior height from 1 to 1.2m. The east portion of the wall is built up 0.6 m above the surface on the interior of the terrace. This built-up portion extends for 3m. The terrace wall is five to six courses high and composed of large cobbles, small boulders, and boulders. The west end of the wall is tumbled, but at one time, it probably extended to the bank of the low area in which it lies. A large banyan tree grows out of the middle area of the terrace.

**Feature I** (see Figure A4) –12.2m south of Feature H is the second agricultural terrace, Feature I, which runs 250/70 for 15.5m. The exterior height is 1.1-1.2m on the eastern end and 1.5m on the western portion. This terrace is similar in construction to Feature H but is entirely contoured to the slope and therefore has no interior height. A large banyan tree grows adjacent to this terrace as well.

**Feature J** –This terrace lies 8.5m to the south of Feature I. It is considerably shorter in wall height than the previous two. It is 9m long and runs 250/70. The exterior height on the eastern end is 0.5m. A banyan tree grows at the western end of this terrace.

**Feature K** –The fourth terrace is 8.6m to the south of Feature J. It is 12m long and oriented at a bearing of 210/30. On the eastern end, the exterior height is .9m.

**Feature L** (see Figure A5) –Further south of the last terrace the gulch is lined again. To the east of the gulch are four mounds and a terrace/ stone-retained slope running along a line oriented N/S. Feature L is the northern-most stone mound. It is partially contoured to the slope with an uphill height of 0.26m and a down slope (exterior) height of 0.97m. It measures 1.7m E/W by 1m N/S. The mound consists of small cobbles and small boulders stacked five courses high on the down slope (western end).

**Feature M** –Feature M is 3m south of Feature L. It measures 1.8m wide on its E/W axis and 2.6m N/S. It is contoured to the slope, and on the down slope end, the height (exterior) is 1.3m. It consists of cobbles and small boulders but some large boulders and bedrock are also incorporated into the structure.

**Feature N** –2m further southeast of Feature M lies Feature N, a stone mound, mostly tumbled. It measures 2.2m E/W and 1.3m N/S with an exterior height on the down slope of 1.3m.

**Feature O** (see Figure A5) –This stone mound lies 2m south of Feature N. This is the only mound that is not contoured to the slope. It is a rectangular mound measuring 2.5m (N/S) by 1.5m (E/W). The height is 1.1m and the structure consists of small to medium sub-angular boulders stacked four courses high. The mound is cobble filled.

**Feature P** (see Figure A5) –This feature, beginning 2.6m south of Feature O, first appeared to be a terrace or stone-retained slope because it was contoured to the slope, however, on closer examination, it seemed to be a typical core-filled wall of which the back side had been filled in with soil deposits. The structure incorporates some natural outcrop. It measures 5.8m long and runs N/S, parallel to the wall that lines the streambed. It consists of large cobble fill on top and small-large boulders stacked 5-6 courses high, forming the wall. The exterior height measures 1.2m. The back side of the wall rises a little above the slope or fill, giving the structure an interior (upslope) height of .36m. The width of the wall is 1.2m.

#### *Site 5*

This site consists of features in the gulch and intermittent streambed that branches east off of the lower (northern) portion of the streambed containing Site 4. The main feature is the well-constructed stream bank retaining wall. Other associated features in the gulch area include a small terrace/stone alignment, a stone platform or possible habitation site, a stream bank retaining wall in a small branch off the main stream, and a small rock dam in the middle of the stream.

**Feature A** (see Figure A6) –This feature consists of stream bank retaining walls found throughout the gulch. Immediately after the stream branches east from Site 4, the streambed is intermittently faced with stones. Many large boulders fill the ditch. The lining occurs on the south side most frequently up to a large banyan growing in the stream. Further east of the banyan, the north side is well-lined reaching 6 courses high. The streambed widens at this point. 10m east of the banyan, the stream narrows again about 1-1.2m in width and both sides become well-lined. This narrow portion stretches for about 12m east until it reaches a second large banyan tree. For the length of the narrow portion of the streambed, the retaining walls are 5-8 courses high and measure 1.6-1.8m above the base of the streambed. The walls consist of small and large boulders. The bottom of the streambed is not lined, although it is filled with tumbled boulders. After the second banyan tree, the streambed splits and the deep, well-preserved retaining walls stop.

**Feature B** –This feature is a small terrace or stone alignment that lies to the north of the streambed containing Feature A. It begins just after the stream branches to the east. It is 3.4m in length running N/S and its width (E/W) is 0.5m. The feature is contoured to the

slope and has an exterior height of 0.4m. It is single stacked and consists of a few large boulders and cobbles.

**Feature C** –Feature C, a rectangular rock platform, lies 8m to the north of the streambed just east of Feature B. The southwest side of the feature is a terrace wall with corners on either side. The platform surface area formed by the terrace is rock-filled in some areas. This appears to be a possible habitation site. The main terrace wall is 25m long. On the SE side, a stone alignment extends to the northeast forming a corner. The corner has an exterior height of 1.1m. The alignment extending from the corner measures about 6m. A similar wall measuring 8m extends northeast from the northwest corner. The northwest corner has an exterior height of 0.8m. In the northeast, corner on the northern end of the structure, a small portion of the back corner is intact as a small wall. Its height is 0.8-0.9m and it stretches 2m SE/NW and 1.4m SW/NE.

**Feature D** –This feature consists of tumbled stream bank retaining walls along the north branch of the intermittent stream. The stream branches east of the second large banyan tree and the deep, lined ditch (Feature A). On this branch, the streambed is shallow. The purpose of its lined walls may have been to direct the water in this branch into the deep, well lined portion of the stream that begins at the banyan tree. The most well-stacked portion of the wall stretches 3.5m and has a height of 0.7m. Further east, the stream becomes lined on both sides, but it is tumbled. One area of the wall is mounded, measuring 0.8-1m wide and filled with cobble and small boulders. This portion of the wall appears to be at the beginning of the stream branch where the water begins to be channeled downward. Further east of this point the stream channel ends and only a level gulch area remains.

**Feature E** –This feature occurs on the south branch of the stream. This streambed/ditch extends southeast from the second banyan tree. It is not stone lined, but its soil walls are deeply cut. About 30m up the stream branch, a rock pile across the stream forms a small dam. The rock pile is tumbled with no specific construction. It is 2m long and 1.2m wide. Modern debris (plastic toys, metal etc.) is caught in the stones of the dam. Many large palm trees are located in this level area around the streambed.

#### **Site 6** (see Figure A7)

Site 7 is the main historic house built in the 1930's on the lower central portion of the property, just off Kalihi Street. Building plans are available from the descendants of the original owners (contact Toni Alatan). The house faces Kalihi Street, and the backyard is a cement paved patio area. The back portion of the house on the western end appears to be a newer addition. This portion has a corrugated metal roof, while the rest of the house has tar paper and shingles on a gabled roof. The house is constructed with cinder blocks. Inside the main part of the house, the walls are plaster/sheetrock, the ceiling is an open beam style, and the floor is covered with worn linoleum. A small covered patio outside has a tile floor and a large outdoor oven/fireplace is built into the wall using the same chimney as the indoor fireplace. The back yard is paved with cement

blocks and a moss rock wall that stands nearly 10 feet in height surrounds the backyard. A small rock wall, 1.5 feet in height, runs along the taller wall creating a small koi pond with flower beds on either side. A small drainage channel was built into the cement patio that drained out to the side of the house. A storage shed was built on the western side and on the southwest, a detached studio building was added in the late 1950's. The studio was built with cement tile and has many windows facing east. One wall was built with tongue and groove wood paneling and inside is a small loft. It has open beam construction and the beams are 4x6in. The roof is layered with corrugated metal on top of plywood. The house is now in various stages of deteriorating condition.

#### Site 7

This site runs along the large gulch that cuts through the middle of the property up to the nursery and nursery house. Extensive stream bank retaining walls and freestanding walls line the intermittent streambed or divert water like an *auwai* within this gulch.

**Feature A (see Figure A8)** –Feature A consists of the stream bank retaining walls and freestanding wall systems that line the streambed in this gulch. The first remnants of stone lining appear about 50m south from the beginning of the streambed. Here, the ditch is 5-6m wide and small remnants of retaining walls can be seen off and on along both sides. They are constructed with small and medium boulders and some cobbles. The first of these sections occurs on the eastern bank and stretches for 2.8m. It stands six courses high, amounting to 1.1m in height. On the western bank, another retaining wall segment extends for about 4-5m, then a wall on the eastern bank resumes for about 9m. Across from this portion is what appears to be a freestanding wall, crudely bi-faced, core-filled, diverting the water between it and the eastern lined-portion. The backside of this wall appears to have been built into the earth or against the wall of the stream at one time, but the water has since changed directions and washed away all the earth on the backside exposing the wall's construction. Above this portion, the stream bank retaining wall (single stacked lining) continues intermittently on either side, and in portions the wall is thicker, again appearing to have been a regularly constructed bi-faced wall at one time. The lining reaches a large banyan tree growing in the middle of the stream. Here the lining is 8-9 courses high along the deep bank of the stream. Above this is a tumbled, bi-faced, core-filled wall extending further up along the stream. The nursery house is directly west above the hillside from this area. Extending further up the streambed, the lining continues and a wide, solid, core-filled wall about 1m wide with small and medium boulder construction follows the stream, appearing to have served as an *auwai*, directing water downward. In some portions, it appears that soil has filled in on the outside of the wall making it appear to be lining a ditch rather than a free-standing wall. About 100m up from the nursery house, the stream splits, and the wide wall continues on the northeast branch. In certain portions it is nearly 2m wide. This wall continues 200m up the streambed from the nursery house. Archaeological inspection stopped here at the end of the Phase I project area (700 ft. contour line). The wall diverting the water continues further upward.

**Site 9** (see Figure A11)

This small marker or *ahu* is located halfway up the western hillside near the end of the gulch containing Site 8. The site consists of a large boulder with smaller stones piled on top. The natural outcrop/ boulder measures 2.5m by 3m, with a height of 1.5m on the down slope portion (north side). The south side is contoured to the slope. The rocks piled on top of the boulder reach a height of 0.65m, stacked three high in one portion. The rocks include medium size boulders, small boulders and some cobbles. In all, about 12 rocks had been placed on top of the boulder.

**Site 10** (see Figures A12, A13)

This site consists of stream bank retaining walls in the eastern-most gulch that runs along the far eastern boundary of the property. The upper portion of this gulch (the southern end) consists of tumbled portions of retaining walls, and small mounds or dams associated with water diversion in the intermittent streambed. About 40m downstream from the beginning of these small features, the stream becomes well-lined. The stream is faced intermittently on either side as it curves around this area. The average height of the walls from the base of the streambed is 0.7m. First, the retaining wall runs for 12m on the southwest side, then the ditch becomes faced on both sides. The walls extend off and on for another 30-40m before the stream runs off the property boundary.

**Site 11**

This site consists of two historic refuse areas and one small stone alignment associated with a small camp or living site. Informant testimony explained that a small shack had been located in the area. A man had lived there for a time in the '20's or '30's making bootleg liquor.

**Feature A** (see Figure A14) –This refuse site was located to the west of the streambed, probably most of which is off the subject property. A rusted door knob, 2 square-cut stones, metal pans, unused cement bags, condiment jars, Pepsi and Budweiser bottles and cans, many beer (Nippon brewery and others), soda, and wine bottles, milk bottles, sake bottles, rice bowl fragments, possible ink bottles, and a gold-gilded mug (painted with "...Miles" and inscribed with "Made in Germany") were found in the 30m by 30m area that contained the most refuse. Across the stream from the site (off the subject property) were a number of exotic plants indicating that a living site had probably been in the area.

**Feature B** –This small stone alignment was located halfway up the slope of the hill to the west of Feature A. The stone alignment outlines a small level area. It consists of three large boulders lining an area that measures 2m.

**Feature C** –On top of the hill above Feature B was a flat area lined with large trees containing more refuse. It appears that a driveway had once followed the tree line, but no

evidence of a house or shack could be found in the area. A large pit had been dug between two of the trees, presumably by pot hunters, and a number of glass bottles and rice bowl fragments surrounded the hole. Around the area, broken window pane glass, milk, medicine, and beer bottles, pieces of croc pots, the bottom of a vase (inscribed with "R. Samish, 211 Post St. San Francisco"), a metal pitcher (inscribed with "Viko-the popular aluminum"), the inside of a clock, and other debris were encountered.



**APPENDIX B – Site Photos from 1980 Archaeological  
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Figure 7. Agricultural terrace in the west valley, facing south (upslope).



Figure 8. Agricultural terrace in the west valley, facing south (upslope).



Figure 9. Portion of an agricultural terrace, showing detail of construction. Photo taken facing south (upslope).



Figure 10. Stone planting or clearing mounds in west valley. Photo taken facing south (upslope).

**Revised Addendum to the 2005  
Archaeological Assessment (Kouneski et  
al.) Kalihi Ahupua‘a, Kona Moku, O‘ahu  
Mokupuni, TMK 1-4-14:001, 1-4-14:026,  
and 1-4-16:003**



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**Revised and Updated Addendum to the  
Kouneski et al. 2005 Archaeological Assessment for  
Ho‘oulu ‘Āina and Kōkua Kalihi Valley Comprehensive  
Family Services 2022 Master Plan  
Kalihi Ahupua‘a, Kona Moku, O‘ahu Mokupuni,  
TMK: 1-4-14:001, 1-4-14:026, and 1-4-16:003**

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*Ka ua ko ‘i-lipilipi o Kalihi, The adze rain of Kalihi (Pukui 1983:169)*

*Prepared for:*

Ho‘oulu ‘Āina  
Kōkua Kalihi Valley Comprehensive Family Services

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## INTRODUCTION

At the request of the Kōkua Kalihi Valley Comprehensive Family Services (KKV), a land-based community health care center and its sister organization Ho‘oulu ‘Āina (HĀ), Nohopapa Hawai‘i, LLC, has prepared this revised and updated addendum to Kouneski et al.’s 2005 Archaeological Assessment in the ahupua‘a of Kalihi, Kona Moku, O‘ahu Moku, TMKs: 1-4-14:001, 026 and 1-4-16:003. KKV and HĀ steward the Kalihi Valley Nature Preserve, a 99.65-acre land parcel on two ‘ili ‘āina of Maluwai and ‘Ouaua in the north central ahupua‘a of Kalihi, more specifically, Kalihi Valley also known as Kalihi Uka or by its older name, Kalihilihiolaumiha (Figures 1 and 2). The fee owner of the land is the State of Hawai‘i, Department of Land and Natural Resources (DLNR), State Parks Division (DSP). Operating since 2005, HĀ is both a program and a non-profit organization of KKV, while KKV serves as HĀ’s land manager.

The primary objective of this revised and updated addendum is to integrate all available previous cultural, historical and archaeological data about this wahi pana, Kalihi Uka. In addition to including ethnohistorical research, this document is also based on Native Hawaiian oral history and knowledge. This revised and updated addendum to Kouneski et al.’s 2005 Archaeological Assessment will also inform an Hawai‘i Revised Statutes (HRS) Chapter (§) 343-compliant environmental assessment (EA) performed in support of a 2022 Master Plan (Figure 4) for KKV and HĀ, required by their DPS land lease agreement due to expire in 2024. KKV is updating their master plan to support a programmatic plan and future growth. KKV’s objectives include providing the communities they serve with increased access to an environment and place conducive to indigenous lifestyles, and opportunities to engage in ‘āina-based cultivation and restoration, in furtherance of their overarching goal to restore the health of the land and the health of the people. There is no undertaking with the potential to impact historic properties, and as such, no historic preservation compliance review trigger for this study.

## Background

HĀ has “worked to restore a healthier balance between the native and invasive plants of both upland and lowland forest, removed tons of metal and abandoned junk and equipment, started restoration work on the agricultural terraces in Maluwai, and restored the residential structures to allow for community access and educational programming so that youth and other volunteers can engage in multi-day programs that support community-based forestry” (Forest Stewardship Plan 2012:6). The property stretches from the center of Kalihi Stream (500 feet above mean sea level [AMSL]) to the top of Kamaiki Ridge (1,320 – 1,460 feet AMSL). Access to the HĀ site begins just past the wooden bridge at the mauka end of Kalihi Street. A 2006 Environmental Assessment (KKV 2006:3-5) breaks down the designated zoning of the KKV-HĀ site:

The fee owner is the State of Hawai‘i, Department of Land and Natural Resources (DLNR), State Parks Division. The portion of the site nearest to Kalihi Stream (about 42 acres) is designated as Urban by the State of Hawai‘i (TMK 1-4-14:026, 1-4-16:003). Approximately 57 acres of up-slope land nearest the crest of Kamaiki Ridge are designated as Conservation (TMK: 1-4-14:001) by the State of Hawai‘i and therefore more tightly regulated. The City of Honolulu zoning of the site is General Preservation (P-2) for the two parcels nearest the stream (TMK 1-4-14:026, 1-4-16:003) and Restricted Preservation (P-1) for the upslope parcel (TMK: 1-4-14:001). A Conservation District Use Permit allows for limited activities in the conservation areas.

In response to community demand for ‘āina-based education and access to resources, HĀ recognized the importance of becoming more financially self-sufficient and the need to develop appropriate facilities and programs: “At the core of HĀ work is the organizational mission to serve as a welcoming

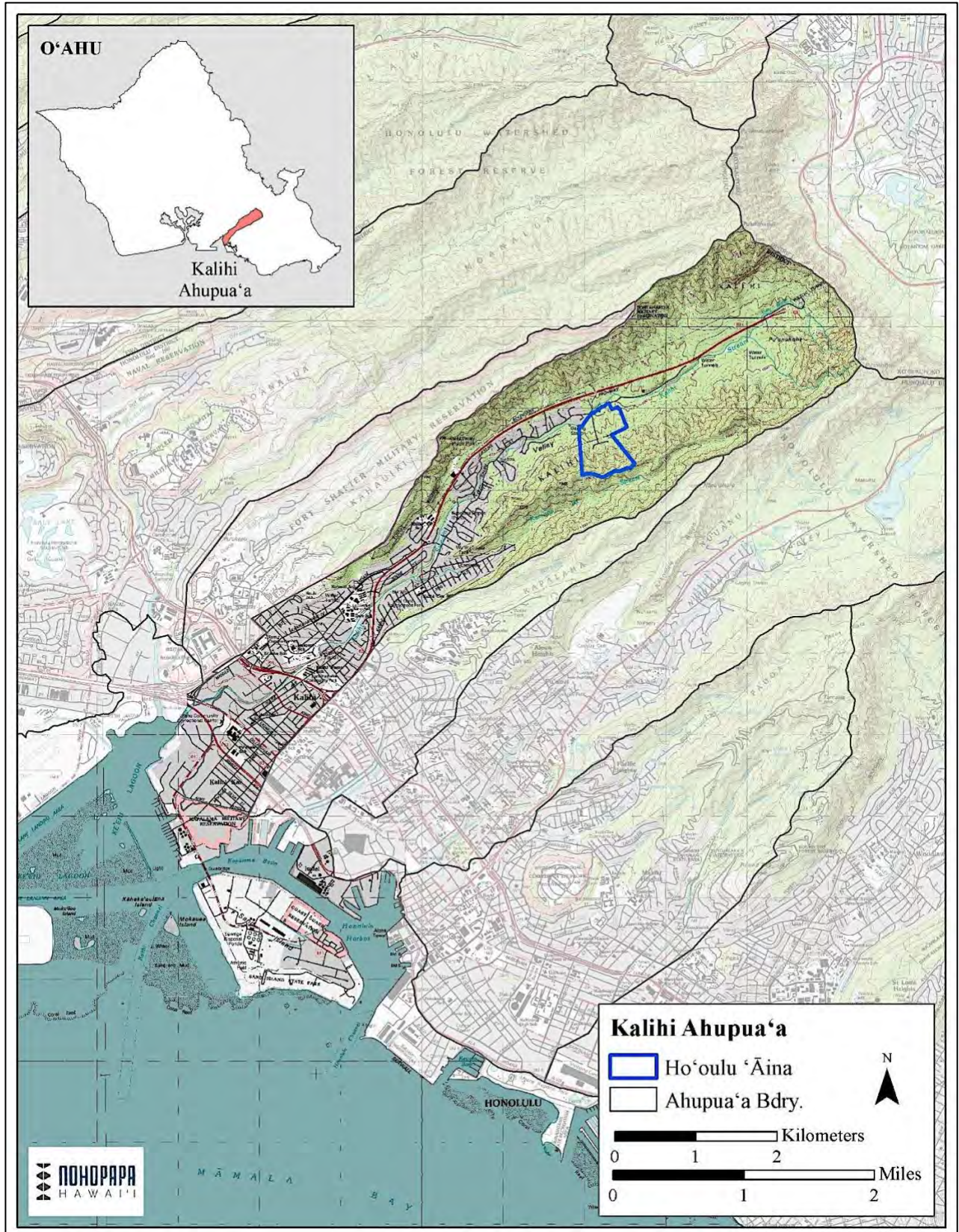


Figure 1. USGS topographic map showing showing the KKV-HĀ study area within Kalihi Ahupua'a

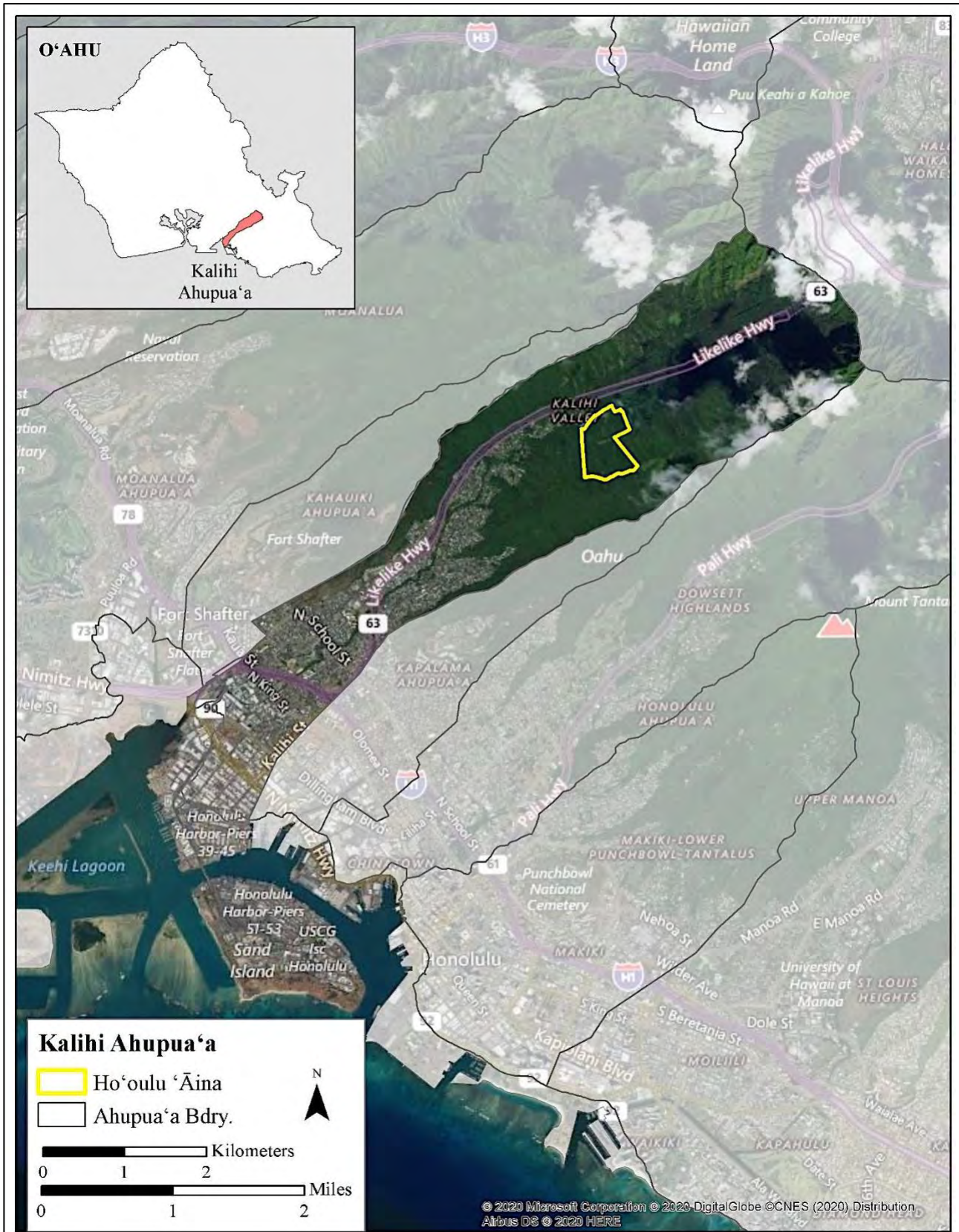


Figure 2. Aerial imagery showing the KKV-HĀ study area within Kalihi Ahupua'a

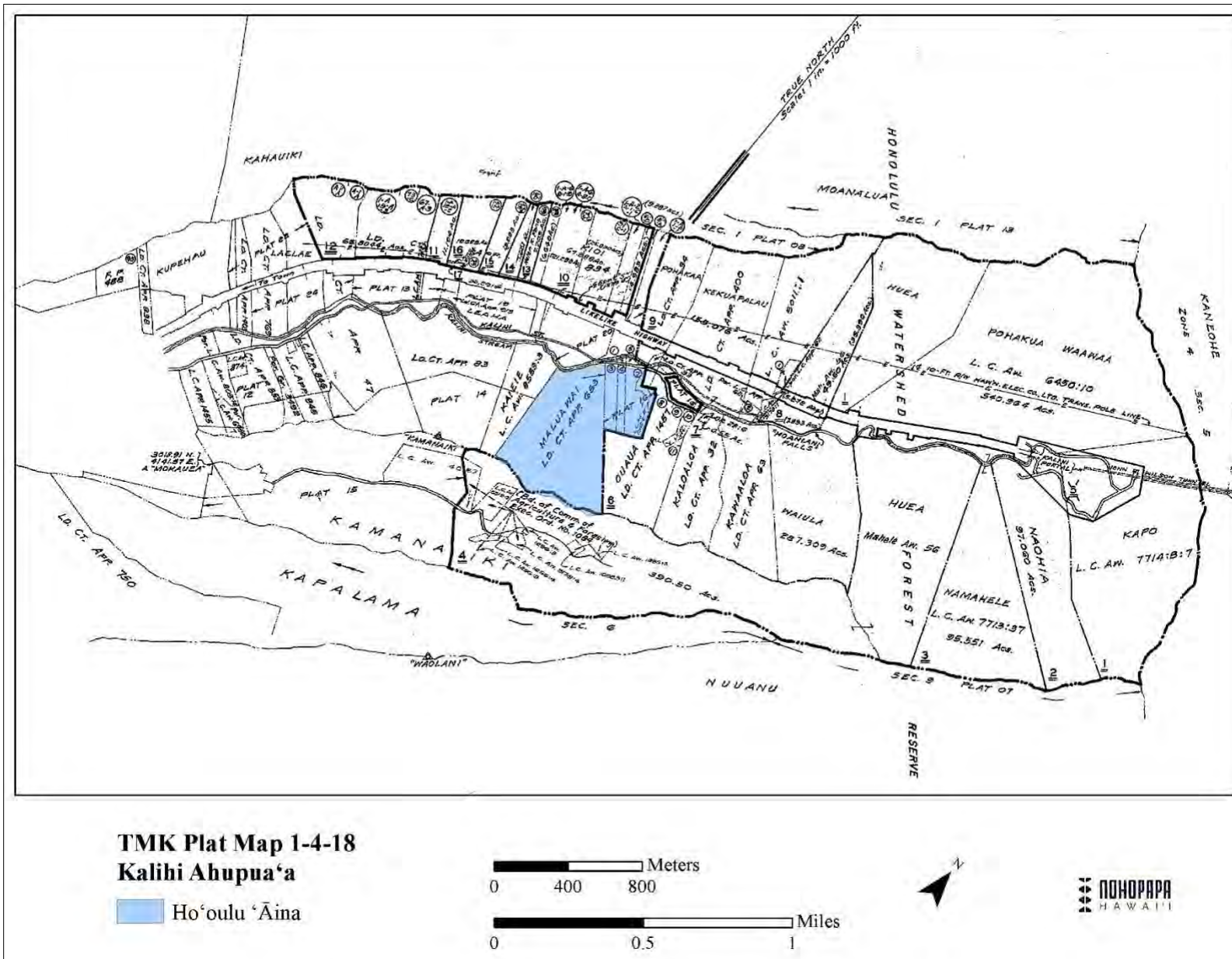


Figure 3. TMK Map showing KKV-HĀ study area

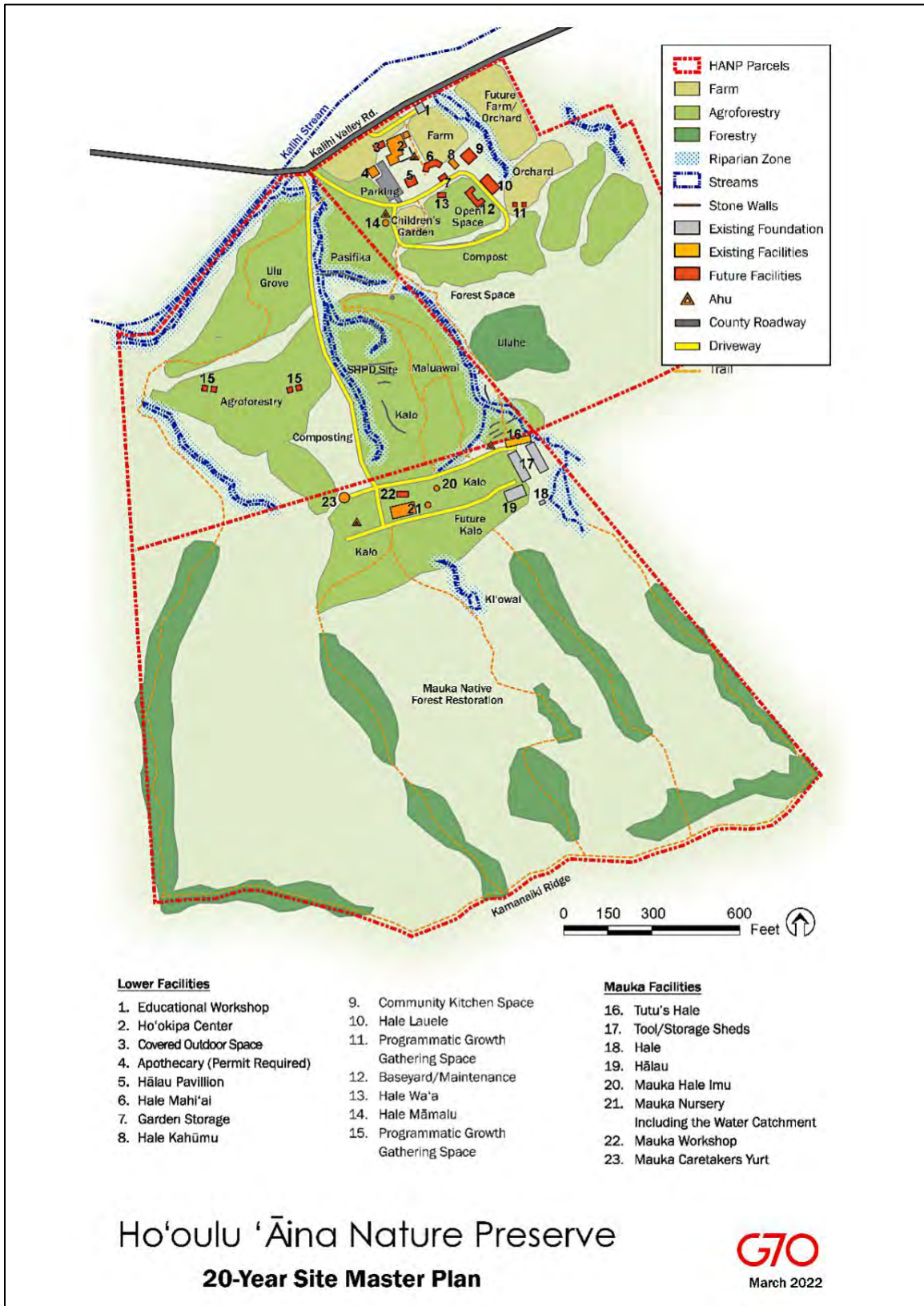


Figure 4. An illustration of KKV and HĀ's 20-year Site Master Plan (courtesy of G70)

place of refuge where people of all cultures sustain and propagate the connections between the health of the land and the health of the people. As the community works together to restore the ‘āina, they too are healed.” The KKV-HĀ 2013 Master Plan (KKV-HĀ Master Plan 2013:5) was a comprehensive planning process created from previous reports such as the 2005 Cultural Impact Assessment, the 2006 Environmental Assessment, the 2010 Sustainable Development and Work Plan, and the 2012 Forest Stewardship Plan: “The purpose is to guide program development, build a common understanding amongst staff, board members, and stakeholders to identify facilities/infrastructure priorities and financing strategies over the next 20 years,” (KKV-HĀ Master Plan 2013:6).



## Environmental Setting

The environmental setting provides a brief overview of the natural and man-made environment of the current project area and examines its location, geography, topography, climate (rain and wind), and native and non-native vegetation.

The Koa ‘Āina, Forest Stewardship Plan (2013:5-9, 12) describes HĀ’s environmental setting in more detail:

This location has cultural, social, and historical significance for the community of Kalihi, and of all Hawai‘i, as Hawaiian tradition places the home of Papahānaumoku (Earth Mother) and Wākea (Sky Father) at Kilohana Peak in the back of Kalihi Valley. Travelers in ancient times would have passed through the property on pilgrimages to Kilohana to honor these cosmological ancestors.

Today, the site is very near urban Honolulu, which makes it ideal for people from all walks to access to learn about and participate in native forestry and watershed protection. Directly makai of the site lie private residences on either side of Kalihi Street up unto the property itself, but mauka of the site remains undeveloped watershed and forestland.

At the inception of the project, the 100-acre (99.65-acres) site included two residential structures, the remains of facilities from a defunct nursery operation, and many ancient agricultural terraces. The lower elevation of the site was covered by introduced species (i.e. *albizia Falcataria moluccana*) while some native plants (i.e. ‘ōhi‘a *Metrosideros polymorpha*, koa *Acacia koa*, ‘ie‘ie *Freycinetia arborea*) remain nearer the Kamañaki Ridge summit. Reflecting the long history of degradation, parts of the property remained littered with old, rusting abandoned vehicles, car parts, trash, and nursery equipment.

Since 2006, Ho‘oulu ‘Āina, Kōkua Kalihi Valley Comprehensive Family Services (HĀ/KKV) has worked to restore a healthier balance between the native and invasive plants of both upland and lowland forest, removed tons of metal and abandoned junk and equipment, started restoration work on the agricultural terraces in Maluwai, and restored the residential structures to allow for community access and education programming so that youth and other volunteers can engage in multi-day programs that support community-based forestry.

The rain of the valley is called Ko‘ilipilipi, named ‘sharp adze’ for its cold and constant presence. Managing the hydrology of the site requires much attention, as the rain over years can tend to carve away at the soil and erode the hillsides. Portions of ancient, stone-line irrigation systems remain intact, the most significant of which leads away from stone agricultural terraces, indicating the eroding or flooding potential of this rain. Kalihi Stream itself runs through a steep sided channel in places nearly 40-feet deep.

Immediately above the stream channel much of the project site is relatively level, gently sloping land. Some of the land on the streamside of the property has been graded into wide terraces or excavated during the time of commercial nursery operations. A series of shallow gullies run generally perpendicular to the stream up to the valley ridge to the south. Slopes along the lower portion of these gullies are generally moderate and easily traversed. A wide plateau lies about halfway up the slope to the ridgeline. This is the site of the former nursery operation. Evidence of significant earth movement and grading are clearly visible at this location. Above this plateau, the valley walls become steeper. The gullies climb to become narrow

gulches stepping up with sheer rock cliffs and dry/ephemeral waterfalls. Steep side ridges reach up from the lower valley and intersect the top of Kamaikai Ridge.

The project site ranges in altitude from a low point of nearly 500 feet above sea level at the Kalihi Stream channel to a height of approximately 1,400 feet along the top of Kamaikai Ridge.

The overall climate of Kalihi Valley is typical of lands near the Ko‘olau Mountains. Rainfall is moderately heavy in the area, averaging well over 100 inches annually at the Board of Water Supply [BWS] Kalihi Reservoir and the upper portions of the valley. The majority of precipitation occurs between November and April when winter storms add to trade wind rainfall. The traditional name of the wind is Haupe‘epe‘e or ‘hide-and-seeK,’ known to swirl in and around the steep valley walls, appearing and disappearing playfully. However, predominant trade winds from the Northeast blow through the windward pass of the Ko‘olau summit and down the valley toward Honolulu.

Temperatures in the uplands are consistently cooler than the nearest official recording site at Honolulu International Airport, which range between 70° and 84° Fahrenheit. While nights on site have been recorded as low as 53° Fahrenheit and days have reached into the low 90s, most experience the weather as cool and pleasant.

Geologically, the Kalihi Valley Nature Preserve site is situated in a very old valley eroded into the Ko‘olau volcanic shield. Older alluvium underlies the floor and slopes of the valley. Younger Kalihi lava of the Honolulu Volcanic Series was deposited 450,000 years ago from vents in Kalihi and Kamaikai Valleys. Kalihi Stream cut a channel and deposited stream terraces of younger alluvium. The slope of Kamaikai Ridge on the southern half of the site is classified as rock land. Soil underlying the more gently sloping valley floor is classified as lokeka‘a silty clay.

Environment is important for understanding traditional land use and eventually for determining historic property significance and integrity per Hawai‘i Revised Statutes 6E (HRS 6E) §275/284-6(e) and federal National Register Criteria for Evaluation (NPS 1997). Hydrology in Hawai‘i, especially in wetland areas, is important because of the prevalence of kalo (taro) cultivation which requires a consistent and cool water source. Because of the general unpredictable and erratic nature of water flow during stormy seasons, traditional Hawaiian pā hale (homes, houses) and places of worship were often placed near water sources but also safely removed from normal flood areas. The 2013 HĀ Master Plan (p. 14) summarizes the hydrology of Kalihi (illustrated in Figure 5):

Immediately above the [Kalihi] stream channel much of the project site is relatively level, gently sloping land. Some of the land on the stream side of the property was graded into wide terraces or excavated during the time of the commercial nursery operations.

A series of shallow gullies run generally perpendicular to the stream up to the valley ridge to the south. Slopes along the lower portion of these gullies are generally moderate and easily traversed. A wide plateau lies about halfway up the slope to the ridgeline. This is the site of the former nursery operation. Evidence of significant earth movement and grading are clearly visible at this location. Above this plateau, the valley walls become steeper. The gullies climb to become narrow gulches stepping up with sheer rock cliffs and dry/ephemeral waterfalls. Steep side ridges reach up from the lower valley and intersect the top of Kamaikai ridge.



Figure 5. Hydrology map of central and northern portion of KKV and HĀ (Ibid)

## MO‘OLELO

He wahi leo mahalo – Kalihi Uka is legendary, a significant place (Figure 6, Figure 7, Figure 8, and Table 1). Those who visit the valley often feel the strong and pervasive mana of this ‘āina. It is beautiful. It is elemental. It is commanding. These feelings are intimated in the mo‘olelo of Kalihi from ka wā kahiko. The mo‘olelo often describe the strong wind that buffets us today; they describe the cold rain that still cuts through the valley; our mo‘olelo talk of cloud formations we can still see, and pōhaku we still touch. We are blessed to continue to live our mo‘olelo. We are eternally grateful for the kupa ‘āina of Kalihi, especially those who came before us, who remember and perpetuate the mo‘olelo of Kalihi.

To the Harvey/Miles ‘ohana, we are very grateful for their sharing of mo‘olelo and their intimate connection with Kalihi Uka. We understand that their ‘ohana, and potentially others, were the unnamed “informants” that provided Clarice Taylor with legends of Kalihi Uka for her articles that were published in the Star-Bulletin newspaper in 1955. Mahalo for keeping the mo‘olelo alive!

Many of the written legends of Kalihi come from the work of scholar Joseph Moku‘ōhai Poepoe. His 1906 mo‘olelo of Haumea and Wākea and their triumphs and tribulations in Kalihi Uka and around O‘ahu are invaluable for our understanding of this very special place. English-version legends about Kalihi, such as those found in Beckwith’s *Hawaiian Mythology* and Summer and Sterling’s *Sites of O‘ahu*, often use Poepoe’s stories and collections at Bishop Museum as source material. Poepoe’s father, G.W. Poepoe, wrote *He Mo‘olelo no Kamapua‘a* under the penname G.W. Kahiolo. In that mo‘olelo, Kahiolo (1998:83) self-identifies himself as Kalihi’s child, “ko Kalihi keiki.” The depth of understanding and clarity of details within J.M. Poepoe’s 1906 mo‘olelo of Kalihi prove that he too, like his father, was a kupa of Kalihi, a child of this land. We are extremely grateful for his perpetuation of mo‘olelo Kalihi.

### Home of Gods

In our mo‘olelo, Kalihi Uka is a wahi pana, a storied and sacred place. It is the ancestral home of many of our gods – our akua. The akua dwell in the rocks and the plants, in the birds and the silence, in the clouds and the mountains of the valley. Some of the most well-known akua of Hawai‘i choose to live in Kalihi Uka. It is home of Papahānaumoku. She is Haumea, and her humble hale is at the peak of Kilohana, at the far upland point of the valley. She lives there with Wākea – the father of the expansive sky. Kapō‘ulakina‘u – a goddess of hula experts – was born in Kalihi valley from the eyes of Haumea (Beckwith 1970:186). She lives in the streams, rocks, and waterfalls of Kapō. Kamohoali‘i, the great shark god and elder brother of Pele, was also born in Kalihi Uka. He often dwells in the steep cliffs of his birthplace (Taylor 1955). All of the great gods had stone residences in the upper valley (Taylor 1955).

### ***Papahānaumokuakea, Papa, Haumea***

In 1906, the Hawaiian language newspaper, “*Ka Na‘i Aupuni*,” recorded the following concerning the legendary ancestors of the Hawaiian people, Wākea and Papahānaumoku who lived at Kilohana in Kalihi:

*O Wākea, he kanaka maoli no ia; a o kana wahine o ia o Papa, i kapaia noho i Haumea, a o ko laua wahi i noho ai oia ka pali o Kilohana. Oia kela wahi kaola pali mawaena o ke awawa o Kalihi-uka ame Ko‘olau.*

Translation: Wākea is a human and his wife Papa, who is also called Haumea, they lived at the cliff of Kilohana. That cliff trail is between the valley of upland Kalihi and Ko‘olau.







Table 1. Summary of Selected Wahi Pana in Kalihi Ahupua‘a (Uyeoka et al. 2020:10-13)

Wahi Pana	Type	Location/ Place Name	Associated Mo‘olelo/ Other Oral History <sup>1</sup>	Current Disposition	Comments <sup>2</sup>
Lower Kalihi Stream Lo‘i & Settlement Area	Lo‘i kalo (irrigated taro) & House sites	“Extensive terraces covered all the flatland in lower Kalihi for approximately 1.25 miles on both sides of the stream” (Handy 1940)	--	Filled in by urban development	--
Upper Kalihi Stream Cultivation Area	Gardening Terraces	About 2.5 miles upstream/inland, “there are numerous small areas that were developed in terraces” (Handy 1940)	--	Indeterminate – many are likely intact and still up in the upper reaches of the valley	--intact within study area, water flow is currently cut off and some terraces are impacted by invasive flora.
Holoakekua (1,150 ft elevation)	Natural rock (outcrop) feature – ahupua‘a boundary marker	Ridgeline between Kalihi & Kahauiki	--	Presumably still intact, given its location	--
Kupehau	Storied place/area	~Ewa side of Kalihi Stream	Locally-famous pōhaku (stone) in stream w unique features; also place of an old house sites for chiefs of Hawai‘i; visited by Kamehameha	Indeterminate	Also known as “Ka-elemu-wai o Kalihi and Kupehau
Pu‘u Keanakamanō	Natural rock (outcrop) feature – ahupua‘a boundary marker	Ridgeline between Kalihi & Kapālama	--	Presumably intact	--



Wahi Pana	Type	Location/ Place Name	Associated Mo'olelo/ Other Oral History <sup>1</sup>	Current Disposition	Comments <sup>2</sup>
Ka'ie'ie	Place/area where old heiau once stood	Hakaio ridge	"In her human body as Papa, Haumea lives on Oahu as wife of Wakea; in her spirit body as Haumea she returns to the divine land of the gods in Nuumealani . . . Some place these transformations on Oahu at the heiau of Ka-ieie built for her worship in Kalihi Valley" (Sterling and Summers 1978)	Indeterminate	Thrum said it was more or less destroyed about a century ago, called it an agricultural ("hoouluai") heiau; this area and heiau associated with other old heiau about which information has been lost (Kaoleo and Haunapo)
Pōpō'ulu	Natural rock feature/steep cliff/storied place	Uplands of Kalihi near Ko'olau ridge	Associated with Kapo on the other side of the valley;	Presumably intact	Place known as Kamoho-ali'i, one of the earliest demi-god/people of old
Pu'unukohe	Natural rock feature near the Ko'olau ridge	Near Kapo and Pu'u Lanihuli; and Wilson Tunnel	Two famous pōhaku, Hapuu and Kalaihauola	Pu'unukohe is still there, but the two pōhaku, Hapuu and Kalaihauola, were supposedly destroyed in 1950s	Destruction of the two pōhaku related to Wilson Tunnel construction in 1954
Pu'u Lanihuli (2,200 ft. elevation)	Summit/top of ahupua'a; boundary w Kapālama	Ko'olau ridge	--	Presumably intact	--
Kapo	Natural rock feature/storied place	Uplands of Kalihi near Ko'olau ridge	Associated with Pōpō'ulu on the other side of the valley;	Presumably intact	Kapo was one of the earliest demi-god/people of old, a daughter of Haumea; Kapo has other names, including Laka, goddess of hula

Wahi Pana	Type	Location/ Place Name	Associated Mo‘olelo/ Other Oral History <sup>1</sup>	Current Disposition	Comments <sup>2</sup>
Pu‘u Kahuauli (2,200 ft. elevation)	Summit/top of ahupua‘a; boundary w Moanalua	Ko‘olau ridge	--	Presumably intact	--

Notes:

<sup>1</sup> References for more information on “Associated mo‘olelo/other oral history” are listed in this column, where applicable.

<sup>2</sup> General references used in compiling information in this table include McAllister (1933), Pukui et al. (1974), Sterling and Summers (1978).

A visitor to the uplands of Kalihi Valley on the island of Oahu, should he start just *mauka* of Kamehameha School grounds and go on to the center of the valley and look straight up toward the Koolau mountains, will see a peak on the north eastern side of the valley. That is the peak or hill of Kilohana, the home dark with mist, of Wakea and Papa, the ancestral *kupua* [a supernatural being possessing many forms] chiefs of Hawaii . . . Of Papa, it is said that she was a woman more than mortal, a *kupua*, and that she bore many names, such as Papa, Haumea, and Kamahaikana . . . Wakea was a man and human and he was the husband of Papa when she was called Haumea. They left the border of Kahiki in the days long past, and became the parents of the Hawaiian people and lived on the hill of Kilohana which stands high up in the valley of Kalihi. (Sterling and Summers 1978:325).

The myths also tell of Papa, in her *kupua*, or mortal shape shifting form, as Haumea, and center around themes concerning the food supply for the life of the ‘ohana to ensure the continuation of family bloodline or lineage. At Kalihi, Haumea mates with her children and grandchildren to give birth to the Hawaiian race.

Per Kamakau, “Haumea has six renewals or rebirths, some say in other lands; for example, as Namakaokahai, as Pele, and so forth. She is said to have changed herself into a young woman at the heiau of Hale-papa-a (House of burning land) in Nu‘umealani, a land in Pali-ku, and returned to marry her children and grandchildren. Her divine forms and her different bodies are worshiped by later generations as: Papa-hanau-moku (Papa giving birth to islands); Haumea-ka-hanau-wawa (Haumea giving birth noisily); Ka-haka-ua-koko (The place of blood); Hai-uli, because of her visits to the “blue sea” of Kahiki (on Oahu); Lau-mihi, from her gathering crabs (Ku-mihi) and seaweed (lau) there; Kamehaikana, from her entering a growing tree—the last three names referring to the time when she lived as a woman in Kalihi valley.”

The mo‘olelo of Haumea is associated with Kilohana, but her last three transformations are tied to her life as a mortal, possibly with a heiau that was built for the worship of Haumea, Ka‘ie‘ie heiau. According to Beckwith (1970):

In her human body as Papa, Haumea lives on Oahu as wife of Wakea; in her spirit body as Haumea she returns to the divine land of the gods in Nuumealani and changes her form from age to youth and returns to marry with her children and grandchildren. Some place these transformations on Oahu at the heiau of Ka-ieie (The Pandanus vine) built for her worship in Kalihi valley.

Ka‘ie‘ie heiau is most likely located in the ‘ili of the same name, immediately WSW of the HĀ park and anchors one of the earliest stories of the Hawaiian people to the area.

If we know the immediate location of the earthly home of Papa to HĀ, we can surmise that what grew in Ka‘ie‘ie also grew in Maluawai.

Ia laua e noho ana ma keia wahi, ua loa ko laua ola, ma na mea o keia nohokino ana ma o na maia palaku i ka nahele, na uhi punapuna moe lepo o ka uka, na kalo aweu manalo a lilo i poi uouo ono; na hooio [ho‘i‘o] me na kikawaio e lomi pu iho ai me na opae kala ole o ka uka waokele; na lawalu oopu momona i hele a ala i ka lauki, ame na wahi luau palupalu o ia uka iuiu. Pela nohoi me na alamihi kai aala o na kai kohola o kai ae nei o Kalihi, e laa na papai momona a pela nohoi me na wahi hua opihi mai o na Koolau, ame ko laila mau lau limu. A o keia mau mea a pau inai pu iho me ka poi aweu uouo, he ono mai hoi kau a koe. (Poepoe, 1906).

While they resided at this place (Kilohana), they obtained their life from the food needed in physical living, such as the perfectly ripe bananas in the forest, the firm and mealy yams laying in the soil of the uplands, the wild, tasty taro turned into delicious sticky poi; the hō‘i‘o and kikawaiō ferns mixed together with the mountain ‘ōpae of the upland rainforest; the sweet ‘o‘opu cooked in bundles (lāwalu) until fragrant with ti-leaf; and the soft, tender lū‘au of these majestic uplands. With that was paired the ambrosial alamihi from the reef flats of the oceans of Kalihi, also with the fatty crabs and the meaty opihi from Ko‘olau, as well as the leafy limu of that area. And all of these things were eaten together with the sticky poi made from wild taro, truly and exceedingly delicious! [Translated by Kanoa O’Connor]

The name, Ho‘oulu ‘Āina, was in fact inspired by “the ho‘oulu‘ai designation of an ancient heiau” (HĀ Master Plan, 2013:1) in Kalihi Valley. Ka‘ie‘ie heiau, as described by Thrum (1906:94) was a ho‘oulu‘ai heiau.

### ***Kapō‘ulakina‘u and Kamohoali‘i***

Kapō was the daughter born to Haumea or Papa while she was living in Kalihi Valley with Wākea, her husband. Kapō had many names, such as Kapō‘ulakina‘u and Laka:

*E kapu, he ihiiki a he pae akua no hoi*  
O very sacred tabu of the gods.

Haumea was the leader who was never absent from those skillful in the art of the Hawaiian hula. A very sacred tapu of the gods rested upon her. Some say she was born from the eyes of Papa. One source indicates that there is a stream said to be a kinolau (physical manifestation) of Kapō, patron of hula, of high rank and able to assume many shapes at will, as well as a cliff that was the kinolau of Kamohoali‘i, elder brother of Pele, and Lord of sharks:

Kapo-ula-kinau, Kamohoalii, Pele-honua-mea are the three wonderful ones who came from Wakea and Papa. A very sacred tabu of the gods rest upon her. Birds never sing about her tabu home up Kalihi Valley. There at noon when the sun is shining brightly, she may be seen on the hillside beyond the upland of Kilohana where stands her tabu stone (7 feet long and three feet high) into she entered, shaped like a house in front, like a fish’s tail behind. (Beckwith 1970:186-187)

Ms. Colleen Aiu, kumu hula who is also the daughter of the late and great kumu hula, Ma‘iki Aiu, in an interview recalls a story that was told to her by the late aunty Sarah Kailikea. While Aunty Sarah and Aunty Alice Holokai were traveling through the Wilson Tunnel, Aunty Sarah heard a drum beat. Later, both she and Aunty Alice visited Tutu Kawena and shared her story. Tutu Kawena informed them that “long ago, there was a hula mound and hula gatherings in upper Kalihi Valley. It is the hula maiden of Kalihi Valley, Kapō or Kapō-‘ula-kina‘u, Laka, and others. She is the daughter of Haumea.” (Palama 2005: 33).

Likewise, according to McAllister, David Kama, who was the caretaker of the water reserve in Kalihi Valley, tells him that he heard the drums on the Nights of Kāne (Kāne o ka Pō) above his house but has never found the heiau. However, Thrum (1906:94) mentions three heiau that McAllister had been unable to obtain additional information about:

Kaieie, Kalihi-Uka, on premises of Dr. Huddy, of hoouluai class, Haumea deity.  
Parts of foundations only remain.  
Kaoleo, Kalihi-Kai, no particulars ascertained  
Haunapo, Kalihi-Kai, no particulars ascertained. (McAllister 1915:88-90)

However, these three heiau in the valley were ideal for growing ‘uala (sweet potato), uhi (yams), wauke (paper mulberry) and mai‘a (bananas).

A map of Kalihi dated 1883 indicates the place names of Popoulu and Kapō within the wao akua region (i.e. the uninhabitable mountain region where deities dwell) of the ahupua‘a. Sterling and Summers (1978:324) write of Kapō and Kamohoali‘i:

Look now at the steep cliff to the right, to the hill equal in height with the side of Kapo. This hill is Kamohoalii. This is own [sic] brother of Kapo. He was born from the top of the head of Haumea [Papa]. He is the beloved brother of Pele, the one who saved the fire alive when she battled with Kamapuaa.

### ***Kāne and Kanaloa in Kalihi***

The gods Kāne and Kanaloa are associated with activities related to ‘awa drinking. With ‘awa as their principal food, we can assume that water must have been a critical ingredient:

Kane and Kanaloa journeyed along the coast of the island until they came to Kalihi. For a long time they had been looking up the hillsides and along the water courses for ‘awa. At Kalihi, a number of fine awa roots were growing. They pulled up the roots and prepared them for chewing. When the ‘awa was ready, Kanaloa looked for fresh water but could not find any. So, he said to Kane, our awa is good, but there is not water in this place. Where can we find water for this awa?’

Kane said, ‘There is indeed water here.’ He had a ‘large and strong staff.’ This he took in his hands and stepped out on the bed of lava which now underlies the soil of the region. He began to strike the earth. Deep went the point of his staff into the rock, smashing and splintering it and breaking open a hole out of which water leaped for them to mix with their prepared awa. This pool of fresh water has been known since the days of old as Kapukawaiokalihi (the water hole of Kalihi). (Beckwith 1970:63)

### ***Kamapua‘a from Kalihi***

In *He Mo‘olelo no Kamapua‘a* (Kahiolo 1998), Kamapua‘a identifies himself and his akua mother, Hina, as being from Kalihi. At the end of this mo‘olelo, Kamapua‘a searches for his parents. He finds Hina at the ocean of Keonealuhi (possibly near Kalalau, Kaua‘i). Here, he calls out to Hina, asking for a fish from his mother – identifying himself as a child of the goddess. She does not recognize him as her son, denying his request for fish. There is a prolonged exchange between mother and son -- Kamapua‘a insists he is her child and Hina denies his claim. Finally, Kamapua‘a performs an oli to prove his connection to his mother. The last portion of the oli states:

No Kalihi ‘oe, no Kalihi wau,  
No Kalihi ka wahine hāhā pāpa‘i,  
Moku aku ke kaula, lilo aku ka ipu.  
Hahai a ka wahine i ka ipu,  
‘O ke kai mokumoku ipukai o Kalihi,  
He pa‘a ‘o Kalihi.  
E Hina ē, na‘u kahi i‘a,  
E Hina ē, he ‘ole manawa ‘ino, aloha. (Kahiolo 1998:79)

After hearing this, Hina realizes that the stranger is indeed her son, Kamapua‘a. In the oli, “No Kalihi ‘oe, no Kalihi wau,” means “you (Hina) are from Kalihi, I (Kamapua‘a) am from Kalihi.”

The mele then references a story of Hina losing her gourd while gathering crabs in Kalihi, O‘ahu. The detail with which Kamapua‘a describes the lost gourd, with its rope breaking (ka moku ‘ana o ke kaula o ka ipu), is what causes Hina to recognize him as her son – Kamapua‘a.

## **Kupua and ‘E‘epa**

Unknown to many of us, Kalihi Uka remains the home of many akua and supernatural kupua. These spirits protect and guide all of us in times of need, and are also known to be kolohe – playful and mischievous. These akua are very much still alive in Kalihi Uka, and Kānaka still recognize and pule to them today.

## ***Hāpu‘u and Kala‘ihauola***

Hāpu‘u and Kalaihauola are stones, and the place to this day is named Hāpu‘u:

It was said that these two belong to the mysterious little people of Nuuanu Valley who wandered to that place because of the war going on in Nuuanu when some fled. These two came to the up lands of Kalihi -- where are the others. Strangers who visit the valley should pull leaves, braid them into a wreath and lay the wreath on the stones in order to meet with no such difficulty as mists and cold or the loss of their road on the way to Kilohana and back. Should the mischievous little people see that there are no wreaths on the stones when visitors are on the way to Kilohana, they will break a branch of the flowering mountain apple or the leaf of a tree fern, dip it in water and sprinkle the two stones. Soon after, the summit of Kapo will be covered with mist and a drenching rain will cause the stranger to shiver with cold. Sometimes, the little people will throw away the wreaths and do the same. (Poepoe 1906:65)

## ***Other Kupua***

In *Tales of Hawaii* by Clarice Taylor (1955), several other kupua are mentioned living in Kalihi valley. These include:

Kaupe (also known as Poki by modern Hawaiians) – a big dog that also took the form of a stone or cloud formation. When Hawaiians living in Kalihi saw Kaupe over the mountains in Kalihi Uka, they knew he was warning them not to go up to Kilohana or Kapo.

Manukao is a great rock in the form of a bird living at the ridge below Kilohana. Its name literally means “bird warning.” The spirit in this pohaku often takes the form of a great rooster. Manukao could warn Hawaiians of oncoming famine.

Ioleloa is a stone that used to lay next to the old Kalihi footpath. Ioleloa was an ancient Oahu king who made a raid upon the island of Kauai. The Kauai king followed him back to Oahu and fought a hand-to-hand battle with ‘Ioleloa on the ridge of Kamananui overlooking Kalihi Valley. Ioleloa was killed and hurled into the valley where he turned to stone. Many generations later, in the early 1900’s, the stone was dynamited to create Kalihi Street. Hawaiians refused to dynamite the rock – they stood around and watched the foreigners do the job. The foreman who insisted on dynamiting the stone died when a fragment hit him.

Laukīpala is a kupua woman who lives in Kalihi Valley in a big flat stone in a pool under Kapo. She is the deity of yellow ti leaf on land and the lauki fish in the sea. She is sometimes seen as a heavy-set woman with gray hair – she is a wanderer who never stays in one spot. Her stone was known to move up and down the valley, often resting in very surprising places!

## Visited by Ali‘i

In historical legend, Kalihi Uka was a favorite place for ali‘i from O‘ahu and from afar. Kalihi’s pools and streams were often sources of enjoyment for visiting ali‘i. The valley and her people offered refuge to Kahahana, King of O‘ahu, when he fled into hiding. After his conquest of O‘ahu, it is said that Kamehameha found respite in Kalihi Uka.

### *Ka-elemu-wai-o-Kalihi*

When one is almost out of the hill valley of Kalihi, on the *mauka* side of Joe Kalama’s residence, there is a spot called “The anus of Kalihi,” “*Ka-elemu-wai-o-Kalihi*.” The exact feature is a solidly planted rock in the middle of the stream; in the center, when the flow is low, one can see a little hole shaped like an anus from which water flows and runs down below. The rock above the hole is shaped like buttocks:

On the ‘Ewa side of Kalihi Stream, the home site is still to be seen at a place called Kupehau. Here, chiefs of Hawaii resorted because of the delicious poi and tender taro tops. Kamehameha I was one of the chiefs who visited the spot. After his battles on Oahu, he went to rest at Kupehau. One day, the chief came down to the stream to bathe when the water was low. Kamehameha stuck his finger into the hole and said, “Kahaha! The water of Kalihi comes from an anus!” (McAllister 1915:90)

## He ‘Āina Waiwai

Our mo‘olelo describe Kalihi as an abundant landscape – full of life and spirit. Water – ka wai ola – is plentiful. Water gushes forth from springs (mo‘olelo of Kāne and Kanaloa), gathers in cool pools (Kapō‘ulakina‘u; mo‘olelo of Kamehameha; pōhaku hānau), and leaps down cliffs as waterfalls (Kapō‘ulakina‘u). Our life-giving rain is referred to with affection and our beloved streams are celebrated (Ua po‘olipilipi; Kāne and Kanaloa; Kapō‘ulakina‘u) in mo‘olelo. The lushness of Kalihi uka remains a common theme. Plants grow prolifically in the upland valley. Vegetation used for lei, such as ‘ōhi‘a, palapalai, maile, and lā‘ī, are luxurious and grow abundantly here. There also exist a plentiful amount of edible plants. In his mo‘olelo of Haumea and Wākea, Poepoe (1906) describes the bountiful amount of food growing in Kalihi Uka.

Poepoe uses the word “ola” for the food that Haumea and Wākea find in and around Kalihi Uka. The abundance of food truly is ola – life and health – for Kalihi. The abundance of this ‘āina continues to this day, and continues to grow and expand through the hands of those who mālama ‘āina.

## ‘Ōlelo No‘eau

The ‘olelo no‘eau or traditional sayings represented the most dramatic qualities of the Hawaiian people. Typically, there are underlying messages that, when understood, can convey humor, wisdom, and eloquent poetry.

Ka Ua Ko‘i-lipilipi o Kalihi.  
The Adz Rain of Kalihi (Pukui 1983:169)

There is a story entitled “Ka Ua Poolipilipi-o-Kalihi” that describes the rain that sharpens the head. In the days of old, there were two lovers who hid in the forest so they could indulge in their passion without the girl’s parents knowing. There, a little patter of rain fell upon them but they did not pay any attention. After a time, they went to see if the rain had cleared, but rain was still falling and they slept again. For some days and nights, the rain fell and the two kept on sleeping. When they awoke, their heads were sharpened and flattened from sleeping so long while the rain fell day and night. Thus, the rain at Kalihi is called “the rain that sharpens the head at Kalihi,” “Ka ua Poolipilipi-o-Kalihi.” (Sterling and Summers 1978:326).

Ke kai nehe o Puuhale.  
*The murmuring sea of Puuhale.*  
The sea at Puuhale in Kalihi, Oahu, was said to murmur softly as it washed ashore.  
There were once many fishponds there. (Pukui 1983:186)

Puka kūkae wai o Kalihi.  
*Through an anus appears the water of Kalihi.*  
An expression of derision for Kalihi, Honolulu. In Kalihi Stream is a stone that resembles the human backside. When the stream is low, water pours out of the hole. First uttered by a visiting chief. (Pukui 1983:299)

In 2015, Ka‘ohua Lucas and Puni Jackson composed the following ‘ōlelo no‘eau:

Pi‘i mai lau ‘o Makali‘i.  
Moe ihola ka ‘ōlena.  
*When Makali‘i (constellation) rises in Kalihi, the ‘ōlena drops signaling it is time to harvest the tuber for lā‘au.*



## HISTORICAL ERA

### Traditional Historical Accounts

The following information is an excerpt from a 2020 summary of early traditional accounts of Kalihi Ahupua‘a (Figure 7 to Figure 10) from the Kamehameha Schools Kona Wahi Pana Survey by Uyeoka et al. 2020. The information was collected as part of the effort to help Kamehameha Schools better understand the scope of existing wahi kūpuna sites in KS’ Kona, O‘ahu Region:

According to Pukui et al. (1974), the place name Kalihi, literally “the edge, border or boundary” (Pukui and Elbert 1986),<sup>1</sup> is

. . . famous in legend as the home of Pele’s sister Kapo . . . , and of Haumea, Pele’s mother who is identified with Papa, the wife of Wakea. She had many adventures at Ka-lihi and saved her husband Wakea, who was being taken away for sacrifice, by embracing him. His bonds loosened and the two disappeared into a tree. Ka-ieie was a *heiau* here for her worship. (Pukui et al. 1974:77)

In his ground-breaking study of native planters in Hawai‘i, Handy (1940; Handy and Handy 1972) described Kalihi as follows:

Kalihi had a shallow seaside area, now the shore of Kalihi Basin, that was, like that of Moanalua, ideal for the building of fishponds, of which there were six . . . On the flatlands below the valley there were extensive terraces on both sides of the stream, while along the stream in the lower valley there were numerous areas with small terraces . . . The interior valley was rough and narrow and not suitable for *loi*, but it would have been good for sweet potatoes, yams, *wauke*, and bananas, which probably were planted there. McAllister found few dwelling sites and no *heiau* remains, although Thrum listed three. . . (Handy and Handy 1972:475)

Like other ahupua‘a in Kona Moku, the upland forest was a reliable source of various native, endemic, and Polynesian-introduced plants. These upland resources provided not only food products—especially when famine struck—but also medicinal plants, wa‘a (canoe) trees, and other needed items (e.g., for religious practices, hula, and so on). John Papa ‘Īī, for example, tells a story from his childhood in the early 1800s when a proclamation was issued for the people to gather materials for thatching “heiau houses” (‘Īī 1959:45). He described what happened next:

All the people who went on the journey arrived in the upland of Kalihi, near the diving pool of Waiakoe, for they thought that that would be the nearest place to obtain dry ti leaves, timber, thatching sticks, and *ie* fibers for tying on the thatch. . . At this place there were many expert canoe makers, whose children were among [my] playmates (ibid.)

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<sup>1</sup> Pukui et al. (1974:77) make the following interesting and surprising statement about the naming of Kalihi: that is was “. . . said to have been named by Prince Lot (afterwards Kamehameha V) in 1856,” which would suggest the name is neither very old nor indigenous to O‘ahu.

A malihini (foreign) visitor (Bennett) in the 1830s talked about natives traveling up through the entire valley to its upper reaches, to trade (or sell) goods with the windward side:

Kalihi had a pass to the vale [valley] of Kolau [Ko‘olau] similar to the pari [pali] of Anuuana [Nu‘uanu], though more precipitous, and only employed by a few of the islanders who convey fish from Kolua to Honoruru. (Sterling and Summers 1978:322)

Assumed to date from prehistoric times, three complexes of ‘auwai (stone-lined water channels) and surrounding pā pōhaku (terraces) remain in varying stages of disrepair. Mentioned previously, Thrum identifies three heiau that McAllister (1933:88) was unable to obtain any additional information:

1. Ka‘ie‘ie, Kalihi-Uka, Haumea deity
2. Kaoleo, Kalihi-Kai
3. Haunapo, Kalihi-Kai

### ***Locating Ka‘ie‘ie heiau***

As previously mentioned in the Mo‘olelo Section, the heiau of Ka‘ie‘ie was associated with the worship of Haumea in her earthly form. McAllister (1933:88), citing Thrum (1906:94), describes Ka‘ie‘ie heiau as hoouluai class and as connected to Haumea:

Thrum mentions three heiaus about which I have been unable to obtain additional information...Kaieie, Kalihi-uka, on the premises of Dr. Huddy; of hoouluai class. Haumea its deity. Parts of foundation only remain.

The ‘ili of Ka‘ie‘ie was originally awarded, during the Māhele, to C. Kanaina as LCA 8859 ‘āpana 3 (Buke Māhele vol10:633-4). It somehow passed down to Dr. George Huddy, who was a dentist. He sold his residence to the “Charles Cranes” in 1907 (*The Hawaiian Star*; Figure 9). Charles Crane was the publisher of Ka Nupepa Kuokoa and later the Mayor of Honolulu.

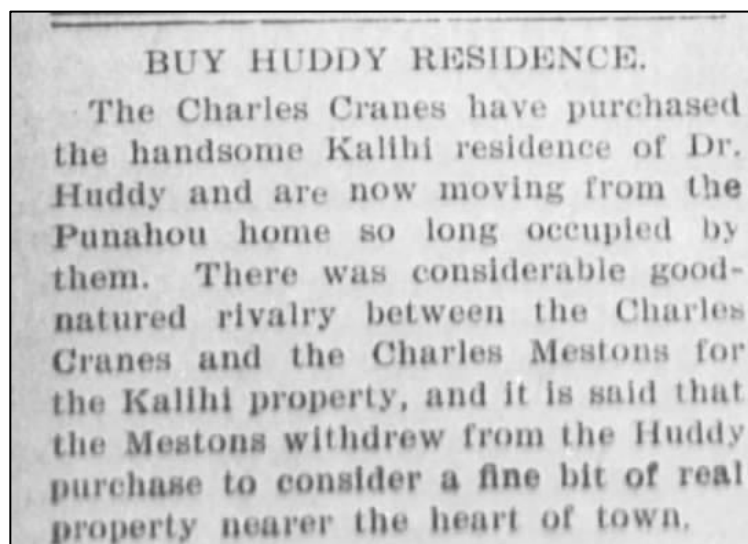


Figure 9. Newspaper clipping announcing the Crane's purchase of the Huddy residence from *The Hawaiian Star*, August 8, 1907

If you refer to Figures 14 and 15, the 'ili of Ka'ie'ie is located on Register Map 1017, circa 1883, and is directly makai and adjacent to the land of Maluawai in which most of the HĀ park site is located, linking one of the origin stories of the Hawaiian people to this area. The 'ili of Ka'ie'ie is now owned by the Sisters of the Sacred Hearts and has one small building complex with the remainder forested.

### **Early Historical Accounts**

Prior to Western contact, this Kalihi Valley region was once intensively cultivated by Hawaiians living along the valley's floodplains. Evidence of religious and political practices in Hawaiian society in association with Kalihi Valley is depicted in the tales of fishponds, heiau, and trails connecting Kalihi to other important island districts (Kouneski et al. 2005:7; Figure 10, Figure 11, Figure 12, and Figure 13).

In 1810, 'Ī'ī (1959:95) refers to the taro patches of Kalihi and notes the extensive trails utilized during this time:

When the trail reached a certain bridge, it began going along the banks of taro patches, up to the other side of Kapalama, to the plain of Kaiwiula; on to the taro patches of Kalihi; down to the stream and up to the other side; down into Kahauiki and up to the other side; turned right to the houses of the Portuguese people . . .

At the time of the Great Māhele of 1848, when land in Hawai'i was first converted to private ownership, the 'ili of Maluawai was deeded to Kamāmalu, the sister of King Kamehameha IV (Alexander 'Iolani Liholiho) and King Kamehameha V (Lot Kapuāiwa). By the mid 1800's, the land was used for grazing cattle. Few trees stood in the valley floor and most of the property was grassland.



Figure 10. Rim of the saddle in Kalihi Valley, looking northeast (Bishop Museum Archives CP121,896)



Figure 11. 1884 photo of hale in Kalihi Valley (Bishop Museum Archives CP77903)



Figure 12. Kalihi Valley (Bishop Museum Archives CA1885; photograph cropped by Nohopapa)



Figure 13. Waterfall in Kalihi Valley (Bishop Museum Archives CP121,897)

## Land Commission Awards (LCAs)

With over 100 LCAs recorded for the ahupua‘a of Kalihi, three LCA are within the HĀ study area (see Table 2, Figure 14, and Figure 15). Two LCAs are konohiki awards, those lands claimed and granted to ali‘i. One LCA is a kuleana award, those lands claimed and awarded to the maka‘āinana.

Table 2. Land Commission Awards in and around Ho‘oulu ‘Āina park (Buke Māhele, 1848). The thick box marks LCA within HĀ parcels; the others are adjoining

LCA Helu (No.)	Awardeee	‘Āpana (parcel)	‘Ili	Location	Vol.	Pg.	Type
7713	Victoria Kamamalu		Maluwai	Majority of HĀ, central and west	10	449-450	Konohiki
6450	Kaunuohua (for Moehonua)	8	Ouaua	Por. within northeast corner of HĀ	6	768-770	Konohiki
1049	Keawepoepoe (for Keaka)	2	Ouaua	Por. within northeast corner of HĀ	9	650-1	Kuleana
8559	C. Kanaina	3	Ka‘ie‘ie	Alongside and west of HĀ	10	633-4	Konohiki
7175	Kapule	1, 2	Kekuapalau & Pohakaa	Alongside and north of HĀ	7	388	kuleana
803	A. Adams	12	Kioi	Alongside and north	3	40-48	not kuleana

The only other kuleana award lies northeast of the KKV-HĀ study area, to Kapule, LCA7175, ‘āpana 1 and 2. Adjacent konohiki awards are also worth pointing out; the ‘ili of Ka‘ie‘ie to the west, awarded to Charles Kanaina and the ‘ili Kioi to the north awarded to Alexander Adams.

Relevant LCA are included in Table 1 (above) and on Figures 11 and 12. The following quote is from Kouneski et al (2005) and discusses the three LCA within the park.

Victoria Kamāmalu, a princess and sister of Kamehameha IV and V, received many properties through LCA 7713 not only on O‘ahu, but also on all five major Hawaiian Islands. The property awarded to her in Kalihi Valley was on TMK 1-2-14:1 and 26. Kaunuohua (LCA 6450) was awarded not only the ‘ili Mokauea in Kalihi Ahupua‘a but also an ‘ili of land at Waikīkī, Kona, O‘ahu, and the ahupua‘a of Kalaupapa, Ko‘olau, Moloka‘i.

A small portion of TMK 1-4-16:3 was awarded to Keawepoepoe (LCA 1049). Keawepoepoe refers to his land in Kalihi as farmland. LCA 7175, located north across Kalihi Stream from the current HĀ property and a house property located to the west of this current property were described by the claimant Kapule as follows:

The Land Commissioners: I, the one whose name is below, hereby state my claim for land at Moauea, an ‘ili in Kalihi. There are eleven lo‘i. On the east is a separate kula for me, two mala of bananas are there. On the south is a stream, on the north is a pali, on the west is a kula. I have four lo‘i together in the land of Loiloa, also a small separate kula is there. There is also a house claim. My residence is at Kalihi uka in Kaieie.

Kapule X his mark

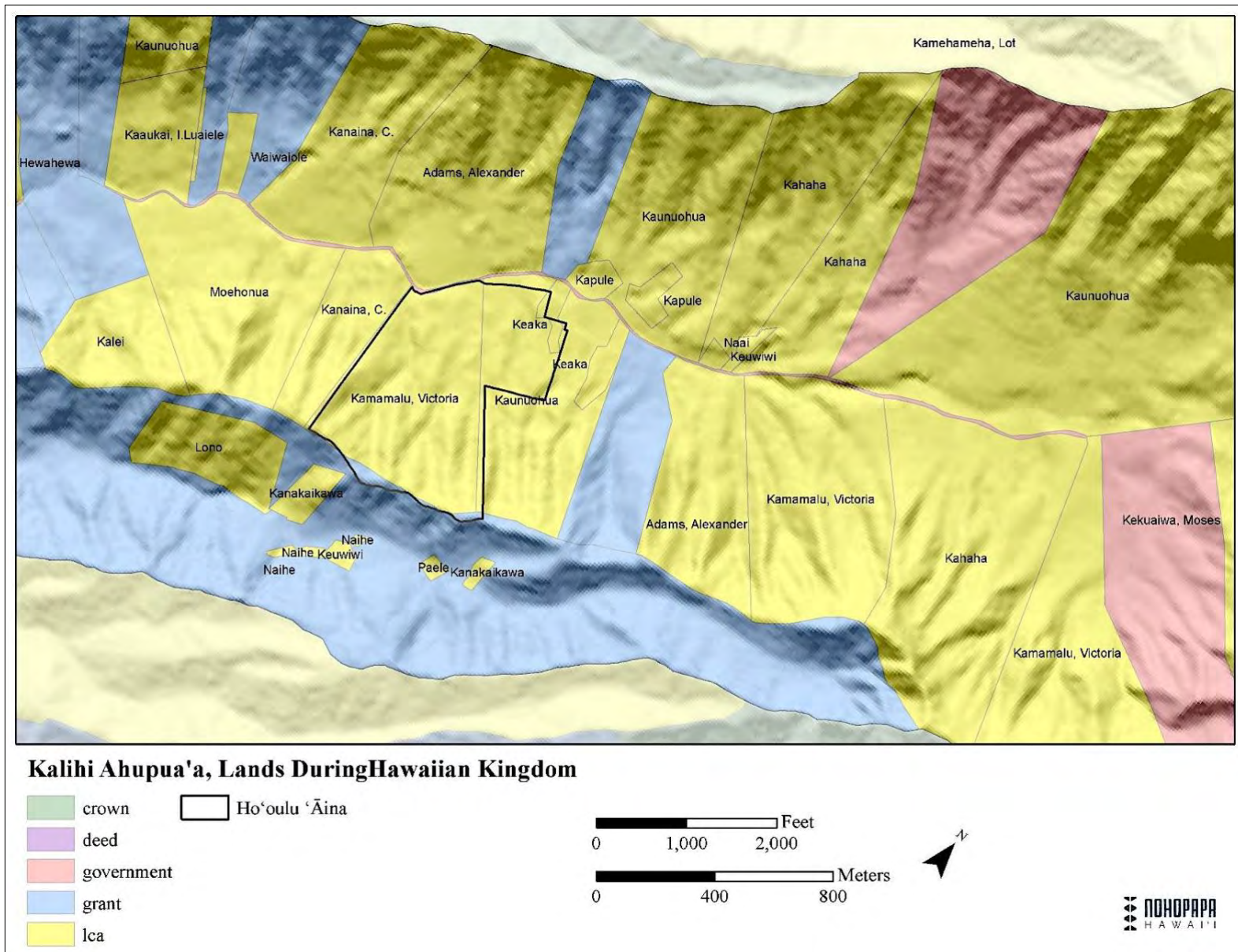


Figure 14. Map of the KKV-HA study area in Kalihi Ahupua'a, showing Hawaiian Kingdom lands, including LCAs



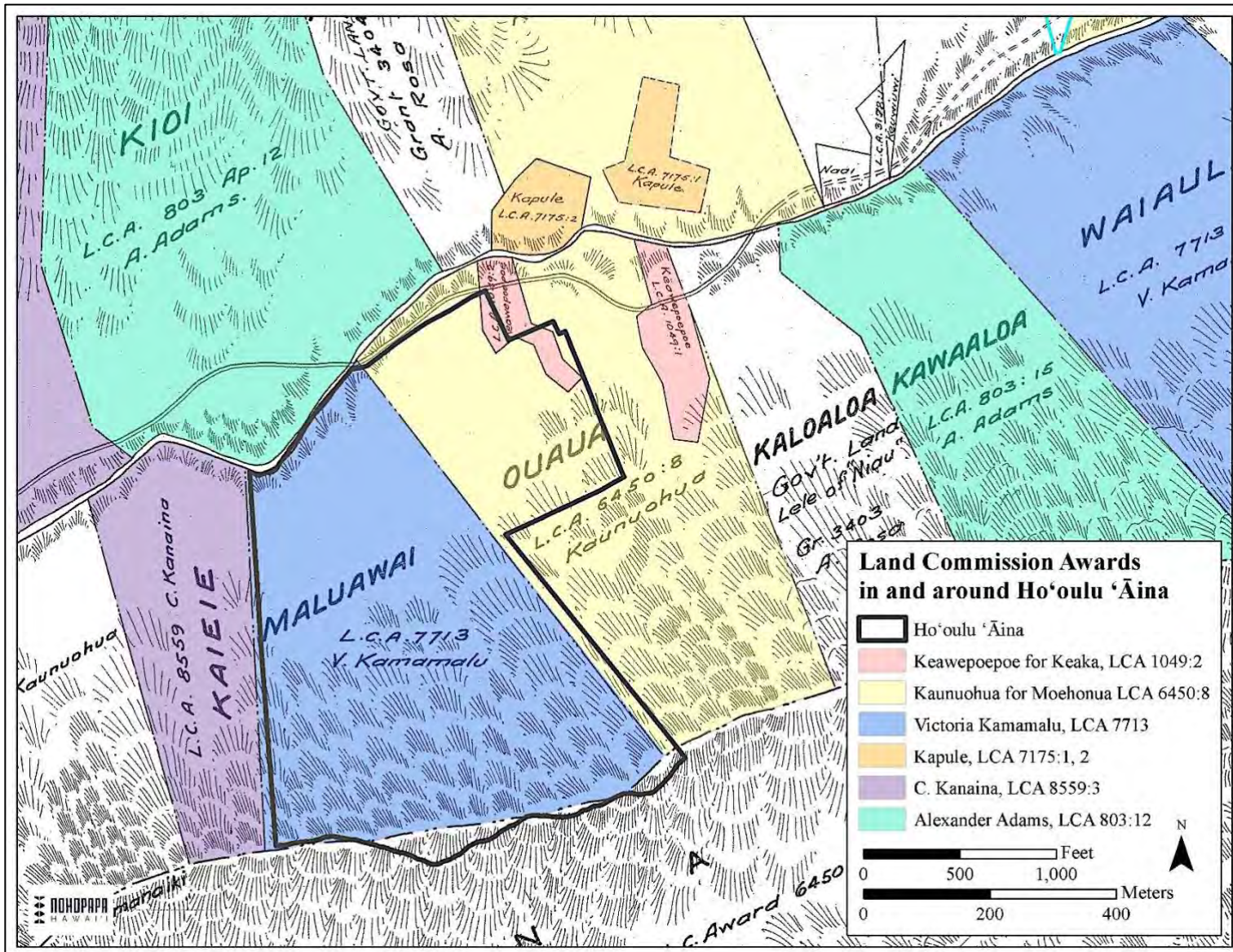


Figure 15. LCAs in and around the KKV-HĀ study area. Depiction is over a portion of Register Map 1017, by J.F. Brown, ca. 1883, as traced by James Iao in 1916

According to such testimony, farming did occur at this location in the valley and lo‘i were utilized in the area. Therefore, although such agricultural features may not have been extensive, taro cultivation, including terrace agriculture, may have occurred on the current HĀ site on a small scale.

The Hawaiian Government Survey, was founded in 1870, under the reign of Lot Kapuāiwa, Kamehameha V. Maps were created by the HGS which have preserved many place and palena names across the Pae ‘Āina. Register Map 1017, drawn and surveyed by J. F. Brown in 1883 (see Figure 16 and Figure 17) depicts the entire Ahupua‘a of Kalihi, showing ‘ili names and Land Commission Awards.

In addition, Maps made by the Land Court, as a required survey for clearing of Titles were highly accurate; these Land Court Application (LCApp) maps were prevalent during the Territory of Hawai‘i.

## **20<sup>th</sup> Century to Present**

In the later part of the 19th century and for most of the 20th century, much of the HĀ park lands were used by a commercial nursery. Exotic species such as albizia, rose apple, bamboo, royal palms cover the property. Areas were mined for top soil, which was bagged and sold by the nursery.

In the 1930s, the property was clear and unobstructed. Toni Jean Kuulei Alatan, granddaughter of Charles Marek, (Palama 2005:35) dated the construction of one of the cottages formerly on the property to the 1930s, because at that time she described the Park lands as follows: “There were no trees. All open ...” A ca. 1935 aerial photo of Kalihi Valley features Pearl Harbor in the distance (Bishop Museum Archives CP59991; Figure 18). An LCApp 1457 Map, c.1945 shows applicants are Charles and Berlinda Marek

Toni Alatan also remembers looking for a nearby heiau her grandmother remembered seeing. She recalls the walls and terraces on HĀ property (Palama 2005:35, 36):

...we were under the age of 12, my grandmother would talk about a heiau at that time. She remembered seeing it so she told us. Of course, we were kids. So we went up. There used to be 2 tanks at the top of the property just a little ways beyond those tanks, there was a property marker because originally at one time, they owned all the way to the top of the mountain [Kamanaiki Ridge].

All the way to the top and of course, the State decided they would declare eminent domain and make it a watershed. I think it was in the late ‘40’s or early ‘50’s. Well, she told me to go to this marker and my brother and I were to follow it down and keep following it and eventually run into it. Well, we ran into the terraces and that’s what we thought it was at first. So we uncovered the whole thing. It was just covered with California grass. So my brother and I, we just uncovered the whole thing and we saw all these terraces and said, “I don’t think this is it?” And I was talking to my grandmother and she said, “at one time, the Hawaiians built these terraces and I’m sure that some of them were platforms for homes. And then later, the Chinese came and they expanded on it. It has to be all man-made because there is an area where the water drains. Because it’s extremely, you know, you have to have an engineer degree to figure it out. It’s very unusual but I’m wondering if the Chinese did that?”

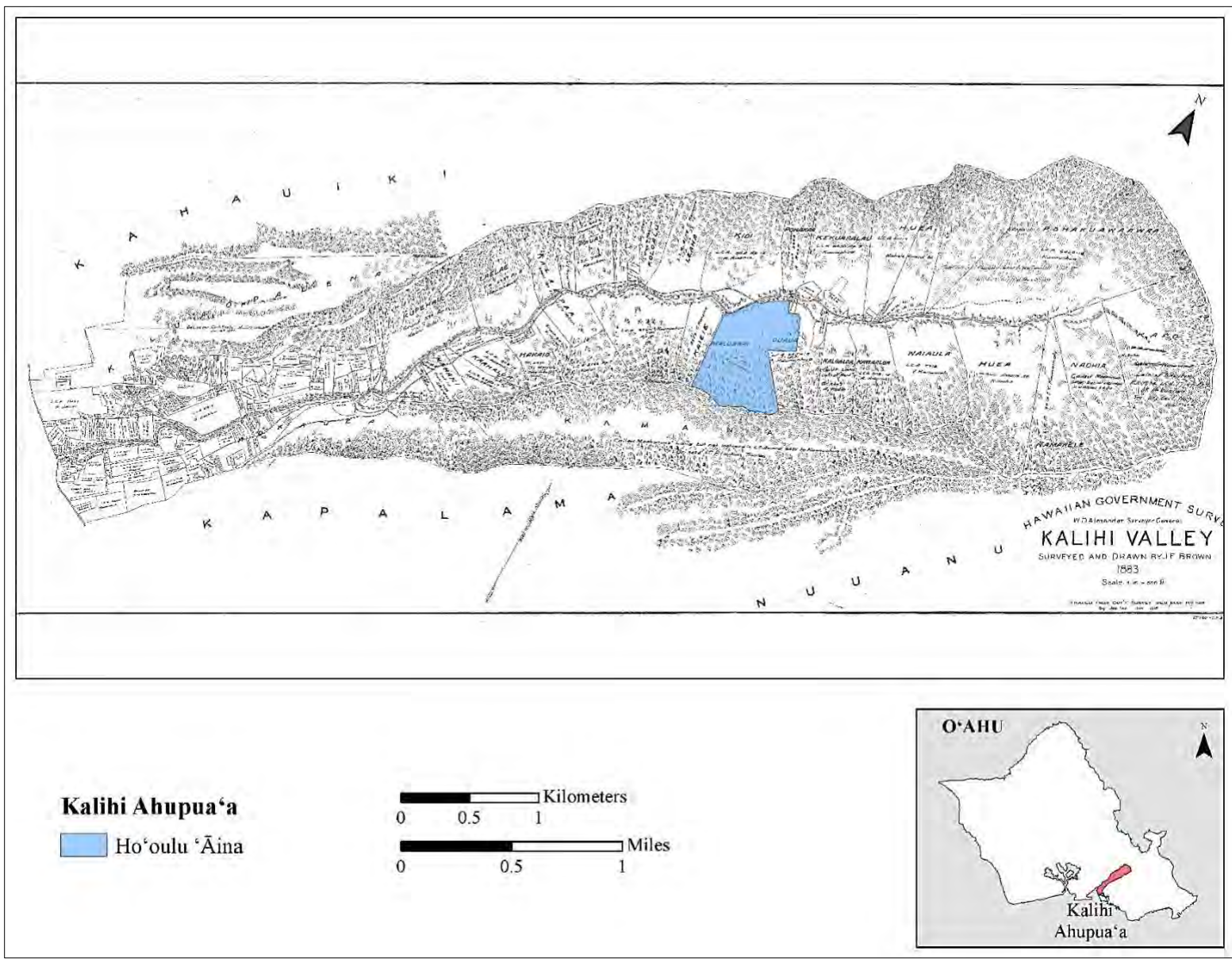


Figure 16. Register Map 1017, with study area highlighted in blue, ca. 1883

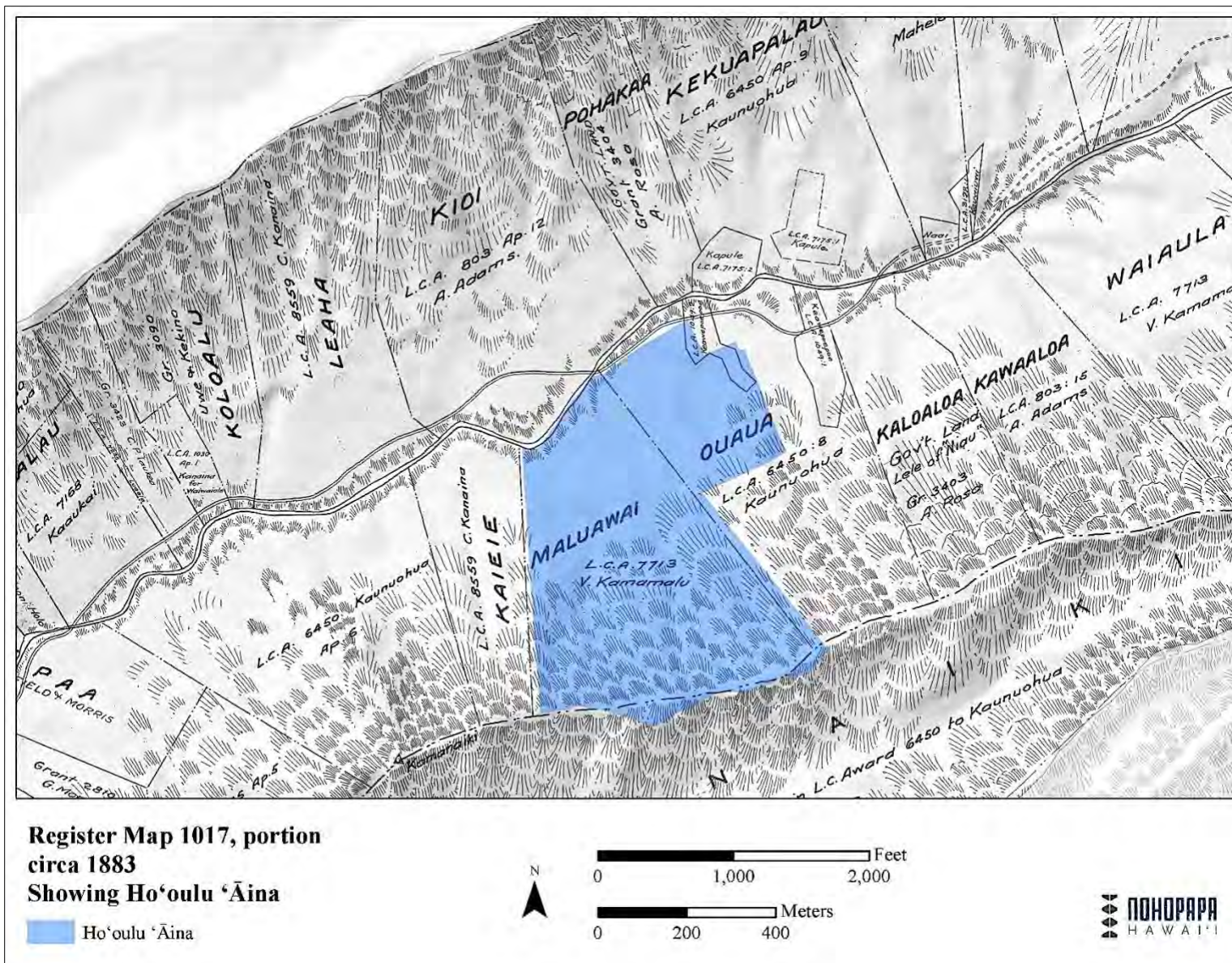


Figure 17. Register Map 1017, with study area highlighted in blue, ca. 1883



Kalihi Valley, Pearl Harbor in the distance.  
Figure 18. ca. 1935 aerial photo of Kalihi Valley with Pearl Harbor in the distance (Bishop Museum Archives CP59991)



Families, like Ms. Alatan's, owned parcels comprising the modern park, but parcels were sold off in the 1970s to a land developer, Herbert Horita (ibid). The proposed development was the construction of a private gated residential subdivision.

"In response to these concerns, in 1980, the City and County of Honolulu purchased the 100 acres for a park." Consequently, the neighboring community and a group of hunters from Kalihi Valley led the struggle to gather over 100-pages of documents, including community interviews, details of the pā pōhaku and 'auwai remains, and an alternate proposal for the site. The community wanted a gathering place to engage with the environment in its natural state. These efforts resulted in various legal battles with the State of Hawai'i and the development company.

In conjunction with community-based efforts to stop the development of a gated community, Kōkua Kalihi Valley (KKV) sought innovative ways to continue to serve and improve the health of the community. KKV medical providers asked patients, "Where do you feel most healthy?" The response was not in the medical clinic itself but outside in the open air gardening or engaging with the environment. Consequently, KKV began looking at land parcels to lease.

In short time, the Kalihi Community and KKV combined efforts to secure the site from the private developer.

In 1980, the private land developer ran into tax issues with the State of Hawai'i. In response, The City and County of Honolulu purchased the 100 acres "for a park." The park land was designated to preserve a watershed to protect Honolulu's drinking water, and the property was managed by the Honolulu Board of Water Supply. However, the property was neglected and essentially sat dormant for twenty or so; unfortunately, drug usage, dumping, and other illegal crimes became prevalent during that time.

In 2003, KKV secured the lease for the site and shortly thereafter HĀ was founded. In 2004, a subsequent 20-year lease of the 100-acre park was approved for KKV.

## PREVIOUS ARCHAEOLOGICAL RESEARCH

This section provides a review of previous archaeological studies within or relevant to the HĀ park. It overviews previous archaeological studies, and discusses historic properties identified (Figure 20).

Only two archaeological studies have been conducted within the 100-acre park -- one in 1980 and the other in 2005. Thrum's identification of a significant heiau in Hawaiian history is included here because of its proximity to the park.

### 1906 Thrum

Thrum identifies Ka'ie'ie heiau as being of ho'oulu'ai class, in Kalihi-uka, and "on the premises of Dr. Huddy." The 'Ili Ka'ie'ie is adjacent to HĀ to the west, is only 27-acres, and shares its entire eastern border, a little under 2,000-feet, with HĀ .

### 1980 Connolly Archaeological Reconnaissance Survey

An archaeological reconnaissance survey was done in 1980 by Richard Connolly of Archaeological Research Associates, for what at that time was the proposed Park site. It should be acknowledged that the recommendations resulting from this survey were thoughtful and concise, they looked not just at individual archaeological features, but at Maluawai as a place, and considered Hawaiian agricultural systems as a whole (Connolly 1980:9-11). Features were not located by GPS, however a sketch map and photographs were included (photos included in Appendix B).

Connolly observed significant alterations to the landscape that were on-going in the 1980s; occupied residences, commercial operations, and illegal dumping.

Historic structures on the proposed park site included two houses, presently occupied and two private nurseries, presently in commercial operation. Other historic modifications to the park site include (1) several jeep trails, previously paved, but now in a state of disrepair; (2) several of what appear to be either borrow pits or bulldozed house lots; and (3) several large grassy field that may have been previously bulldozed or artificially leveled. Many pieces of abandoned, rusted machinery—mainly automobiles—were seen during the survey, which demonstrated that at least portions of this area have been used historically as a dump (Ibid:5,6).

This study identified an "agricultural complex" which has been designated State Inventory of Historic Places (SIHP) # 50-08-014-03980. The bounds of the site were approximately drawn on a map and recommended for "Intensive Survey." This agricultural site consists of smaller identified features, including 'auwai (traditional irrigation ditches), terraces, and retaining walls; it spans the border of the 'Ili Maluawai and Ouaua it is about 6-acres in size (see Figure 5). Portions of this identified area were sub-designated as "Temporary Sites" 15-years later by Kouneski et al.

### 2005 Kouneski et al. Archaeological Assessment

The purpose of Kouneski et al.'s 2005 Archaeological Assessment (AA) was to "identify sites and determine their general location on the property."

What the AA did not do:

- Compiled no oral histories or comprehensive LCA research.



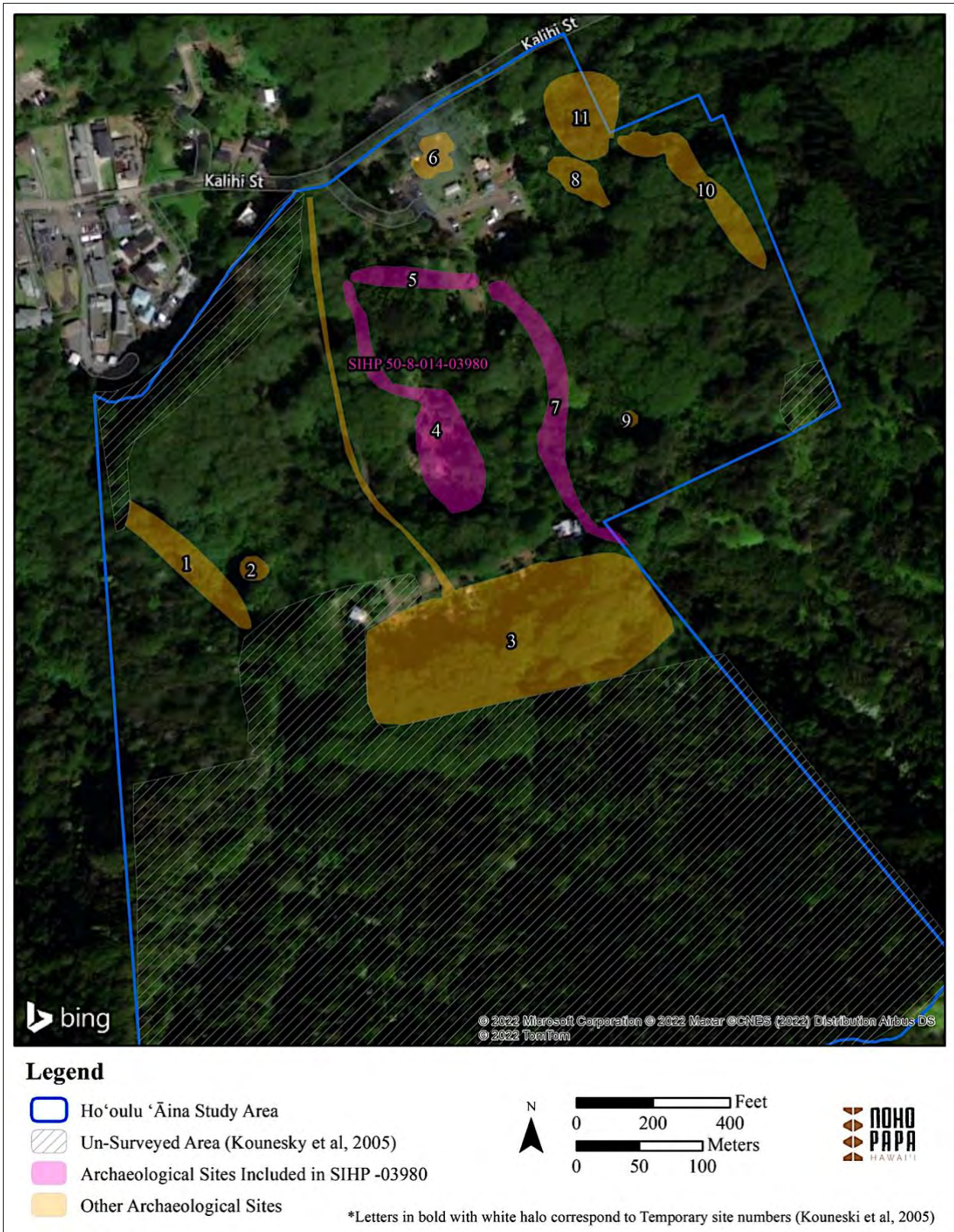


Figure 20. Aerial image featuring the majority of the KKV-HĀ study area overlain with locations of SIHP#-3980, comprised of Temporary Sites 4,5, and 7 and other temporary sites as designated by Kouneski et al. 2005

Table 3. Table of previously identified historic properties within the HĀ study area and proposed . Please note that site numbers correlate with Figure 20; all are temporary site numbers except for SIHP #- 3980, which is on file with the SHPD

Site Number	Source	Feature	Type	Provenance	Function	Notes	HĀ Master Plan Area
1	Kouneski et al. 2005	A	Stream bank retaining walls	Undetermined	Water diversion	Stacked small boulders, intact, faced in N. probably extends south along stream (not surveyed)	Site(s) within the riparian zone, alongside an existing trail, outside any active management identified in HĀ Master Plan footprint.
		B	Rock walls		Water diversion	Parallel stone walls, perpendicular to stream & earthen ditch extending uphill	
		C	‘Auwai		Water diversion, into stream.	Linear rock mound, parallel to gulch. posited it was for water channeling during heavy floods	
		D	‘Auwai		Water diversion	Low mounded wall on NE side of stream	
		E	‘Auwai		Water diversion, into stream.	Free standing wall parallel to gulch. forming side of stream bed for 10m in open, then extends into dense hau & was not followed.	
2	Kouneski et al. 2005	N/A	Midden	Historic	Habitation related	Possible historic refuse scatter	
3	Kouneski et al. 2005, Palama 2005	N/A	Nursery	Historic to Modern	Commercial nursery, road, and habitation	Constructed ~1950, used intermittently through 1980s.	Existing: Protected Native Forest area, Caretaker’s Yurt, Shade House, Hale Imu, Bunkhouse, Shed, Tea House  Planned: Shed, Storage workshop/ machine repair, composting toilets, hale for Programmatic growth

Site Number	Source	Feature	Type	Provenance	Function	Notes	HA Master Plan Area
<b>SIHP # -3980</b>  (Temp #s 4, 5, & 7)	Connolly 1980,  Kouneski et al. 2005,  Palama 2005	4.A	Stream bank retaining walls	Traditional Hawaiian	Agriculture and/or water diversion	Infrastructure for kalo farming with sites and features associated with the traditional cultivation of kalo in a wetland agricultural system.	2022 HĀ Master Plan proposes: No-development in the area, and site management through continuous and appropriate cultural use.
		4.B-D	Rock mounds				
		4.E	Rock alignment				
		4.F	Terrace & rock mound				
		4.G-K	Terraces				
		4.L-O	Rock mounds				
		4.P	Terrace				
		5.A	Stream bank retaining wall		Possible habitation		
		5.B	Terrace				
		5.C	Stone platform				
		5.D	Stream bank Retaining wall		Agriculture and/or water diversion		
		5.E	stone dam				
		7.A	Stream bank retaining walls				
7.B	Rock mound						
<b>6</b>	Kouneski et al. 2005, Palama 2005	N/A	Historic house	Historic to Modern	Modern Habitation	Main house alongside Kalihi Street. Constructed in the 1930s, the house has been occupied, renovated and added on to intermittently well into the modern era.	For existing structure(s) 2022 Master Plan proposes installation of photovoltaic panels, courtyard resurfacing, and the installation of a retaining wall to support the hale, Cistern upgrades  Proposed complex additions: Halau Waa, Machine baseyard, Widen Gate, Food Production, Fencing, Exhibition space.

Site Number	Source	Feature	Type	Provenance	Function	Notes	HA Master Plan Area
Site Number	Source	Feature	Type	Provenance	Function	Notes	HA Master Plan Area
<b>8</b>	Kouneski et al. 2005	A	Stone-retained slope	Undetermined	Habitation related		Site(s) is within the "Protected Native Forest" portion of the 2022 HĀ Master Plan footprint. Nearby proposed facilities have been located specifically to avoid site.
		B	Dilapidated house	Historic			
		C	Pump house				
		D	Well				
		E	Stream bank retaining wall	Undetermined			
<b>9</b>	Kouneski et al. 2005	N/A	Rock mound	Undetermined	Boundary/land mark		Protected Native Forest
<b>10</b>	Kouneski et al. 2005	N/A	Stream bank retaining wall	Undetermined	Water diversion		Protected Native Forest
<b>11</b>	Kouneski et al. 2005	A	Historic refuse site	Undetermined	Habitation		Food Production
		B	Rock alignment	Undetermined	Habitation		
		C	Historic midden scatter	Undetermined	Habitation		

- Made no significance determinations -- the report conclusion defers assignment of any significance designations, per the National Register of Historic Places criterion, to “future research.”
- Completed no subsurface study
- Conducted no sketch maps or survey maps of sites
- Collected no GPS data
- Included no site photographs
- Did not address the 1980 Connolly area recommended for intensive survey nor did it add specific clarification to the extent or bounds of SIHP # -3980

What the AA did do:

- Identified sites in the accessible terrain ~47% of the property
- Created an “approximate” map depicting site locations (Kouneski et al., 2005:33, see Appendix A)
- Identified 11 sites Summary of Previous Archaeology

### ***Site Locations***

The sites comprising SIHP # -3980 have been located on the property, however, the accuracy of their location is not ideal -- all current site maps are only approximations. As part of HĀ’s 2013 Master Planning process, planners and community members were engaged to compile detailed maps of the property, hydrography, contours, existing structures, and future plans. Although not specifically commissioned to better understand the archaeological sites, the 2013 HĀ Master Plan maps probably most accurately display the park locations of historic properties, ‘auwai, traditional wall remnants, and terraced areas.

### ***Traditional Hawaiian Agriculture***

There is the remnant of ancient Hawaiian kalo growing infrastructure, ‘auwai, lo‘i, possibly a mānowai or poowai, and possibly cleared or platformed areas for pā hale and other uses. An interview in Palama’s 2005 CIA confirms the presence of these fields, overgrown with California grass in the 1950s. The Connolly study (1980) confirms that these structures, terraced fields with traditional water diversions, still exist on the property. A 2005 Archaeological Assessment supports this, and knowledgeable HĀ land managers, some with extensive kalo farming experience, agree.

### ***Previous Archaeological Recommendations***

Some confusion exists regarding site recommendations from the 2005 Archaeological Assessment (Kouneski et al. 2005). In two places, the authors recommend extensive future work for “all sites” (Ibid:32, 33). They explain that the work should be “in the form of plan mapping, subsurface testing and document research ...” Additionally, the work should include an assessment of Significance after the determination of “function and age of sites.”

After an intensive review of the document, including the ‘Site Description portion of the AA (Ibid:22), we can see that at least two sites and almost all of the features in another do not appear to contain any requirements or recommendations for future work including any plan mapping and/or subsurface testing. Additionally, the function and age of sites are already known. This remains somewhat perplexing and confusing.

Site 3, nursery site, is acknowledged as having several historic components, and the Kouneski et al. 2005 AA reports: “Many [sites] have been added or modified in modern times and will not need to be considered further in the survey” (Ibid:22). The site features appear to lack the significance criterion for the National Register of Historic Places (NRHP), they also appear to lack integrity; this is elaborated on and supported by information in the 2005 CIA by Palama (see interviews) and the 2013 HĀ Master Plan.

Site 6, a home built by the Marek’s in the late 1950s, is described as being “in various stages of deteriorating condition” HĀ Master Plan 2013:11). It has also been added to over time per the Kouneski et al. AA (2005:26-7) and per the granddaughter of the original owner, Ms. Toni Alatan, in the Palama CIA (2005:33-43). Based on this first-hand account and the AA description, this structure clearly lacks integrity and Significance Criterion to be eligible for the NRHP. The stories that Ms. Alatan shared about her “ancestral home” are important for the historical record (Ibid).

Site 8, a “small dilapidated house, a stone retained slope...a small rectangular pump house, a well and a stream bank retaining wall made of cement block, stone and mortar” (Kouneski et al., 2005:28). These features are assigned, respectively, B, A, C, D, E. Ms. Toni Alatan remembers a bootlegger living in the shack, she also shared stories about the pump house, well, and spring.

The site description also mentions that the well and pump house were “utilized in the early 1900s to collect water from a spring located along the stream. The spring is located at the end of a small gulch” (Ibid). Interestingly, this pūnāwai (spring) was not assigned a feature letter or inspected during the 2005 Archaeological Assessment.

### ***HĀ Park Impacts in the Historic & Modern Era***

The roughly 100-acre Kalihi valley park has been under heavy use since the post-European contact of the Hawaiian Islands. At the time of the Māhele, by the mid-1850s, most of the HĀ property was grassland, with few trees, as a result of cattle (HĀ Master Plan, 2013). Reforestation, resulting in the current introduced vegetation, wasn’t established until after 1930.

At some point in the 1800s and possibly into the 1900s, Chinese farmed in the area if not within the park itself (Palama 2005: 36). The 1900s saw a period of intensive use as a nursery, eventually families owned and lived on portions of the park, and finally we see a more recent period marked by illegal dumping and illicit use. All of these land use phases might have negatively impacted some of the original and traditional Hawaiian cultural sites within HĀ. Interestingly, some of the remnants of these various land use phases are now considered historic.

Existing HĀ park research supports the notion that many of the on-site historic structures (Temporary Sites 3, 6, and 8) were used into modern times but fell into disrepair or were vandalized.

The sites described in the Kouneski et al.’s 2005 Archaeological Assessment along the western border (Temporary Sites 1 and 2) and at the northeast corner (Temporary Site 10) could be traditional Hawaiian sites similar to those located to the northeast of the HĀ park on Board of Water Supply lands. These features were surveyed by Aki Sinoto (1988) who suggested that “the placement and characteristics of the features indicate historic/modern period erosion control functions, most likely related to watershed maintenance, forestation, siltation control, or roadways” (Ibid).

These possible traditional Hawaiian sites might have been impacted by historic use but still seem to be significant in their remnants. The central park terraces and 'auwai are Hawaiian in origin.  
HĀ

## RECOMMENDATIONS AND HISTORIC PRESERVATION NEXT STEPS

KKV, the current land manager of HĀ, is dedicated to better appreciating, preserving, and restoring traditional Hawaiian cultural sites and practices within the roughly 100 acre Park lands (HĀ Master Plan 2013). The primary objective of this revised and updated addendum is to integrate all available previous cultural, historical and archaeological data about this wahi pana, Kalihi Uka. In addition to including ethnohistorical research, this document is also based on Native Hawaiian oral history and knowledge. This revised and updated addendum to Kouneski et al.'s 2005 Archaeological Assessment will also inform an environmental assessment (EA) performed in support of a 2022 Master Plan for KKV and HĀ, required by their DPS land lease agreement that expires in 2024. KKV is updating their master plan to support a programmatic plan and future growth. KKV's objectives include providing the communities they serve with increased access to an environment and place conducive to indigenous lifestyles, and opportunities to engage in 'āina-based cultivation and restoration, in furtherance of their overarching goal to restore the health of the land and the health of the people. This section provides recommendations and historic preservation next steps for the revised and updated 2022 KKV and HĀ Master Plan as it pertains directly to historic properties (Figure 21).

### Site-by-Site Recommendations

The following management recommendations for Ho'oulu 'Āina are based on all available information gathered from this study, including archival research, first-hand observations, surveys, community interviews, critical assessments by the authors of this report, and HĀ's long term master planning maps.

#### ***Temporary Site numbers 1 and 2***

Site 1 is a series of adjacent and in stream features including stacked walls, mounds, and retaining walls described as water diversions (Kouneski et al. 2005:21, See Appendix A). These features are possibly traditional Hawaiian in origin. However, because similar structures were interpreted on the opposite side of Kalihi stream as "related to old Kalihi Street construction" (Sinoto et al., 1988:5). Specifically, Site 2 was interpreted as a "possible historic refuse scatter," that might be "habitation related" (Ibid:22).

These two sites are located in the northwest of the study area within the "Protected Native Forest" area of the 2013 HĀ Master Plan footprint. Currently, no activities, structures, etc. are being planned or proposed that would impact these properties.

At this time, preservation in place and no archaeological work is recommended for these sites. If plans change, these features should be considered for future historic preservation compliance review based on the proposed actions.

#### ***Temporary Site number 3***

Site 3 is a nursery, the remnant of the road accessing the nursery, and a house associated with it. Some of these features were established in historic times (50-years or older), and all were used into the modern era. The nursery and this area are associated with significant earth movement tied to soil mining and the sale of that soil through nursery activities.





Figure 21. An illustration of KKV and HĀ's 20-year Site Master Plan (courtesy of G70) superimposed with Nohopapa Hawai'i's historic preservation next steps recommendations

Kouneski et al. indicate no for future work for this site (2005:22). Based on this and the description of these features, in addition to interviews from the 2005 Palama CIA, these features are found to lack the Significance criterion to merit consideration for the NRHP. Additionally, these features appear to lack integrity.

No future archaeological work is recommended for Temporary Site number 3.

***SIHP Site # -3890 – Includes Kouneski et al. 2005’s Temporary Site numbers 4, 5, and 7***

This site is traditional Hawaiian in origin based on the terrain, Māhele documents, interviews from the 2005 CIA (Palama), data from a 1980 Archaeological Reconnaissance Survey (Connolly), a 2005 Archaeological Assessment (AA) (Kouneski et al.), a map of Site 4 produced by Alan Carpenter during a 2007 archaeological inventory survey (Figure 22) and firsthand accounts from HĀ staff and community.

SIHP# -3890 consists of at least three series of ‘auwai (stone lined ditches) that feed a series of terraced lo‘i kalo (irrigated taro fields) which make up an agricultural complex in the central area of the park; they are also interspersed with standing and retaining walls, a possible platform, rock mounds, and alignments. Kouneski et al. 2005’s Temporary Site numbers 4, 5, and 7 comprise SIHP # -3890.

The ‘auwai and terraced fields “remain in varying stages of disrepair.” (2013 HĀ Master Plan:11) This general agricultural system was given SIHP # -3980. Connolly (1980) approximated the boundaries, of the agricultural complex, as did Kouneski et al. during their 2005 AA.

Figure 22 features a plan view map of the terraces and lo‘i comprising SIHP# -3890. As long as use in the area is limited to continuous cultural use with no impacts to its significance or integrity, preservation in place with no additional work at this time is recommended.

***Temporary Site Number 6***

Site 6, is the main house on the property. Built in the 1930s, it sits just off Kalihi Street. The interview with Ms. Toni Alatan contributes greatly to the historical context of the house.

The HĀ Master Plan includes work at the site of the main house, as it is in the operational center of the park, including installation of photovoltaic panels, courtyard resurfacing, and the installation of a retaining wall to support the hale. While the house was built in the 1930s, additions were conducted in a haphazard fashion into the modern period (Kouneski et al., 2005 and Palama 2005).

No future archaeological work is recommended for Temporary Site number 6.

***Temporary Site Number 8***

Site 8 consists of four features, a stone-retained slope, a “dilapidated house,” a pump house, a well, and a mortar stream bank retaining wall. This collection of features is located in the northeast corner of the park, within the “Protected Native Forest” area of the HĀ Master Plan footprint. Presently, no activities, structures, etc. are planned or proposed that would impact these properties.

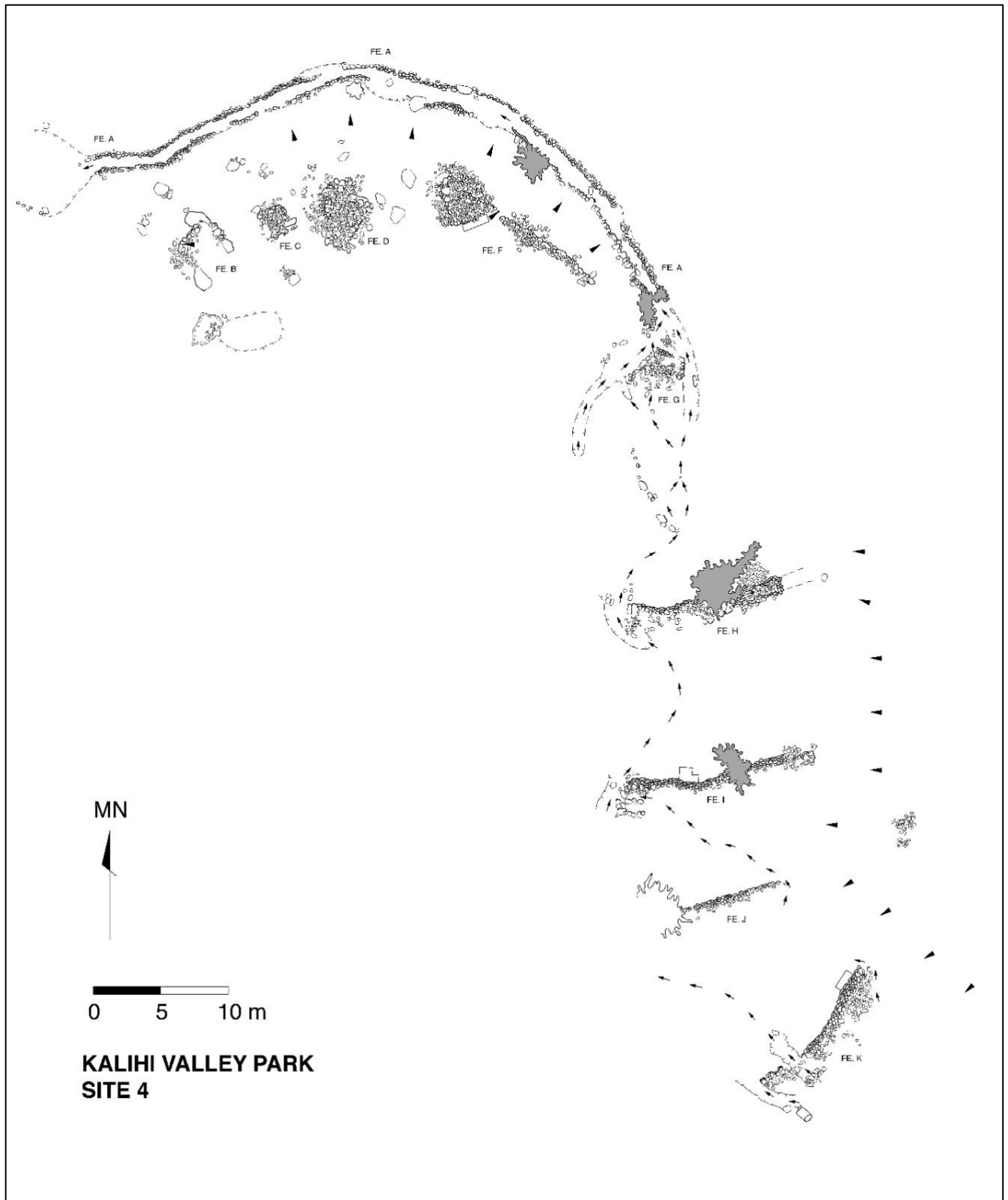


Figure 22. A 2007 archaeological plan view site map of Temporary Site 4, a component of SIHP # -3890 (courtesy of Alan Carpenter, DSP)

It is likely that the condition of the small “dilapidated” house and pump house might not warrant future work, definitely not the plan mapping or subsurface testing suggested in the 2005 Archaeological Reconnaissance. The pump itself, the well, the retaining wall and the actual pūnāwai should be assessed and considered in any future studies. Ms.Toni Alatan conveyed stories about this pūnā in her interview in the 2005 CIA (Palama).

Preservation in place and no further archaeological work or historic preservation next steps are recommended for this feature. If plans change, or for future projects requiring historic preservation compliance review, these features should be considered in historic preservation next steps recommendations. If a future study looks at this Site, in addition to the features described in the Kouneski et al. 2005 Archaeological Assessment, the pūnāwai, the spring that feeds the well and pump, should be located and considered.

### ***Temporary Site Number 9***

Site 9 is an ahu constructed of cobbles and a boulder and is tentatively interpreted as being a boundary marker.

This site is located in the “Protected Native Forest” area of the HĀ Master Plan footprint. At this time, no activities, structures, etc. are planned or proposed that would impact this feature.

Currently, preservation in place and no archaeological work is recommended for this site. If plans change, this feature should be considered for future review based on the proposed actions.

### ***Temporary Site Number 10***

Site 10 is a stream bank retaining wall whose function is described as water diversion by Kouneski et al. (2005:29). Possibly, it is traditional Hawaiian in origin. However, because similar structures were interpreted on the opposite side of Kalihi stream, it might be “related to old Kalihi Street construction.” (Sinoto et al. 1988:5)

Located in the eastern boundary of the park, this feature is within the “Protected Native Forest” area of the HĀ Master Plan footprint. At this time, no activities, structures, etc. are planned or proposed that would impact these properties.

Currently, preservation in place and no archaeological work is recommended for this site. If plans change, this feature should be considered for future review based on the proposed actions.

### ***Temporary Site Number 11***

Site 11 includes three features -- two historic refuse scatters and a stone alignment that are associated with a temporary habitation site (Kouneski et al., 2005:29-30). In fact, Ms.Toni Alatan (Palama 2005) explained that a bootlegger once lived in a shack at this location.

Located in the in the northeast most corner of the park, this feature is within the “Protected Native Forest” area of the HĀ Master Plan footprint. At this time, no activities, structures, etc. are planned or proposed that would impact these properties.

Currently, preservation in place and no archaeological work is recommended for this site. If plans change, this feature should be considered for future review based on the proposed actions.

## Recommendations Summary

The primary objective of this revised and updated addendum is to integrate all available previous cultural, historical and archaeological data about this wahi pana, Kalihi Uka. In addition to including ethnohistorical research, this document is also based on Native Hawaiian oral history and knowledge. This revised and updated addendum to Kouneski et al.'s 2005 Archaeological Assessment will also inform an environmental assessment (EA) performed in support of a 2022 Master Plan for KKV and HĀ, required by their DPS land lease agreement that expires in 2024. KKV is updating their master plan to support a programmatic plan and future growth. This report fulfills the Connolly's (1980:10,11) historic preservation next step recommendations for a literature review "to ascertain if any additional recorded information exists pertaining to the project site area." In particular, this report contributes the identification of Ka'ie'ie heiau, which would have been located in the neighboring 'ili of Ka'ie'ie as particularly important to understanding the history of the park, and the potential importance of the HĀ Park's agricultural systems to the area.

Beyond DSP lease renewal, KKV's objectives with the 2022 KKV-HĀ Master Plan include providing the communities they serve with increased access to an environment and place conducive to indigenous lifestyles, and opportunities to engage in 'āina-based cultivation and restoration, in furtherance of their overarching goal to restore the health of the land and the health of the people. No changes or modifications are proposed to historic properties in the 2022 KKV-HĀ Master Plan. For all historic properties in the KKV-HĀ study area, either no present and future work or preservation in place with no additional work at this time is recommended (Figure 23). Specifically:

- SIHP # -3890 labeled as the Kalihi Upland Agricultural Complex as registered with SHPD by Connolly (1980), which includes temporary site numbers 4, 5, and 7 as described above and depicted in Figure 19. The current HA 20-year master plan identifies the only area use as agroforestry, and specifically culturally continuous use, such as kalo farming. At this time we recommend no additional work. If the Master and/or site plan changes, this recommendation should be re-evaluated.
- Preservation in place with no additional work at this time is recommended for Temporary Site numbers 1, 2, 4, 8, 9, 10, and 11. If plans change these features should be considered for future review based on the proposed actions.
- No future archaeological work is recommended for temporary site numbers 3 and 6.



Figure 23. An aerial image of a segment of the KKV-HA study area superimposed with locations of the historic properties described above and Nohopapa's historic preservation next steps recommendations

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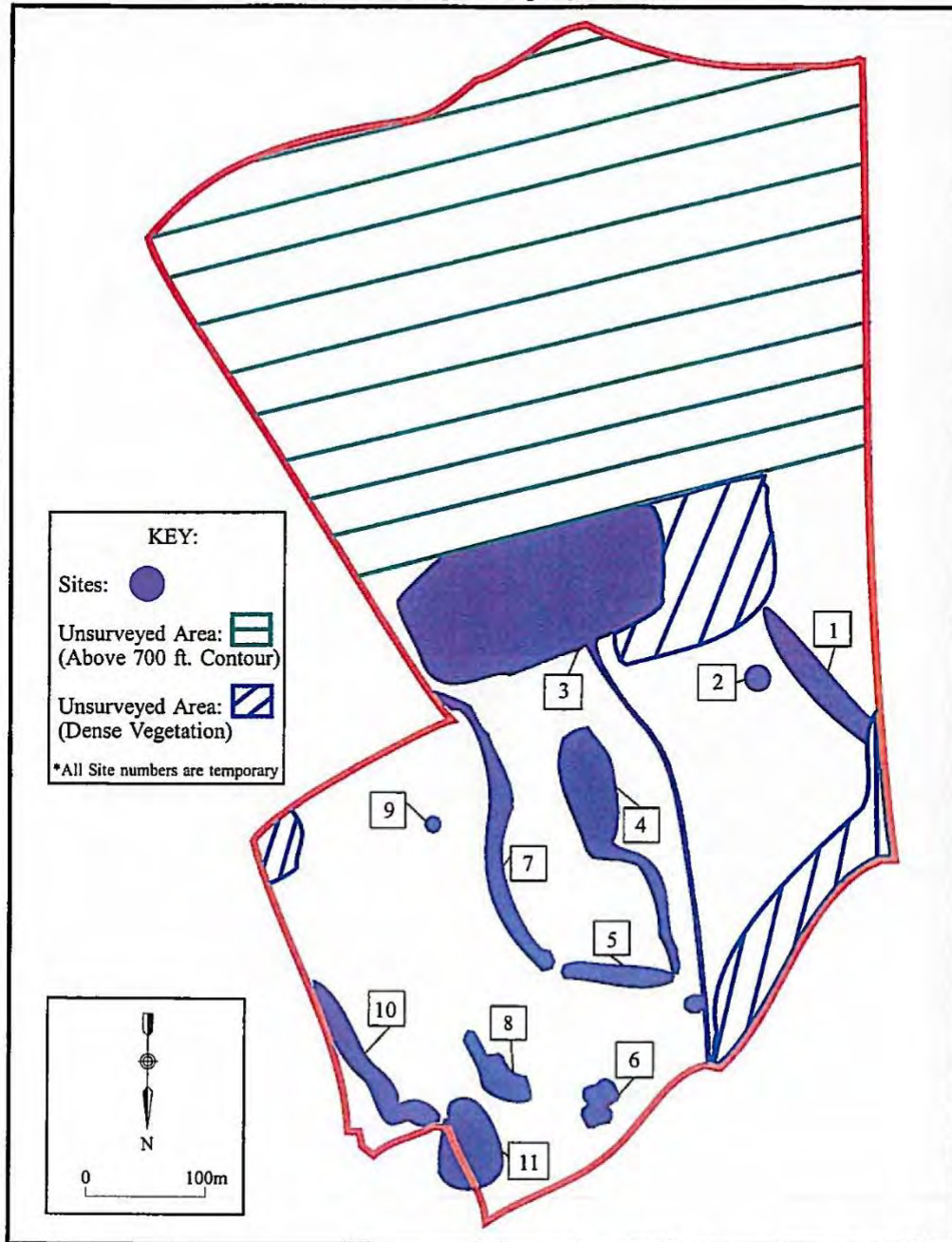
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# APPENDIX A – Site Descriptions from the 2005 Archaeological Assessment (Kouneski et al. 2005:20-30)

Figure 7: Subject Property Site Plan



Kalibi Ahupua'a  
TMK: 1-4-14: 01 & 26 and 1-4-16: 03

Archaeological Consultants of the Pacific, Inc. 2005

## Section 5.1: Site Descriptions

### *Site 1*

Site 1 is comprised of stream bank retaining walls that line the major water channel (intermittent streambed) in the western-most gulch on the property. In addition, secondary *auwai*-like water diversion rock mounds run above the streambed in some areas, and perpendicular to the streambed, diverting water into the stream, in other areas.

**Feature A** –This feature consists of stream bank retaining walls, intact and faced in only a few portions of the lower (northern section) of the stream. Each intact section measures about 1-2 m. in length, and consists of small boulders stacked three to four courses high varying in height between 0.5m and 1m. The survey of this gulch began just above its 30 foot cliff that drops down toward Kalihī Stream. About 50-75m above this cliff along the gulch, the stream becomes thick with *hau*. Following the present scope of work, the archaeologists could not proceed further along the stream due to the vegetal restrictions. Additional stream bank retaining walls are likely to exist throughout the *hau* area, and may be well-preserved.

**Feature B** –This feature consists of two parallel stone walls running perpendicular to the main stream channel. The walls are 3-4 m apart and extend up the stream bank hillside for 2-3 m. A ditch without stone lining or walls extends for another 10m up the hillside from the end point of the walls. This feature appears to be an *auwai*-type structure diverting or channeling water off the hillside ditch into the main streambed.

**Feature C** –Further up the ditch on the east side, across from a large banyan tree is the beginning of a linear rock mound. It runs parallel to the gulch (SE/NW) about 2m to the west of the streambed and measures 7m in length. The mound is 0.8 m wide and less than 0.5 m in height. It consists of small boulders measuring 20-30 cm in diameter. This is considered an *auwai*-type feature that probably served to keep water within the streambed path during heavy floods.

**Feature D** –This feature begins about 10m further E/SE up the streambed from Feature C. It consists of a low, mounded wall that begins about 1m above the stream on the NE side and extends for 3m further N/S, perpendicular to the streambed. A large tree is growing out of the middle of the feature. Again, its function appears to be associated with diverting water into the stream.

**Feature E** –Two meters further up the streambed from Feature D is Feature E, a free-standing mounded boulder wall consisting of small boulders that runs parallel to the gulch. At this position, the streambed is shallow, and the mound appears to form one side of its wall. The wall is about 0.8m wide and 0.5-0.8m in height. At one time, the wall may have been bi-faced, core-filled, but at this time, no specific construction method could be identified. It extends for 10m into dense *hau* and appears to extend further, but the archaeologists could not investigate the area due to vegetal restrictions.

### *Site 2*

This refuse site is located on the ridge to the east of the western-most gulch (Site 1). The site appears to be in the vicinity of the proposed shelter/*halau* and hiking trail area for the Kalihi Valley Nature Park (see Figure 6). On the ridge, the terrain flattens. A refuse site, covering an area measuring 5m in diameter, is located on this level area and the top portion of the western slope of the ridge. A number of glass bottles and jars of clear and brown glass were encountered. Dates could not be determined for these bottles in the field. No samples were collected at this time.

### *Site 3*

This site consists of features associated with the nursery on the upper section of the property. The features include a house, a driveway and other road cuts, a number of large sheds and storage facilities, and a small abandoned equipment shed and metal tank located along the lower portion of the old easement driveway. The nursery residence is a utility style home built on the top of the bank along the middle gulch. Reinforcement walls made of cinderblocks and stones line the hillside on which the house is located. The house itself has plywood walls, and corrugated roofing. Its construction appears to be modern, although it may have been standing before 1950 and has since been modified. Behind the house is a large area that appears to have been mechanically leveled. Three large storage facilities in this level area contain old cars, piping, wood, planting pots, and other refuse once utilized by the nursery. Behind the house about 50m south is a small Japanese tea house associated with the Buddhist monastery adjacent to the subject property. It is abandoned and in deteriorating condition. An old driveway ran from Kalihi Street up to the nursery grounds and small portions of asphalt remain along this pathway today. Along the lower part of this roadway near Kalihi Street is a dilapidated equipment shed containing electrical boxes, metal debris, watering cans, wood, etc. A metal tank stands next to the shed. It is rusted through in many places, and it stands about 3m high with a diameter of about 1.5m. According to informant testimony, the nursery was constructed just before or around 1950, abandoned for a while, then re-used until the early 1980's. Therefore, while some of these sites associated with the nursery are historic, many have been added or modified in modern times and will not need to be considered further in this survey.

### *Site 4*

This site extends throughout the gulch and intermittent streambed that runs along the nursery's driveway easement. The site consists of stream bank retaining walls, a number of stone mounds both free-standing and contoured to the slope, a few water diversion walls/terraces or dams, and four major agricultural terraces. There appears to have been significant amounts of soil deposited in this low-lying gulch area between two ridges.

**Feature A** (see Figure A1) –This feature consists of the stream bank retaining walls that run along the gulch. The facing does not occur continuously along the total length of the feature. It occurs on both sides of the gulch in some areas, and only on one side in other portions. The first intact facing on the stream bank walls occurs about 30-40m south of where a stream branches to the east of the main stream. This facing runs for about 4m on one side of the bank, then becomes tumbled. About 30m further south up the stream, the ditch is lined on one side with small to medium boulders 30-70cm in diameter, stacked five courses high. About 13m further south, the stream becomes lined with retaining walls on either side. The gulch is about 1m wide at this point. 20m to the south is Feature B (a stone mound). The streambed continues for another 30-50m then ends in four large agricultural terraces. Above the terraces the streambed is defined again and is lined on the west side. Here the wall that lines the ditch appears to have been free-standing at one time, but soil has accumulated on the back side making it appear to be a retaining wall built into the stream bank. This portion of the wall can be seen extending for 20m further south along the streambed. At this point, the vegetation became impenetrable, and following the present scope of work, the archaeologists did not pursue this feature further.

**Feature B** (see Figure A2) –This feature is a stone mound contoured to a small slope. This is the first of four rock mounds that run east up the valley alongside the streambed. At this location the stream is oriented 60/240, or almost E/W. Feature B is faced on the west side, standing four to five courses high. The exterior height from the existing surface is 1m on the west side. The mound has three sides, with a width (east to west) of 3.4m. The surface of the mound is fairly level and rock-filled. Some of the mound appears to be incorporated into natural outcrop. The function of these mounds is indeterminate at this time.

**Feature C** (see Figure A2) –This feature is a rock mound with no faced walls. Its dimensions are 2.1m (N/S) by 1.6m (E/W). It is 0.7m in height and is composed of sub-angular cobbles and small boulders and one natural rock outcrop. It is located about 3.2m east of Feature B.

**Feature D** –This rock mound was once formally stacked on one side, but is mostly tumbled now. Some natural outcrop was also incorporated into the feature. It measures 4m (N/S) by 3.5m (E/W) with an exterior height on the north of 1.1m. The feature, composed of large and small boulders, is cobble-filled. It lies 3.5m east of Feature C.

**Feature E** –This small stone alignment runs parallel to the streambed further south of Feature B. It is partially buried in soil and lines a small rise, running for 2-3m.

**Feature F** –This feature consists of two parts, a terrace or stone-retained slope and a mound built on top of the western end of this terrace. The total length of the terrace portion is 15m and runs SE/NW along the streambed. The exterior height of the terrace on the southeastern end is 0.76m and on the northwest is 1.1m. On the northwest end, another smaller wall runs parallel to the terrace and appears to be of the same construction period. The terracing and parallel wall is made of large and medium

boulders and large cobbles. Between the two walls at the northwestern end is a mounded area that extends another 0.4 m on top of the terrace. The width is about 1.5m between the two walls and it runs for 3.5m, the length of the smaller wall. The mound appears to be part of a later construction period, and it consists of loosely piled cobbles that fill the area between the two walls.

**Feature G** –This feature serves as a small dam for water diversion purposes. It was constructed between two forks in the streambed. It appears to have been faced, and stones are still partially stacked 5-6 courses high. The height is 1m and the width is 4m by 2.5m.

**Feature H** (see Figure A3) –This feature is the first of four agricultural terraces. It runs west to east for 11m and ranges in exterior height from 1 to 1.2m. The east portion of the wall is built up 0.6 m above the surface on the interior of the terrace. This built-up portion extends for 3m. The terrace wall is five to six courses high and composed of large cobbles, small boulders, and boulders. The west end of the wall is tumbled, but at one time, it probably extended to the bank of the low area in which it lies. A large banyan tree grows out of the middle area of the terrace.

**Feature I** (see Figure A4) –12.2m south of Feature H is the second agricultural terrace, Feature I, which runs 250/70 for 15.5m. The exterior height is 1.1-1.2m on the eastern end and 1.5m on the western portion. This terrace is similar in construction to Feature H but is entirely contoured to the slope and therefore has no interior height. A large banyan tree grows adjacent to this terrace as well.

**Feature J** –This terrace lies 8.5m to the south of Feature I. It is considerably shorter in wall height than the previous two. It is 9m long and runs 250/70. The exterior height on the eastern end is 0.5m. A banyan tree grows at the western end of this terrace.

**Feature K** –The fourth terrace is 8.6m to the south of Feature J. It is 12m long and oriented at a bearing of 210/30. On the eastern end, the exterior height is .9m.

**Feature L** (see Figure A5) –Further south of the last terrace the gulch is lined again. To the east of the gulch are four mounds and a terrace/ stone-retained slope running along a line oriented N/S. Feature L is the northern-most stone mound. It is partially contoured to the slope with an uphill height of 0.26m and a down slope (exterior) height of 0.97m. It measures 1.7m E/W by 1m N/S. The mound consists of small cobbles and small boulders stacked five courses high on the down slope (western end).

**Feature M** –Feature M is 3m south of Feature L. It measures 1.8m wide on its E/W axis and 2.6m N/S. It is contoured to the slope, and on the down slope end, the height (exterior) is 1.3m. It consists of cobbles and small boulders but some large boulders and bedrock are also incorporated into the structure.

**Feature N** –2m further southeast of Feature M lies Feature N, a stone mound, mostly tumbled. It measures 2.2m E/W and 1.3m N/S with an exterior height on the down slope of 1.3m.

**Feature O** (see Figure A5) –This stone mound lies 2m south of Feature N. This is the only mound that is not contoured to the slope. It is a rectangular mound measuring 2.5m (N/S) by 1.5m (E/W). The height is 1.1m and the structure consists of small to medium sub-angular boulders stacked four courses high. The mound is cobble filled.

**Feature P** (see Figure A5) –This feature, beginning 2.6m south of Feature O, first appeared to be a terrace or stone-retained slope because it was contoured to the slope, however, on closer examination, it seemed to be a typical core-filled wall of which the back side had been filled in with soil deposits. The structure incorporates some natural outcrop. It measures 5.8m long and runs N/S, parallel to the wall that lines the streambed. It consists of large cobble fill on top and small-large boulders stacked 5-6 courses high, forming the wall. The exterior height measures 1.2m. The back side of the wall rises a little above the slope or fill, giving the structure an interior (upslope) height of .36m. The width of the wall is 1.2m.

#### *Site 5*

This site consists of features in the gulch and intermittent streambed that branches east off of the lower (northern) portion of the streambed containing Site 4. The main feature is the well-constructed stream bank retaining wall. Other associated features in the gulch area include a small terrace/stone alignment, a stone platform or possible habitation site, a stream bank retaining wall in a small branch off the main stream, and a small rock dam in the middle of the stream.

**Feature A** (see Figure A6) –This feature consists of stream bank retaining walls found throughout the gulch. Immediately after the stream branches east from Site 4, the streambed is intermittently faced with stones. Many large boulders fill the ditch. The lining occurs on the south side most frequently up to a large banyan growing in the stream. Further east of the banyan, the north side is well-lined reaching 6 courses high. The streambed widens at this point. 10m east of the banyan, the stream narrows again about 1-1.2m in width and both sides become well-lined. This narrow portion stretches for about 12m east until it reaches a second large banyan tree. For the length of the narrow portion of the streambed, the retaining walls are 5-8 courses high and measure 1.6-1.8m above the base of the streambed. The walls consist of small and large boulders. The bottom of the streambed is not lined, although it is filled with tumbled boulders. After the second banyan tree, the streambed splits and the deep, well-preserved retaining walls stop.

**Feature B** –This feature is a small terrace or stone alignment that lies to the north of the streambed containing Feature A. It begins just after the stream branches to the east. It is 3.4m in length running N/S and its width (E/W) is 0.5m. The feature is contoured to the

slope and has an exterior height of 0.4m. It is single stacked and consists of a few large boulders and cobbles.

**Feature C** –Feature C, a rectangular rock platform, lies 8m to the north of the streambed just east of Feature B. The southwest side of the feature is a terrace wall with corners on either side. The platform surface area formed by the terrace is rock-filled in some areas. This appears to be a possible habitation site. The main terrace wall is 25m long. On the SE side, a stone alignment extends to the northeast forming a corner. The corner has an exterior height of 1.1m. The alignment extending from the corner measures about 6m. A similar wall measuring 8m extends northeast from the northwest corner. The northwest corner has an exterior height of 0.8m. In the northeast, corner on the northern end of the structure, a small portion of the back corner is intact as a small wall. Its height is 0.8-0.9m and it stretches 2m SE/NW and 1.4m SW/NE.

**Feature D** –This feature consists of tumbled stream bank retaining walls along the north branch of the intermittent stream. The stream branches east of the second large banyan tree and the deep, lined ditch (Feature A). On this branch, the streambed is shallow. The purpose of its lined walls may have been to direct the water in this branch into the deep, well lined portion of the stream that begins at the banyan tree. The most well-stacked portion of the wall stretches 3.5m and has a height of 0.7m. Further east, the stream becomes lined on both sides, but it is tumbled. One area of the wall is mounded, measuring 0.8-1m wide and filled with cobble and small boulders. This portion of the wall appears to be at the beginning of the stream branch where the water begins to be channeled downward. Further east of this point the stream channel ends and only a level gulch area remains.

**Feature E** –This feature occurs on the south branch of the stream. This streambed/ditch extends southeast from the second banyan tree. It is not stone lined, but its soil walls are deeply cut. About 30m up the stream branch, a rock pile across the stream forms a small dam. The rock pile is tumbled with no specific construction. It is 2m long and 1.2m wide. Modern debris (plastic toys, metal etc.) is caught in the stones of the dam. Many large palm trees are located in this level area around the streambed.

#### **Site 6** (see Figure A7)

Site 7 is the main historic house built in the 1930's on the lower central portion of the property, just off Kalihi Street. Building plans are available from the descendants of the original owners (contact Toni Alatan). The house faces Kalihi Street, and the backyard is a cement paved patio area. The back portion of the house on the western end appears to be a newer addition. This portion has a corrugated metal roof, while the rest of the house has tar paper and shingles on a gabled roof. The house is constructed with cinder blocks. Inside the main part of the house, the walls are plaster/sheetrock, the ceiling is an open beam style, and the floor is covered with worn linoleum. A small covered patio outside has a tile floor and a large outdoor oven/fireplace is built into the wall using the same chimney as the indoor fireplace. The back yard is paved with cement



blocks and a moss rock wall that stands nearly 10 feet in height surrounds the backyard. A small rock wall, 1.5 feet in height, runs along the taller wall creating a small koi pond with flower beds on either side. A small drainage channel was built into the cement patio that drained out to the side of the house. A storage shed was built on the western side and on the southwest, a detached studio building was added in the late 1950's. The studio was built with cement tile and has many windows facing east. One wall was built with tongue and groove wood paneling and inside is a small loft. It has open beam construction and the beams are 4x6in. The roof is layered with corrugated metal on top of plywood. The house is now in various stages of deteriorating condition.

#### *Site 7*

This site runs along the large gulch that cuts through the middle of the property up to the nursery and nursery house. Extensive stream bank retaining walls and freestanding walls line the intermittent streambed or divert water like an *auwai* within this gulch.

**Feature A** (see Figure A8) –Feature A consists of the stream bank retaining walls and freestanding wall systems that line the streambed in this gulch. The first remnants of stone lining appear about 50m south from the beginning of the streambed. Here, the ditch is 5-6m wide and small remnants of retaining walls can be seen off and on along both sides. They are constructed with small and medium boulders and some cobbles. The first of these sections occurs on the eastern bank and stretches for 2.8m. It stands six courses high, amounting to 1.1m in height. On the western bank, another retaining wall segment extends for about 4-5m, then a wall on the eastern bank resumes for about 9m. Across from this portion is what appears to be a freestanding wall, crudely bi-faced, core-filled, diverting the water between it and the eastern lined-portion. The backside of this wall appears to have been built into the earth or against the wall of the stream at one time, but the water has since changed directions and washed away all the earth on the backside exposing the wall's construction. Above this portion, the stream bank retaining wall (single stacked lining) continues intermittently on either side, and in portions the wall is thicker, again appearing to have been a regularly constructed bi-faced wall at one time. The lining reaches a large banyan tree growing in the middle of the stream. Here the lining is 8-9 courses high along the deep bank of the stream. Above this is a tumbled, bi-faced, core-filled wall extending further up along the stream. The nursery house is directly west above the hillside from this area. Extending further up the streambed, the lining continues and a wide, solid, core-filled wall about 1m wide with small and medium boulder construction follows the stream, appearing to have served as an *auwai*, directing water downward. In some portions, it appears that soil has filled in on the outside of the wall making it appear to be lining a ditch rather than a free-standing wall. About 100m up from the nursery house, the stream splits, and the wide wall continues on the northeast branch. In certain portions it is nearly 2m wide. This wall continues 200m up the streambed from the nursery house. Archaeological inspection stopped here at the end of the Phase I project area (700 ft. contour line). The wall diverting the water continues further upward.

**Site 9** (see Figure A11)

This small marker or *ahu* is located halfway up the western hillside near the end of the gulch containing Site 8. The site consists of a large boulder with smaller stones piled on top. The natural outcrop/ boulder measures 2.5m by 3m, with a height of 1.5m on the down slope portion (north side). The south side is contoured to the slope. The rocks piled on top of the boulder reach a height of 0.65m, stacked three high in one portion. The rocks include medium size boulders, small boulders and some cobbles. In all, about 12 rocks had been placed on top of the boulder.

**Site 10** (see Figures A12, A13)

This site consists of stream bank retaining walls in the eastern-most gulch that runs along the far eastern boundary of the property. The upper portion of this gulch (the southern end) consists of tumbled portions of retaining walls, and small mounds or dams associated with water diversion in the intermittent streambed. About 40m downstream from the beginning of these small features, the stream becomes well-lined. The stream is faced intermittently on either side as it curves around this area. The average height of the walls from the base of the streambed is 0.7m. First, the retaining wall runs for 12m on the southwest side, then the ditch becomes faced on both sides. The walls extend off and on for another 30-40m before the stream runs off the property boundary.

**Site 11**

This site consists of two historic refuse areas and one small stone alignment associated with a small camp or living site. Informant testimony explained that a small shack had been located in the area. A man had lived there for a time in the '20's or '30's making bootleg liquor.

**Feature A** (see Figure A14) –This refuse site was located to the west of the streambed, probably most of which is off the subject property. A rusted door knob, 2 square-cut stones, metal pans, unused cement bags, condiment jars, Pepsi and Budweiser bottles and cans, many beer (Nippon brewery and others), soda, and wine bottles, milk bottles, sake bottles, rice bowl fragments, possible ink bottles, and a gold-gilded mug (painted with "...Miles" and inscribed with "Made in Germany") were found in the 30m by 30m area that contained the most refuse. Across the stream from the site (off the subject property) were a number of exotic plants indicating that a living site had probably been in the area.

**Feature B** –This small stone alignment was located halfway up the slope of the hill to the west of Feature A. The stone alignment outlines a small level area. It consists of three large boulders lining an area that measures 2m.

**Feature C** –On top of the hill above Feature B was a flat area lined with large trees containing more refuse. It appears that a driveway had once followed the tree line, but no

evidence of a house or shack could be found in the area. A large pit had been dug between two of the trees, presumably by pot hunters, and a number of glass bottles and rice bowl fragments surrounded the hole. Around the area, broken window pane glass, milk, medicine, and beer bottles, pieces of croc pots, the bottom of a vase (inscribed with "R. Samish, 211 Post St. San Francisco"), a metal pitcher (inscribed with "Viko-the popular aluminum"), the inside of a clock, and other debris were encountered.

**APPENDIX B – Site Photos from 1980 Archaeological  
Archaeological Reconnaissance Survey (Connolly 1980:14-17).**

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Figure 3. Soil borrow pit or bulldozed house lot. Photo taken facing southwest.



Figure 4. Part of the lower water diversion system, showing a section of cobble and boulder facing. Photo taken facing southeast.



Figure 5. Down-slope end of the 'auwai pa'a or 'auwai papa, Facing east.

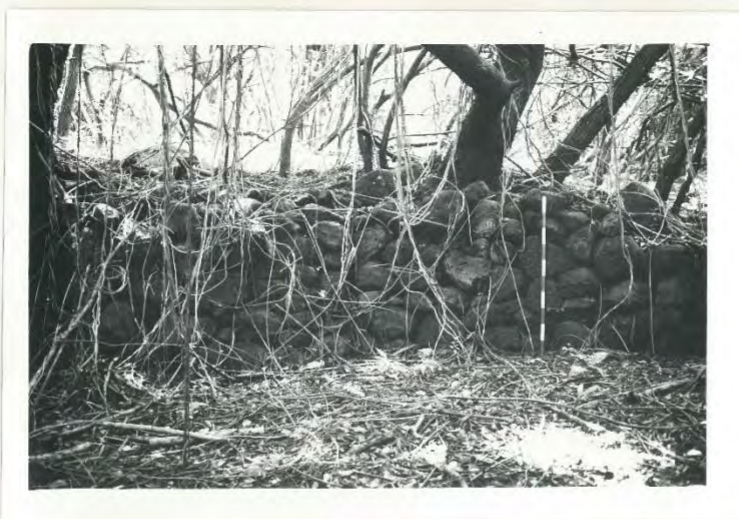


Figure 6. Portion of one of the agricultural terraces, facing south (upslope).



Figure 7. Agricultural terrace in the west valley, facing south (upslope).



Figure 8. Agricultural terrace in the west valley, facing south (upslope).



Figure 9. Portion of an agricultural terrace, showing detail of construction. Photo taken facing south (upslope).



Figure 10. Stone planting or clearing mounds in west valley. Photo taken facing south (upslope).