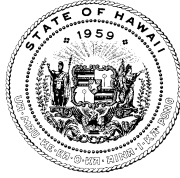


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STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Ka 'Oihana 'Āina Ho 'opulapula Hawaii 'i

P. O. BOX 1879
HONOLULU, HAWAII 96805

October 16, 2025

ref: PO-25-098

Mary Alice Evans, Director
Office of Planning and Sustainable Development
Environmental Review Program (ERP)
235 S. Beretania Street, Room 702
Honolulu, HI 96813

Subject: Cultural Learning Center and Community Farm at Ka'ala Draft
Environmental Assessment – Anticipated Finding of No Significant Impact
(DEA-AFONSI); Tax Map Key (TMK): (1) 8-5-005:007 and (1) 8-5-005:036
Wai'anae Ahupua'a, Wai'anae District, O'ahu

Dear Director Evans:

With this letter, the Department of Hawaiian Home Lands (DHHL) hereby transmits the draft Environmental Assessment - Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Cultural Learning Center and Community Farm at Ka'ala, located at TMK: (1) 8-5-005:007 and (1) 8-5-005:036, for publication in the next available edition of *The Environmental Notice*.

We have uploaded an electronic copy of this letter, and a searchable PDF file of the DEA-AFONSI compiled together by the Applicant's agent, Townscape, Inc., to your online submittal site.

Should you have any questions, please contact Sherri Hiraoka by email at sherri@townscapeinc.com or by phone at (808) 550-3892.

Aloha,

Kali Watson, Chairperson
Hawaiian Homes Commission

From: dbedt.opsd.erp@hawaii.gov
To: [DBEDT OPSD Environmental Review Program](#)
Subject: New online submission for The Environmental Notice
Date: Thursday, October 16, 2025 1:11:18 PM

Action Name

Cultural Learning Center and Community Farm at Ka'ala

Type of Document/Determination

Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Wai'anae, O'ahu

Tax Map Key(s) (TMK(s))

(1) 8-5-005:036; (1) 8-5-005:007

Action type

Applicant

Other required permits and approvals

HRS §6E, Historic Preservation Review Clearance (SHPD); Grading Permit and Conservation Plan, Building Permit (City and County of Honolulu); Individual Wastewater System Permit (DOH)

Discretionary consent required

None

Agency jurisdiction

State of Hawai'i

Approving agency

Department of Hawaiian Home Lands

Agency contact name

Lilliane Makaila

Agency contact email (for info about the action)

lilliane.k.makaila@hawaii.gov

Email address for receiving comments

lilliane.k.makaila@hawaii.gov

Agency contact phone

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P.O. Box 1879
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[Map It](#)

Applicant

Ka'ala Farm, Inc.

Applicant contact name

Eric Enos

Applicant contact email

eric@kaalafarm.org

Applicant contact phone

(808) 696-4954

Applicant address

PO Box 630
Waianae, Hawaii 96792
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[Map It](#)

Is there a consultant for this action?

Yes

Consultant

Townscape Inc.

Consultant contact name

Sherri Hiraoka

Consultant contact email

Sherrihiraoka@townscapeinc.com

Consultant contact phone

(808) 550-3892

Consultant address

900 Fort Street Mall
Suite 1160
Honolulu, Hawaii 96813
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[Map It](#)

Action summary

Since July 1, 2008, KFI has held a gratis license from the Department of Hawaiian Homelands (DHHL) for community and cultural land uses on the 97-acre DHHL parcel in upper Wai'anae Valley (TMK: 8-5-005:036). KFI is now requesting the conversion of this license to a General Lease, which will provide long-term access and continuity for its programs and allow KFI to seek grants and other means to finance planned improvements. KFI plans to maintain its current land uses and facilities while implementing improvements as funding allows. The new facilities planned include a barn, field shelter, and bunkhouse. In addition to new buildings, KFI also intends to expand agriculture production with more acreage developed for lo'i kalo, dryland fields, and an aquaponics system.

Reasons supporting determination

See chapter 7 of the EA for reasoning to support the determination.

Attached documents (signed agency letter & EA/EIS)

- [Cultural-Learning-Center-and-Community-Farm-at-Ka'ala_Draft-EA_October_2025_Submittal-to-ERP_Full_ADA_31.pdf](#)
- [DHHL_Transmittal_Letter_Signed2.pdf](#)

ADA Compliance certification (HRS §368-1.5):

The authorized individual listed below certifies that documents submitted are unlocked, searchable, and ADA compliant. Audio files include transcripts, captions, or alternative descriptions.

Action location map

- [Project-Site3.zip](#)

Authorized individual

Sherri Hiraoka

Authorized individual email

sherri@townscapeinc.com

Authorized individual phone

(808) 358-0479

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

DRAFT ENVIRONMENTAL ASSESSMENT

Cultural Learning Center and Community Farm at Ka'ala

Wai'anae, O'ahu (TMK: 8-5-005:007 and 8-5-005:036)

September 2025



This document prepared pursuant to Chapter 343, Hawai'i Revised Statutes and Chapter 11-200.1, Hawai'i Administrative Rules

Applicant:



Accepting Authority:



Prepared By:



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**Draft Environmental Assessment
Cultural Learning Center and
Community Farm at Ka‘ala
in Wai‘anae
Island of O‘ahu, Hawai‘i**

Tax Map Key: 8-5-005:007 and 8-5-005:036

This environmental document has been prepared pursuant to
Chapter 343, Hawai‘i Revised Statutes

Applicant:

Ka‘ala Farm, Inc
PO Box 630
Wai‘anae HI 96792

Accepting Authority:

Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, HI 96707

Prepared By:

Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawai‘i 96813

October 2025

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- A Responses to Early Consultation and Handout
- B Archaeological Work at the Cultural Learning Center at Ka‘ala & Two Adjacent Small Parcels

Acronyms

BWS	Board of Water Supply
CWRM	Commission on Water Resource Management
DHHL	Department of Hawaiian Home Lands
DLNR	Division of Labor and Natural Resources
DOFAW	Department of Forestry and Wildlife
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
HRS	Hawai‘i Revised Statutes
KFI	Ka‘ala Farm Inc.
MGD	Million Gallons per Day
TMK	Tax Map Key

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Project Information Summary

Project Name	Cultural Learning Center and Community Farm at Ka'ala
Applicant	Ka'ala Farm Inc. PO Box 630 Wai'anae, HI 96792 Contact: Eric Enos
Accepting Authority	Department of Hawaiian Home Lands 91-5420 Kapolei Parkway Kapolei, HI 96707
Consultant	Townscape, Inc. 900 Fort Street Mall, Suite 1160 Honolulu, HI 96813 Contact: Sherri Hiraoka Phone: (808) 550-3892 E-mail: sherri@townscapeinc.com
HRS, Chapter 343 Trigger	Use of State lands and funds
Project Location	85-1753 Wai'anae Valley Road Wai'anae, HI 96792
Tax Map Keys (TMK), Parcel Sizes, and Recorded Fee Owner	8-5-005:007 (7.5 acres) Ka'ala Farm Inc. 8-5-005:036 (97.535 acres) Department of Hawaiian Home Lands
State Land Use District	Agriculture
Development Plan	Wai'anae Sustainable Communities Plan
County Zoning	AG-2, General Agricultural District
DHHL Land Use Designation	Special District

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CHAPTER 1 Introduction

This section introduces Ka'ala Farm Inc., the history of their actions at Ka'ala Farm, and the importance of their role in the moku of Wai'anae.

1.1 Overview and Background

Ka'ala Farm Inc. (KFI) is a non-profit organization that provides cultural and environmental education programs for school children, families, and interested groups. KFI hosts its programs at Ka'ala Farm, located in upper Wai'anae Valley.

The mission of KFI is to:

“Reclaim and preserve the living culture of the Po'e Kahiko (people of old) in order to strengthen the kinship relationships between the 'āina (land, that which nourishes) and all forms of life necessary to sustain the balance of life on these venerable lands.”

KFI takes a multi-faceted approach to achieve its mission, simultaneously pursuing environmental education, ecosystem restoration, community engagement, and sustainable agriculture at Ka'ala Farm. The “farm” is a restoration of an ancient agricultural complex and Cultural Learning Center, serving as a kīpuka, or refuge, for Hawaiian culture and traditions.



Hale at Ka'ala Farm.

1.1.1 KFI Beginnings

The origin of KFI and their work at Ka'ala Farm extend back to the early 1970s, when a group of young Hawaiians stumbled across rock terraces while hiking in the uplands of Wai'anae Valley. During a period when Hawaiian traditions were facing suppression and the threat of extinction, the group did not recognize the terraces to be ancient lo'i kalo. However, through consultations with kūpuna, the group painstakingly restored the ancient agricultural complex at what is now known as Ka'ala Farm.



Two stones at Ka'ala Farm represent following the footsteps of those who walked before.

Fresh water, diverted through old plantation irrigation ditches, was once again brought down to the lo'i terraces, breathing vitality back into the ecosystem and community. Planting kalo was like putting meat back on the “bones” of the stone terraces. Community members in Wai'anae could now steward the same lands their ancestors did and reconnect with their history. Over the next decades, Ka'ala Farm became a stable, enduring anchor for the people of Wai'anae, providing opportunities to design and facilitate programs that meet changing community needs.

1.1.2 KFI Programs

Ka'ala Farm provides a space for Native Hawaiians and other groups to come together and discuss common challenges. Building paths forward by focusing on the collective purpose of mālama 'āina, honoring those who came before us, promoting healing through connection with the land, and interacting among people of different backgrounds and generations. It has evolved into a living classroom, offering programs and workshops that emphasize the importance of mālama 'āina and kuleana. These principles guide the farm's operations and outreach, ensuring that the legacy of Native Hawaiian traditions - and the values they embody - remain alive and vibrant.



'Ohana in the lo'i during a community workday.

Ka'ala Farm offers a wide range of programs that are designed for specific portions of the Wai'anae community, such as Department of Hawaiian Homestead beneficiaries, school groups, at-risk youth, and the broader community in general. There are monthly workdays for community members and families, internship opportunities and project-based learning experiences for students, and customizable programs for visiting groups. Each year, more than 3,000 'ōpio, mākua, kūpuna, and 'ohana learn the importance of aloha 'āina at Ka'ala Farm.

KFI aims to educate and empower the next generation of resource managers and cultural practitioners through its programs. Student interns have designed and organized community clean-up efforts. One such event removed debris and waste from the portion of Wai'anae Valley Road that leads up to Ka'ala Farm. The students filled six 40-foot dumpsters, including three hundred tires, fifteen tons of trash and six tons of metal.



Students clean up trash along Wai'anae Valley Road.

KFI has set a goal to serve a minimum of 3,000 visitors each year. During 2023 and 2024, this goal was exceeded, with the number of annual program participants averaging 4,869 visitors.

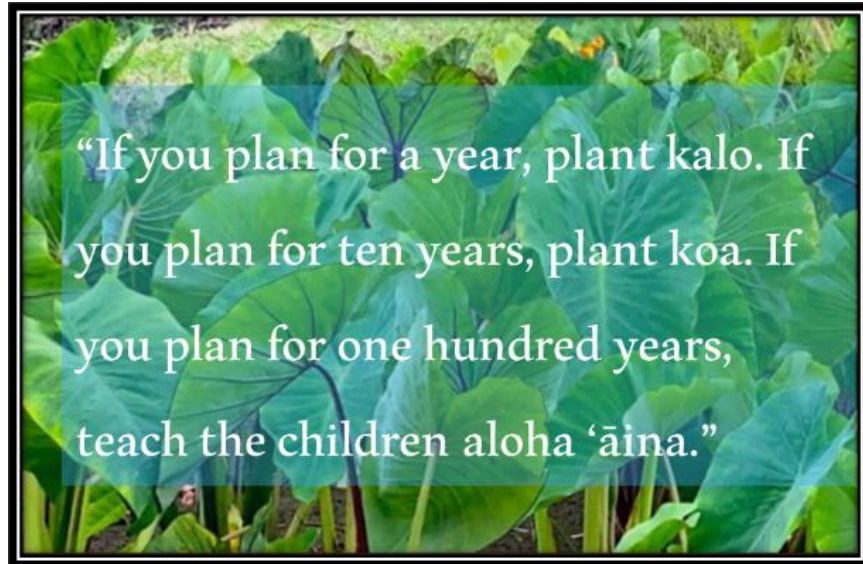
Ka‘ala Farm continues to assess community needs and tailor programs to provide the most benefit. For example, during the COVID pandemic, the farm started a weekly drop-box distribution of food and culturally rich resources grown on the farm. Groups are also able to customize their visits through the Ho‘omohala Program. A full listing of KFI’s programs may be found in Table 1.

Table 1 Programs offered at Ka‘ala Farm

Program	Participants	Description
Lā Kōkua Ka‘ala	Students	Monthly work days
Pua Kaiāulu	High school students	Summer program for ‘āina-based problem solving
DOE Alternative Learning	Students	Place-based project learning experiences
Ho‘ola Kākou	Visiting groups	Visitors learn the history of Ka‘ala Farm and its significant impact to the Hawaiian cultural movement
Ho‘okahua	Visiting groups	Participants learn the history of Ka‘ala Farm, its contributions to the Hawaiian cultural movement, and the value of the traditional land-tenure system grounded in Aloha ‘Āina.
Ho‘omohala	Visiting groups	Customized group visits

1.1.3 KFI’s Role in the Moku of Wai‘anae and Beyond

The programs run by KFI provide a crucial bridge for people to connect with their culture and steward their local environment. Beyond Ka‘ala Farm itself, KFI’s programs have extended to managing and protecting the adjacent cultural landscape in the area known as Wai‘anae Valley Ranch, recognized as one of the most intact and culturally significant landscapes on O‘ahu. Not only does KFI manage the 1,122-acre Wai‘anae Valley Ranch in partnership with Ho‘omau ke Ola, a substance abuse treatment organization, through a long-term lease from the State, it continues to partner with neighboring landowners, government agencies, public utilities, community organizations, schools, and individuals to mālama cultural sites, provide locally-grown food, pass down cultural practices, restore forests, protect water resources, and manage wildfire risks in the upper valley.



KFI also partners with key stakeholders to advance regional issues, convening groups to plan for land and resources. Grounded in the physical setting of Ka'ala Farm, KFI represents the community in on-going discussions about water, land use planning, responsibilities to the natural resources and culture. As climate change and urbanization threaten the entire moku of Wai'anae, the efforts at Ka'ala farm serve as a model for sustainability. KFI's mission reflects a broader movement in Hawai'i to reclaim and celebrate Native Hawaiian culture and tradition.

1.2 Purpose of this Environmental Assessment

Since July 1, 2008, KFI has held a gratis license from the Department of Hawaiian Homelands (DHHL) for community and cultural land uses on the 97-acre DHHL parcel in upper Wai'anae Valley (TMK: 8-5-005:036). KFI is now requesting the conversion of this license to a General Lease, which will provide long-term access and continuity for its programs, and allow KFI to seek grants and other means to finance planned improvements. This action is a triggers Hawai'i Revised Statutes (HRS) Chapter 343 environmental review due to the use of state lands.

This Environmental Assessment (EA) will describe proposed actions, disclose potential environmental impacts resulting from those actions on the existing environment, and identify measures to mitigate those impacts. Additionally, this EA will describe the relationship of the Proposed Actions to existing planning efforts, the required permits and approvals, and the anticipated determination of significance.

1.3 Agencies and Organizations Contacted

County, State, and federal government agencies; elected officials; community organizations; and adjacent landowners were given the opportunity to provide comments during the early consultation period. Those contacted include:

- Federal
 - Pacific Islands Fish and Wildlife Office
 - Navy Region Hawai'i
- State
 - Department of Land and Natural Resources
 - Department of Agriculture
 - Hawai'i State Department of Health
 - Office of Hawaiian Affairs
 - Water Resources Research Center
 - Office of Planning and Sustainable Development
 - Department of Hawaiian Home Lands
- City and County of Honolulu
 - Board of Water Supply
 - Office of Climate Change, Sustainability, & Resilience
 - Department of Emergency Management
 - Department of Land Management
 - Department of Planning and Permitting
 - Department of Environmental Services
 - Mayor's Office of Culture and the Arts
 - Honolulu Police Department
 - Honolulu Fire Department
- Elected Officials
 - Wai'anae Coast Neighborhood Board No. 24
 - Hawai'i State House of Representatives
 - Hawai'i State Senate
 - Honolulu City Council
- Community Organizations
 - Ho'omau Ke Ola
 - Wai'anae Valley Homestead Community Association
 - Wai'anae Mountains Watershed Partnership
- Adjacent Properties
 - Camp Wai'anae

For letters and comments received, please refer to **Appendix A**.

CHAPTER 2 Existing Land Uses and Proposed Actions

This chapter describes the physical environment of Ka'ala Farm and details the Proposed Actions of this EA.

2.1 Land Ownership

2.1.1 Project Parcels

Ka'ala Farm is located in upper Wai'anae Valley, near the mauka end of Wai'anae Valley Road, ahupua'a of Wai'anae Kai, moku of Wai'anae on the island of O'ahu. Ka'ala Farm consists of two parcels, a 7.5-acre parcel (TMK 8-5-005:007) owned in fee-simple by KFI, and the adjoining 97-acre parcel (TMK 8-5-005:036) owned by DHHL (see Figure 1).

2.1.2 Neighboring Landowners

Lands adjacent to Ka'ala Farm include the 1,122-acre parcel of the former Wai'anae Valley Ranch. The former ranch parcel is currently leased to KFI and to the non-profit entity Ho'omau Ke Ola by the State to pursue restoration, wildfire mitigation, and community healing activities. The 2,049-acre Wai'anae Kai Forest Reserve borders Ka'ala Farm to the north, managed by the State Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) and the Board of Water Supply (BWS) owns land adjacent to the KFI-owned parcel 7. Additionally, there are several small privately-owned parcels in the vicinity and the U.S. Navy-controlled Lualualei Valley is just over the nearby Kaua'ōpu'u Ridge (see Figure 1).

2.2 KFI Parcel (TMK 8-5-005:007)

KFI owns the 7.5-acre parcel 7, which is bounded by the main driveway and Honua Stream. Existing land uses on this parcel include the Native Plant Kīpuka, a gate, driveway, and parking area.

2.2.1 Native Plant Kīpuka

In 2006, KFI began transforming a portion of parcel 7 from a patchwork of non-native plants into a native dry forest in its Native Plant Kīpuka (see Figure 1). Native forests capture and retain more rainwater than alien-dominated ones, improving ground water recharge. This is one of the few accessible sites on O'ahu where people may see and volunteer to maintain dryland forest.

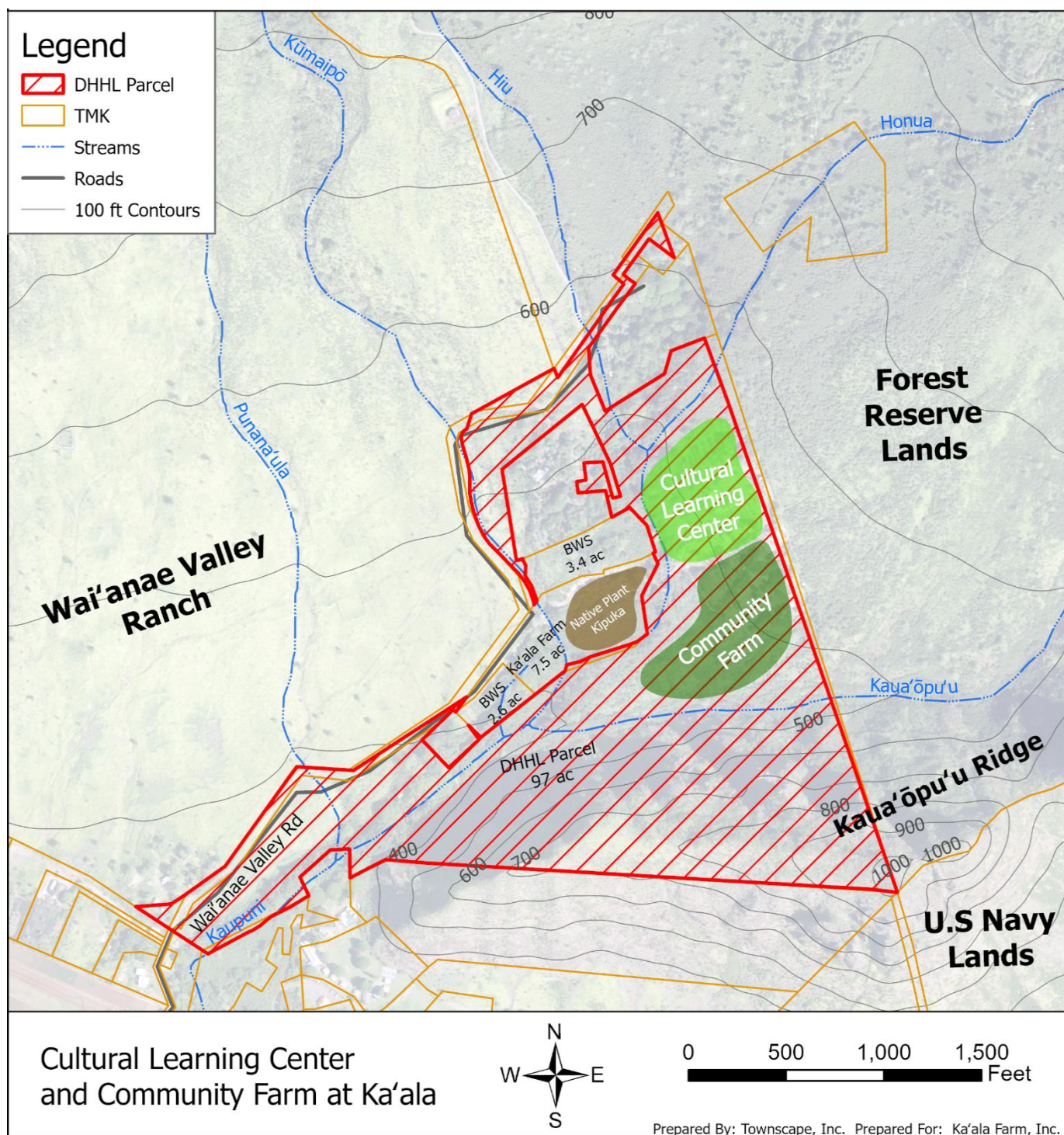


Figure 1 Location Map and Program Areas

2.2.2 Gate, Driveway, and Parking

The entrance to Ka'ala Farm is marked by a gate on the KFI-owned parcel. The main driveway to Ka'ala Farm splits off from Wai'anae Valley Road and traverses parcel 7 before crossing Honua Stream and heading mauka to the Cultural Learning Center and Community Farm. A large gravel parking area suitable for buses is located along the main driveway before it crosses Honua Stream.

2.2.3 Proposed Facilities and Land Uses

No new facilities or land uses are proposed for Parcel 7.

2.3 DHHL Parcel (TMK 8-5-005:036)

KFI has held a gratis license for the 97-acre DHHL parcel since 2008 and is seeking conversion of this license into a General Lease, which will provide long-term access and continuity for its programs, and allow KFI to seek grants and other means to finance planned improvements. Active programming on the DHHL parcel is primarily located in two areas near the eastern boundary, the Cultural Learning Center in the northern portion and the Community Farm south of that (see Figure 1).

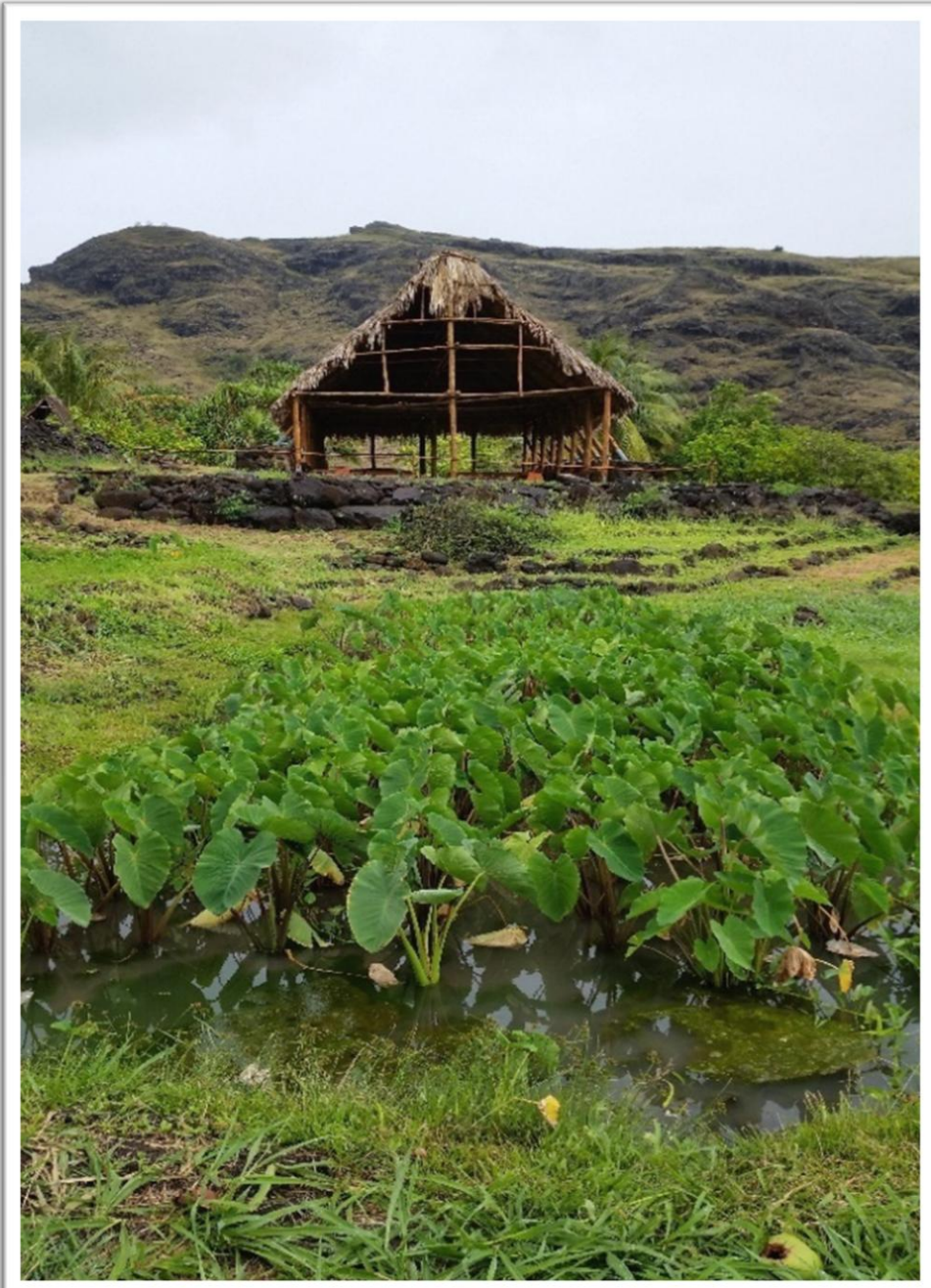
The Cultural Learning Center is a window to the past, preserving the history of upper Wai'anae Valley and maintaining Native Hawaiian cultural practices. The Community Farm combines traditional Hawaiian agriculture with modern permaculture technologies, producing culturally significant food for the community. This section of the draft EA lists the current land uses and facilities at the Cultural Learning Center and Community Farm and describes future land uses and facilities envisioned by KFI. The remaining lands are undeveloped but are maintained for water flow and quality and for wildfire mitigation.

2.3.1 Cultural Learning Center

Visitors come to the Cultural Learning Center for firsthand experiences that teach the importance of aloha 'āina. The Learning Center enables KFI to share environmental and cultural values by allowing visitors to step in and work and utilize the same type of lo'i, dryland fields, and traditional Native Hawaiian hale their ancestors did hundreds of years ago.

Lo'i Kalo

Wetland kalo farming has been the foundation of Ka'ala Farm's activities for the past four decades. Existing terraces, built hundreds of years ago, have been restored to provide opportunities for volunteers to grow kalo, one of the most culturally important Hawaiian staple crops. KFI maintains approximately one acre of lo'i at the Cultural Learning Center.



Kalo and Hale Na'auao at Ka'ala Farm.

Dryland Fields

The fields at the Cultural Learning Center are approximately one-half acre in size and include 'ulu, dryland kalo, and many other dryland-adapted and culturally significant plants used for food, cultural practices, and healing. Existing dryland fields at the Cultural Learning Center are maintained by hand weeding and occasional watering by sprinkler.

Hale Na'auao

The hale is the central teaching and gathering place at the Cultural Learning Center and is located on a pre-contact house site adjacent to the lo'i. The original hale was lost to a fire in 2012 but was rebuilt in 2013 on a 25 x 50 ft stone foundation using mangrove (*Rhizophora mangle*) logs cured in salt water. Native grass and loulou palm fronds were used for the thatched roofing. High school students and volunteers from around the state contributed to rebuilding the structure, guided by KFI staff.



The Hale Na'auao that burned in a wildfire in 2012.

Hale Hau

Hale Hau is an approximately 625 square foot traditional hale that serves as a secondary gathering and teaching space to either supplement Hale Na'auao or provide another meeting venue for smaller groups.

Hale Kuke

Hale Kuke is an open-air multipurpose facility with a gravel floor. It is located near the upper boundary of the farm, between the Cultural Learning Center and the Community Farm, making it a convenient place for staff meetings, discussing operational matters, resting, and sharing meals.

Caretaker's Residence

The Caretaker's Residence is a 600 square foot wooden house near the Hale Na'auao. This structure will be renovated and will house a staff person to provide on-site security and maintenance.

Hale 'Au'au

Hale 'Au'au is a 550 square foot shower/wash area located opposite the Hale Kuke. It is intended to serve staff, volunteers, and program participants and has two areas that can be used separately for families and children. The wash area currently uses stream water for general rinsing, but a water catchment and purification system is planned for increased water quality.

Infrastructure

Infrastructure at Ka'ala Farm consists of vehicular access, parking areas, electrical power, telephone service, and agricultural water. Vehicles access the farm via a one-lane driveway that splits from Wai'anae Valley Road near the entrance to the KFI-owned parcel 7 and runs mauka alongside Honua Stream. A large gravel parking area is located just before the driveway crosses Honua Stream. This parking area can hold two school buses and approximately 20 additional vehicles.

Electrical power and telephone service are provided by pole-mounted lines that follow Wai'anae Valley Road to its terminus in the upper part of the valley.

Agricultural water is obtained from Honua Stream through Diversion #535, registered with the State Commission on Water Resource Management. The intake uses an old plantation diversion with a flow rate of 0.187 cubic feet per second. The diverted water is piped from the intake to the lo'i at Ka'ala Farm and back into Honua Stream.

Daily wastewater generation is serviced on-site. There is one structure housing three composting toilets located near the Hale Kuke. Each stall is served by a 55-gallon drum.

Their contents are regularly emptied, treated, and buried. An additional composting toilet is located mauka of the dryland fields for occasional use by students working in the fields or lo'i. Portable toilets are brought in to service large events where greater numbers of visitors are anticipated.

2.3.2 Community Farm

The Community Farm is a project between DHHL and KFI to demonstrate traditional resource management and sustainable agriculture by mixing ancient and modern methods. Dryland kalo, banana, and ti are cultivated by families who either have a DHHL homestead lease or are awaiting an agricultural lot. KFI provides training on cultivation and processing of crops; integrating sustainable agricultural practices; and Native Hawaiian knowledge to produce healthy food for the community.

Dryland Fields and Edible Forest

Like the Cultural Learning Center, the Community Farm has dryland fields that grow a variety of culturally significant plants such as dryland kalo, 'ulu, banana, kukui nut, and sweet potato. Whereas the dryland fields at the Cultural Learning Center primarily contain Polynesian crops cultivated by early Hawaiians, the dryland fields at the Community Farm contain these plants and more recent introductions such as fruit trees like lychee and mango. These fruit trees form an "edible forest" that showcase the modern permaculture technique of "food forestry." Together, the dryland fields and edible forest at the Community Farm total approximately one acre.

Small Animals Enclosure

A dog-proof fence confines an approximately one-acre area that currently holds sheep that are used for rotational pasturing, managing invasive plants and weeds on the farm. In the future, other small animals such as ducks, geese, chickens, and rabbits may be held to help cycle nutrients by creating compost and natural fertilizer that can be used on the Dryland Fields and Edible Forest.

Storage, Watchtower, and Caretaker's Office

Two recycled shipping containers are located next to the driveway at the Community Farm. These containers act as a central storage space for materials and tools. A watch tower and a second caretaker residence are being constructed atop the storage units to allow for greater visibility and oversight of the property.

Imu

An imu is a traditional Hawaiian cooking pit or inground oven. The process of cooking with an imu involves digging a pit in the ground, then heating it with hot stones. The imu at Ka'ala Farm is in the mauka section of the Community Farm, adjacent to the Edible Forest. The imu cooking technique showcases the Hawaiian cultural approach to communal cooking and celebration, emphasizing a connection with the land and traditional methods of food preparation.

Gathering Space and Field Kitchen

The Gathering Space and Field Kitchen are in one roofed, unwallled structure that is approximately 1,500 square feet in size and is located near the upper boundary of the Community Farm. Staff utilize sinks, bottled water, and propane gas burners to teach La 'Ohana program participants how to cook flatbreads and other dishes using food grown on the property. The Gathering Space has a shower and a flush toilet that utilizes a methane digester mechanism. Overall, the Gathering Space and Field Kitchen provides a physical space for education, communal food sharing, and intergenerational learning.

Parking (Community Farm)

A gravel parking area surrounds the existing storage containers and watch tower. This area generally serves the Community Farm and can hold approximately 20 vehicles.

2.3.3 Proposed Facilities and Land Uses

KFI plans to maintain its current land uses and facilities while implementing improvements as funding allows. A conceptual plan shows the existing and proposed facilities and land uses at Ka'ala Farm. Existing facilities and land uses are labeled with black text, while the proposed facilities and land uses are labeled in red text (see Figure 2).

Below is a general overview of the proposed future facilities and land uses.

Aquaponics System (Community Farm)

Aquaponics is the practice of raising fish and growing plants in a symbiotic system. The model of aquaponics can be visualized as a self-contained "mini-ahupua'a" with fish ponds representing coastal loko i'a (fishponds) and grow beds representing upland lo'i kalo and dryland fields. The aquaponics system will be in the mauka section of the Community Farm. Approximately half an acre of fishponds will feed drip irrigation systems in the dryland fields and edible forest. Bacteria in the fishponds will convert fish waste to nutrient-rich fertilizer for the plants below.

Water will enter the system from the existing Honua Stream Diversion (Diversion No. 535). Existing water pipes will deliver the water from Honua Stream to the aquaponics system, but the drip irrigation system and accessory aquaponics equipment will require new pipes.

Lo'i Kalo Expansion (Cultural Learning Center)

KFI proposes to expand cultivation of wetland taro at the Cultural Learning Center by adding approximately two acres of lo'i kalo makai of the existing terraces. The expansion of these areas will allow for more culturally significant food to be grown and consumed by the community. The lo'i kalo support KFI's educational programs and provide environmental benefits by allowing for increased ground water percolation and for suspended sediment to settle out before water is returned to the stream.

Dryland Field Expansion (Community Farm)

Approximately two acres of dryland fields are proposed makai of the existing Community Farm's dryland fields. These fields will be watered by drip irrigation originating at the aquaponics system and fishponds which are supplied by the Honua Stream Diversion (Diversion No. 535). The dryland fields support the educational programs and community-based agriculture facilitated by KFI.

Barn (Community Farm)

A small barn is proposed to shelter small animals such as goats, ducks, geese, chickens, and rabbits, supporting animal husbandry operations at the Community Farm. It will be an approximately 600 square foot wood frame structure located within the Small Animals Enclosure.

Field Shelter (Community Farm)

A 400 square foot open-air pavilion is proposed to provide a shaded rest area for families working on the Community Farm and for those visiting the Edible Forest. It may be constructed from natural materials similar to the Hale Na'auao.

Bunkhouse (Community Farm)

A bunkhouse is proposed as a 1,250 square foot, cabin-style wood frame structure with bunk beds to house up to twenty people overnight. Groups of visitors helping with work projects or needing a retreat space will be able to stay in the bunkhouse.



Figure 2 Ka‘ala Farm Conceptual Plan

CHAPTER 3 Environmental Setting, Anticipated Impacts, and Mitigation Measures

This chapter describes the natural, cultural, archaeological, and historical setting of the project area and lists the potential impacts and mitigation measures for the Proposed Actions.

3.1 Natural Environment

3.1.1 Regional Setting

Moku of Wai'anae

The Project Area is located within the moku of Wai'anae, one of the six moku of the island of O'ahu. The Wai'anae moku consists of nine ahupua'a bounded by the Wai'anae Mountain Range and the Pacific Ocean. The crest of the Wai'anae Mountain Range is Mount Ka'ala (elevation, 4,025 feet), which overlooks the project area (see Figure 3).

Wai'anae Kai Ahupua'a

Ka'ala Farm is located in the Wai'anae Kai ahupua'a. Wai'anae Kai is bounded to the east by the Lualualei ahupua'a, to the south by the waters of Pōka'i Bay, to the west by Mākaha ahupua'a, and to the north by Mount Ka'ala and the ridgeline of the Wai'anae Mountains (see Figure 3). Historically, the moku of Wai'anae included the ahupua'a of Wai'anae Uka, which is connected to Wai'anae Kai and extends from the ridgeline of the Wai'anae Mountains across what is now known as Central O'ahu, all the way to the ridgeline of the Ko'olau Mountains.

Anticipated Impacts and Mitigation Measures

KFI serves an important cultural and environmental role for the region, connecting stakeholders and community organizations with the land, natural and cultural resources, and traditional practices. KFI stewards the largest intact cultural landscape on the island in upper Wai'anae Valley and strengthens connections with communities across O'ahu and throughout the State. Thus, KFI helps to educate the community on Wai'anae's significant place in the region resulting in no anticipated negative impacts to the region.

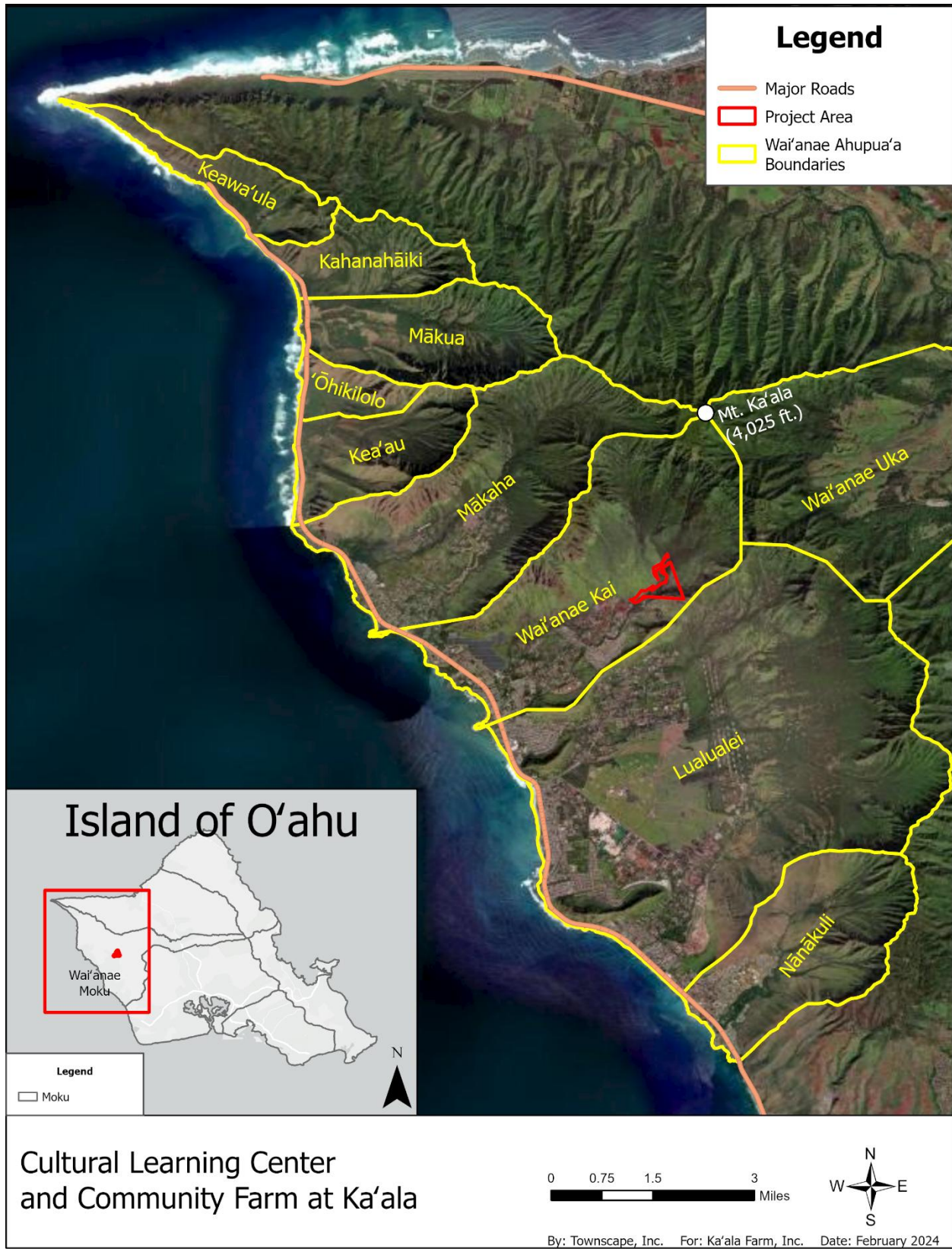


Figure 3 Regional Map

3.1.2 Climate

The project area is located on the leeward side of O'ahu, which is typically dry and sunny due to the Ko'olau and Wai'anae Mountain ranges that block the northeasterly trade winds, forming a rain shadow. Therefore, the Wai'anae Moku is typically hot and dry in the lower elevations while upper elevations experience cooler and wetter conditions. Yearly rainfall in Wai'anae Valley ranges from twenty inches per year in the makai portions of the valley to nearly eighty inches per year in the mauka portions, nearest Mount Ka'ala. Fog drip is also common above the 2,000-foot elevation. Most of the DHHL parcel receives about 35 to 45 inches of rain per year, which is considered a "Very Dry" moisture zone (see Figure 4). Climate change is generally expected to result in dry areas like Wai'anae getting drier, particularly during the summer dry season.

Anticipated Impacts and Mitigation Measures

KFI aims to pursue actions and mitigation measures that are in line with the local climate. The hot and dry climate imposes some constraints on the agricultural activities that KFI can pursue but the selected agricultural crops and traditional Hawaiian agricultural practices being taught were adapted to local conditions hundreds of years ago. Plants selected for the dryland fields thrive in the area's climate and require only occasional irrigation. Wetland taro farming activities utilize natural streamflow that is fed by the abundant rainfall in the mauka forests and allow for some percolation to the ground water aquifers as the fresh water flows through the parcel.

Growth in visitation numbers to the farm may impact the climate by increasing greenhouse gas emissions from traffic and energy consumption. Additionally, more visitation and expanded farm acreage will require additional water resources. KFI will pursue the following measures to mitigate these anticipated impacts:

Sustainable Transportation

- Promote low-carbon transportation options to and from the farm, such as carpooling, shuttle services, and public transportation.
- Offset carbon emissions from transportation through tree planting and ecosystem restoration.

Energy Efficiency and Renewable Energy

- Power visitor facilities with renewable energy to reduce fossil fuel use.
- Use energy-efficient appliances and lighting, and design buildings for natural ventilation and lighting to reduce energy consumption.

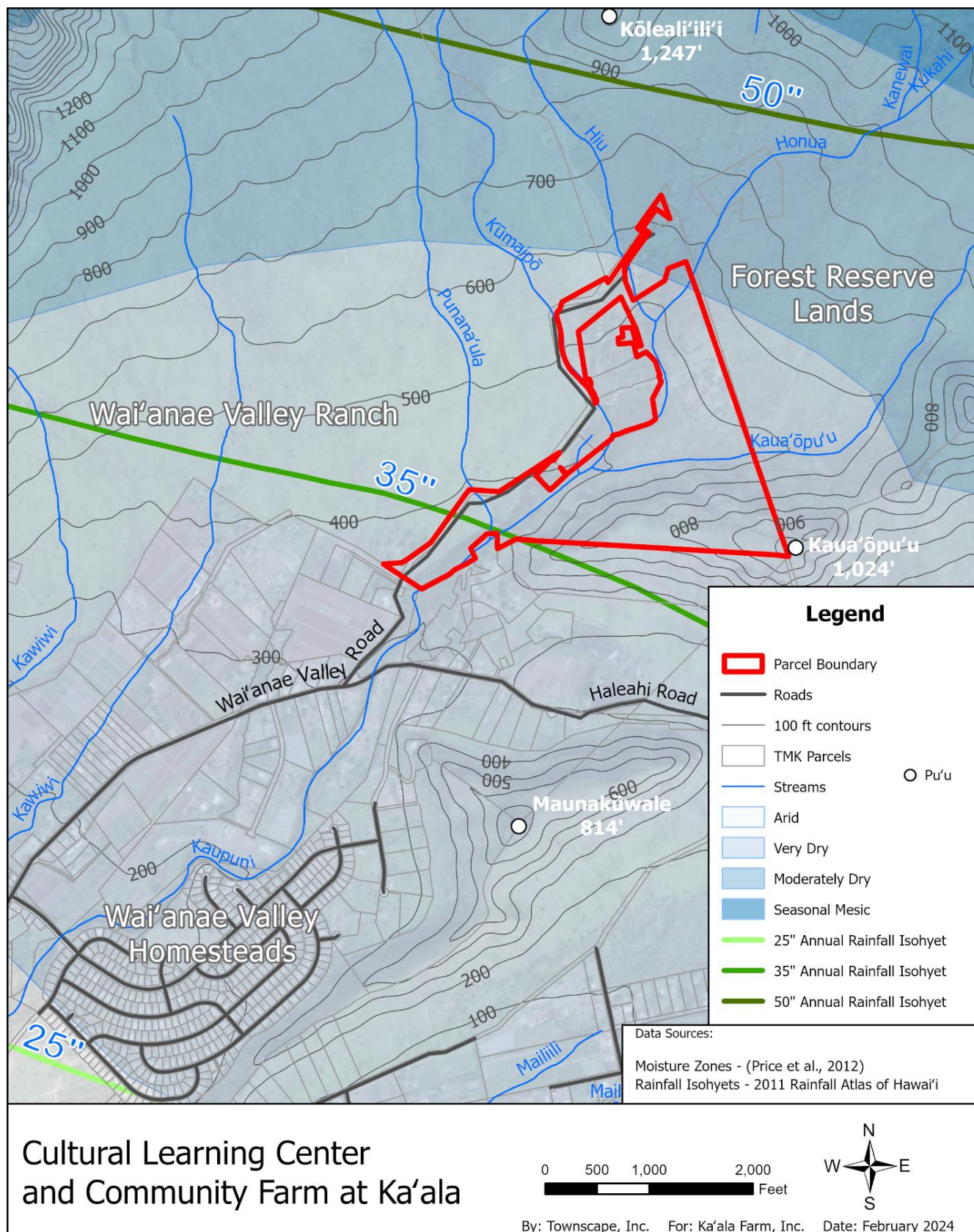


Figure 4 Moisture Zones & Rainfall

Water Conservation and Management

- Use climate-appropriate native plants to minimize irrigation water demands and recharge groundwater.
- Educate visitors on water conservation practices.

Carbon Offsetting and Sequestration

- Implement reforestation to offset the farm's carbon footprint.
- Implement regenerative agricultural practices that enhance carbon sequestration in the soil.
- Offer carbon offset options for visitors, allowing them to contribute to projects that compensate for their visit's carbon footprint.

Community and Stakeholder Engagement

- Collaborate with the local community and government to align the farm's visitor management strategies with broader climate goals.
- Facilitate local and regional resiliency initiatives to share knowledge and practices.

3.1.3 Geology & Soils

The Wai'anae Mountains are the erosional remnants of the Wai'anae shield volcano that formed over three million years ago. Nine valleys within the Moku of Wai'anae were created by several million years of erosion from the forces of sun, wind, and rain. Wai'anae Valley is characterized by steep valley walls transitioning to gently sloping valley floors and the coastal plain. The project area lies beneath Mount Ka'ala, along Wai'anae Ridge and Pu'u Kaua'ōpu'u. Pu'u Maunakūwale lies south of Ka'ala Farm along the southern edge of the valley (see Figure 5).

The Proposed Actions primarily take place north of Kaua'ōpu'u Ridge on the "Older Alluvium" geological unit. Alluvium is typically consolidated sand and gravel deposited by rivers during the Pleistocene and Pliocene epochs which filled a valley with thick terraced deposits (USGS, 2007). The slopes of Kaua'ōpu'u on the south portion of the farm are part of the "Wai'anae Volcanics" geological unit, steeper and rocky terrain left behind by the approximately 3-million-year-old lava flows of the Wai'anae Shield Volcano. (see Figure 5). The topography of upper Wai'anae Valley is rugged and mountainous. There are steep slopes on the southern portion of the project area on the Kaua'ōpu'u ridgeline. The northern portion of the project area has gentler slopes, conducive to the lo'i terraces and Community Farm uses.

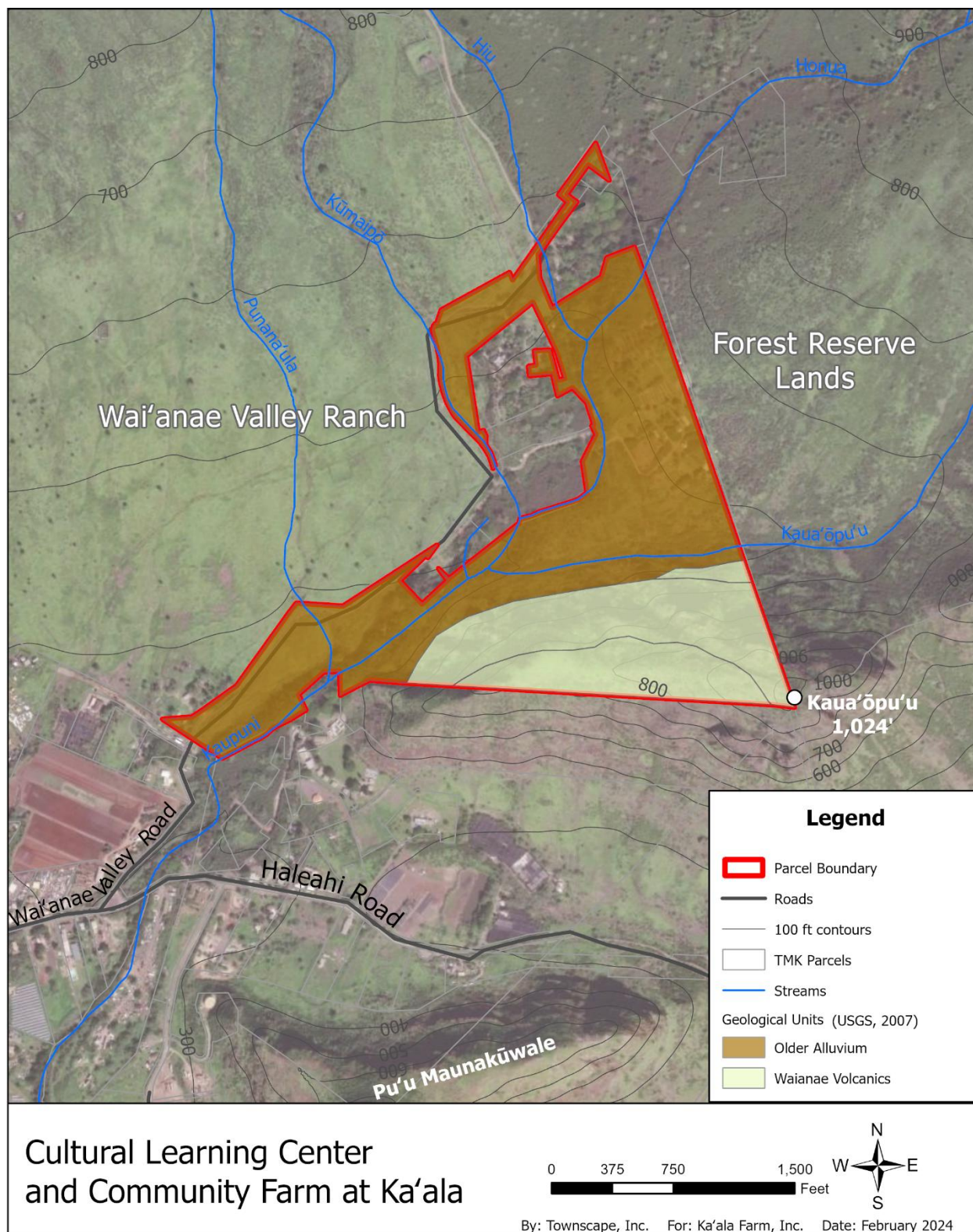


Figure 5 Geology

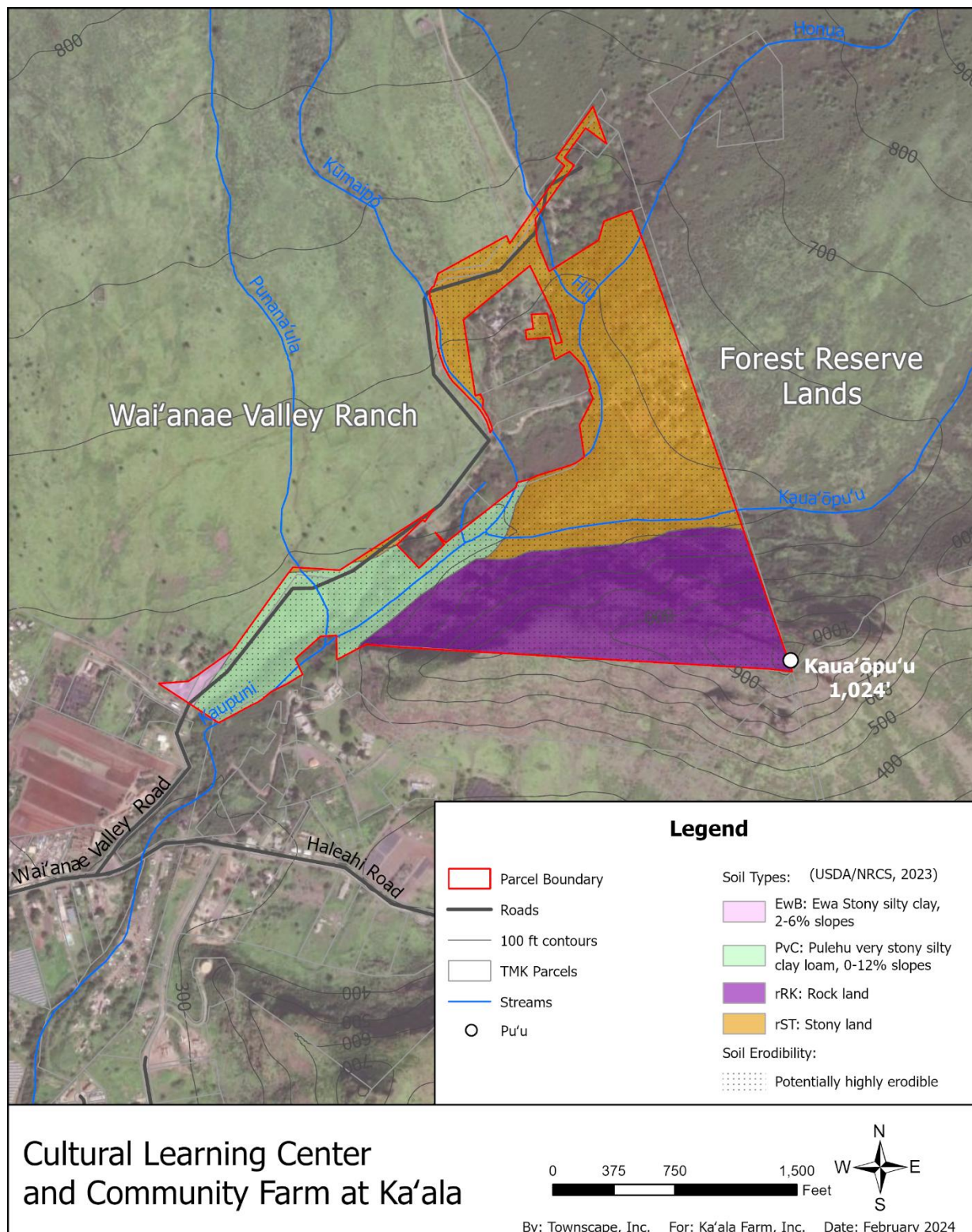


Figure 6 Soils

Soil series within the Ka'ala Farm parcels are dominated by stony land (rST) and rock land (rRK) along the valley walls (see Figure 6). These soil types are usually found in steep, mountainous areas and are well-drained. Organic matter accumulates in areas with gentler slopes and creates agricultural soil. There is a pocket of Pulehu very stony clay loam (PvC) in the makai portion of the property along Kaupuni Stream (see Figure 6). These soils are generally unsuitable for conventional cultivation due to their shallow, stony nature. However, the long history of 'uala (sweet potato) and kalo (taro) cultivation in the valley indicates that these soils can be suitable for traditional Hawaiian methods of cultivation. A small section of the project area west of Wai'anae Valley Road is the 'Ewa Stony Silty Clay soil type. All the soils are considered potentially highly erodible, with the exception of the small section of 'Ewa Stony Silty Clay.

Anticipated Impacts and Mitigation Measures

In the short-term, KFI's environmental and cultural education programs, land uses, and facilities will contribute positively to soil health as landscape management and farming will improve soil productivity. In the long-term an increase in visitors to the farm could have impacts on the local geology by increasing the potential for disturbing geologically sensitive areas like Kaua'ōpu'u Ridge. Impacts to soil may include compaction and erosion from increased foot traffic. KFI will pursue the following measures to mitigate these potential impacts:

Soil Health Improvement

- Practice regenerative agriculture techniques, such as crop rotation, cover cropping, and minimal tillage, to maintain and enhance soil health.
- Incorporate organic matter into the soil to improve its structure, fertility, and water retention.

Protection of Geological Features

- Establish protective zones around significant geological features, like Kaua'ōpu'u Ridge, where visitor access is managed to prevent disturbance.

Erosion Control

- Develop a soil and water conservation plan for agricultural areas to identify appropriate best management practices to mitigate soil erosion and runoff.
- Implement terracing in agricultural areas to reduce runoff and soil loss.
- Restore vegetation in areas prone to erosion, using native plants that stabilize the soil with their root systems.

Education and Awareness

- Educate visitors on the importance of soil conservation, the negative impact of soil erosion, and the value of healthy soil.
- Educate visitors on sensitive geological areas and how to interact with them, ensuring they do not inadvertently cause harm.
- Encourage responsible visitor behavior, such as staying on designated paths and respecting protected areas.

3.1.4 Water Resources & Water Supply

There are limited ground water resources throughout the Moku of Wai'anae given the hot and dry climate. The geographic extent of the Wai'anae Aquifer System is consistent with the boundaries of the Wai'anae Kai ahupua'a and Wai'anae Valley (see Figure 7). The Commission on Water Resource Management (CWRM) estimates that the sustainable yield of the Wai'anae Aquifer Sector Area is thirteen million gallons per day (MGD), and that the sustainable yield of the Wai'anae Aquifer System Area that underlies Wai'anae Valley is approximately 3 MGD.

Rainfall and fog drip feed dike aquifers in the upper areas of the valley and once provided water for up to thirty springs in the 1,000 to 2,000-foot elevations. Ancient Hawaiians understood how critical freshwater resources were to their way of life and designed terraced agricultural systems to slow and spread the flow of water. Most of the springs that once fed the ancient terraces have disappeared due to ranching activities, the construction of tunnels and wells, and climate change; however, several springs still feed the tributaries of Kaupuni Stream.

Kaupuni Stream is one of the two largest streams on the Wai'anae coast. The stream flows in a southwesterly direction from its headwaters to Pōka'i Bay over the course of approximately six miles. Kaupuni Stream is fed by Kānewai, Honua, Kalalua, and Hiu streams. The high elevation bog environment at the summit of Mount Ka'ala also makes a minor contribution to surface flow. Although Kaupuni Stream was historically perennial, flowing to the shore at Pōka'i Bay, water diversions for agricultural use have decreased the stream flow, which is now intermittent in the lower portions of the valley. Tunnels were built during the 1920s to support agriculture in the area and in the 1940s to support municipal use.

Kaupuni Stream is listed on the State's Clean Water Act Section 303(d) list of impaired water bodies based on an assessment that recorded trash present in the stream channel and indicated that levels of total nitrogen, nitrate and nitrite, total phosphorous, turbidity, and suspended solids are potentially above water quality standards.

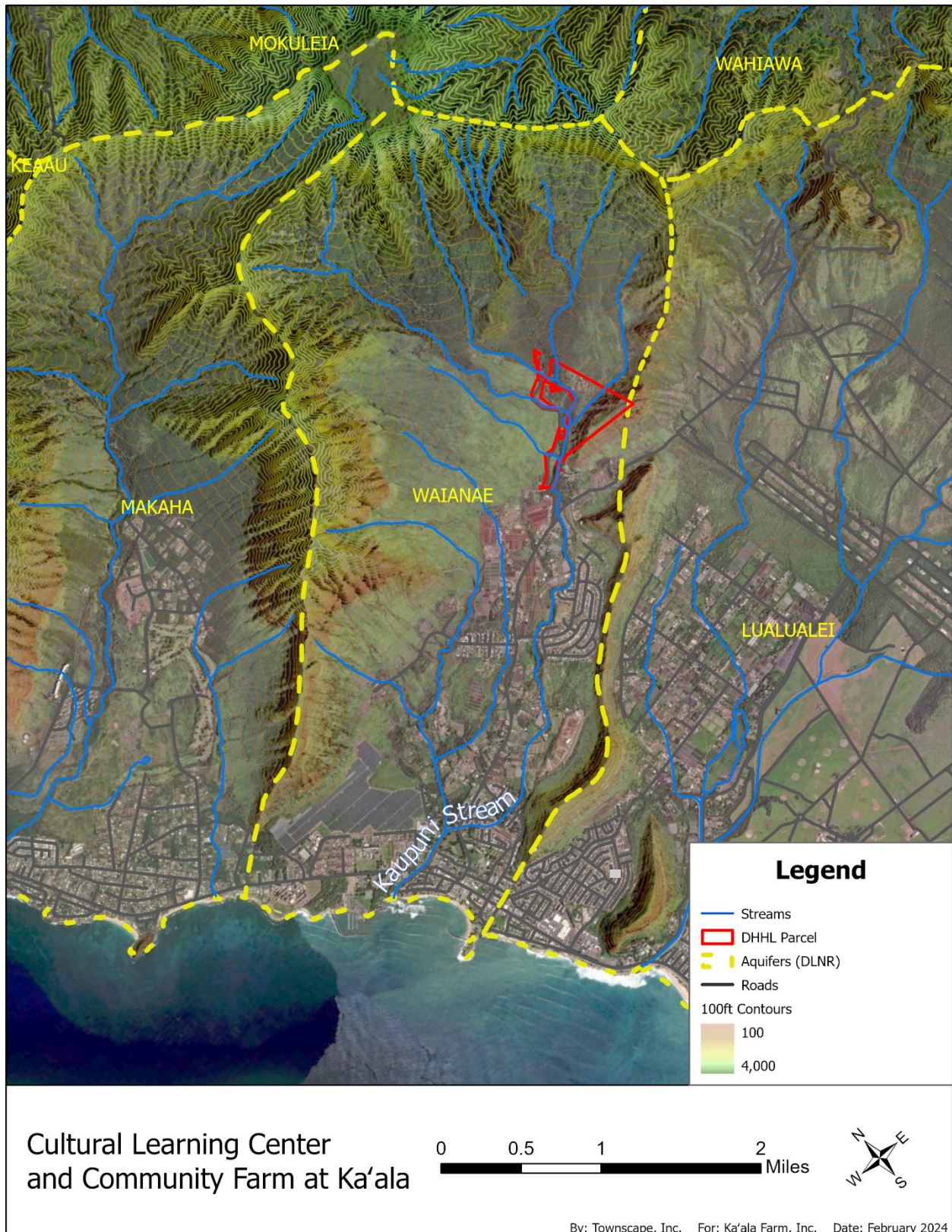


Figure 7 Aquifers and Water Resources

BWS manages water wells, tunnels, and a system of water distribution pipes that supply potable water to the developed areas of Wai'anae Valley. The BWS "service area" extends to the mid-point of the valley and includes the site of the ranch house at the former Wai'anae Valley Ranch. Ka'ala Farm is not connected to the BWS system. It pipes non-potable water to the farm from Diversion Number 535 located on Honua Stream approximately one hundred feet below the juncture of Kānewai and Kukaki Streams and upstream of an old plantation intake. The diversion amount is 0.187 cubic feet per second (0.121 MGD). Water passes through the lo'i at Ka'ala Farm before returning to Honua Stream. Some water is used for occasional sprinkler irrigation of the dryland fields and edible forest and for rinsing off after working in the lo'i and fields.

Anticipated Impacts and Mitigation Measures

KFI's programs and activities showcase the importance of fresh water to visitors and provide a positive impact on local water resources. Over the long-term, an increase in visitors to the farm may impact water resources from increased demand, soil erosion, and sedimentation. Potable water demands may also rise due to more cooking and overnight stays when development is complete. KFI will continue to provide bottled potable water when needed to support volunteers and workers and will purify some of its surface water for potable purposes. KFI will pursue the following measures to mitigate these anticipated impacts:

Water-Saving Technologies and Practices

- Install low-flow water fixtures in visitor facilities.
- Employ smart irrigation systems that minimize agricultural water use, such as drip irrigation.

Rainwater Harvesting and Greywater Recycling

- Implement rainwater harvesting systems to store rainwater for irrigation.

Natural Water Filtration and Conservation Areas

- Create or restore natural wetlands and riparian buffers to filter runoff water naturally, enhance groundwater recharge, and protect aquatic habitats.
- Protect and restore natural vegetation around water bodies to reduce erosion and sedimentation.

Sustainable Visitor Management

- Designate specific areas for visitor activities to minimize trampling and soil compaction near water bodies.
- Implement programs to raise awareness among visitors about water conservation and the importance of protecting water resources.

3.1.5 Land Cover, Flora, & Fauna

Land cover in the project area is predominantly shrub and brush rangeland, with a small section adjacent to the former Wai'anae Valley Ranch considered Mixed Rangeland. At higher elevations to the north of the project site, there is significantly more moisture, and the land cover is Evergreen Forest Land. Surrounding Wai'anae Valley Road is Residential land on the southern section of the project parcel (see Figure 8).

The upper elevations of the valley have an extremely high concentration of threatened or endangered plants. The summit of Mt. Ka'ala has persistent cloud cover which creates a unique bog environment above 4,000'. Most plants there are endemic to Hawai'i or O'ahu. More invasive species occur lower in elevation. The southwest portion of the project area, on the slopes of Kaua'ōpu'u, has a medium density of threatened or endangered plant species. The northeastern slopes of the ridgeline are listed as a critical "Oahu Dry Cliff Unit 3" ecosystem by the U.S. Fish and Wildlife Service (see Figure 9).

More parts of the upper Wai'anae and Lualualei Valleys have been designated as critical habitats for 'elepaio and native plants. These critical habitats are areas that have essential resources for the continued viability of the species. Additionally, wetlands in the adjacent Lualualei Valley are designated as waterbird critical habitats. There is a low density of threatened and endangered species in the Cultural Learning Center and Community Farm areas, while there is a medium density of threatened and endangered species southeast of the Kaua'ōpu'u streambed on the DHHL parcel (see Figure 9).

Anticipated Impacts and Mitigation Efforts

The Proposed Actions are located on lands designated as Shrub and Brush Rangeland and in areas of low threatened/endangered plant density. No actions are proposed on the slopes of Kaua'ōpu'u, where there is a medium density of threatened/endangered plants as well as the O'ahu Dry Cliff Unit 3 Critical Ecosystem. This land has been previously disturbed by feral ungulates and wildfire, thus there are no significant impacts related to land cover, flora, or fauna.

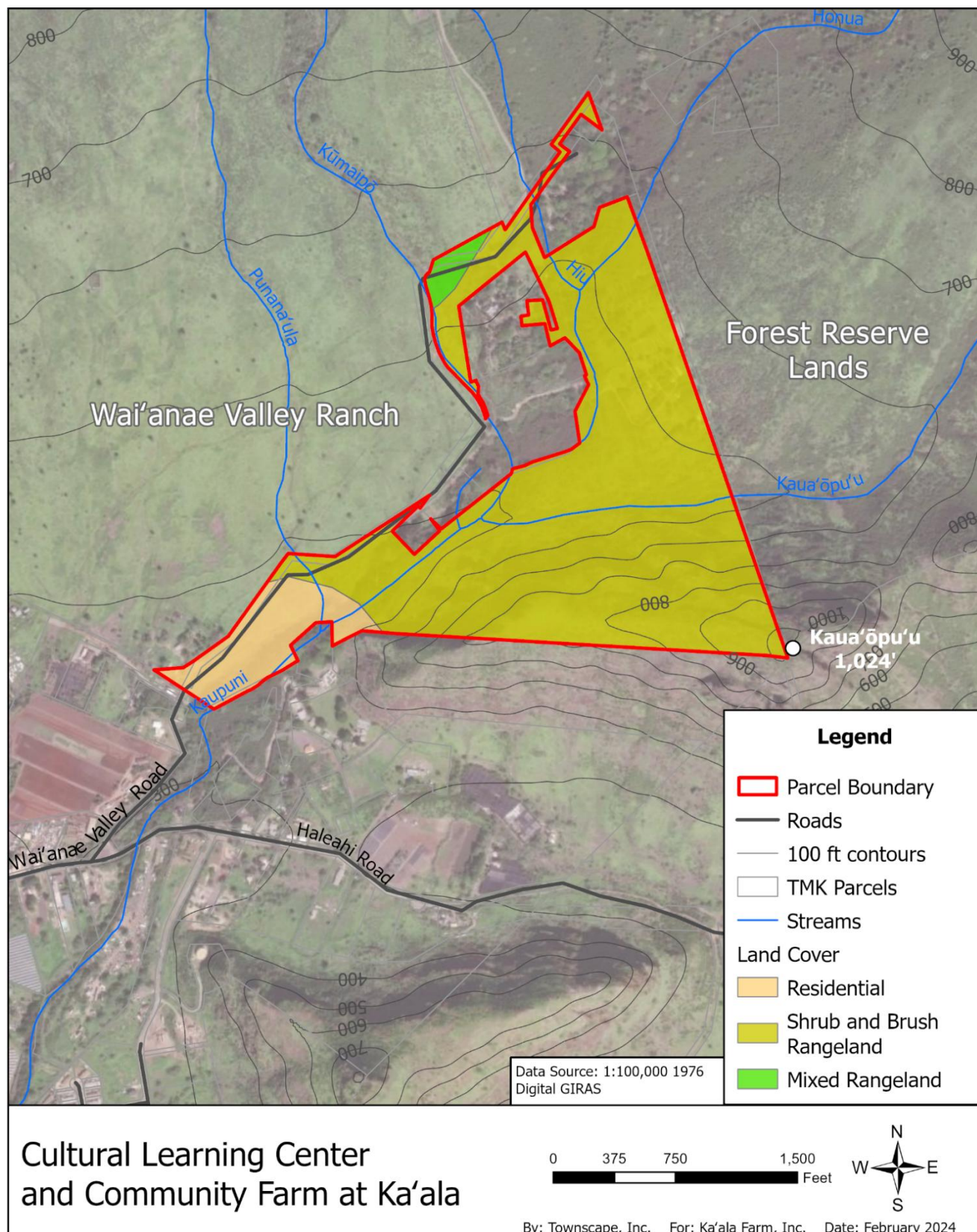


Figure 8 Land Cover

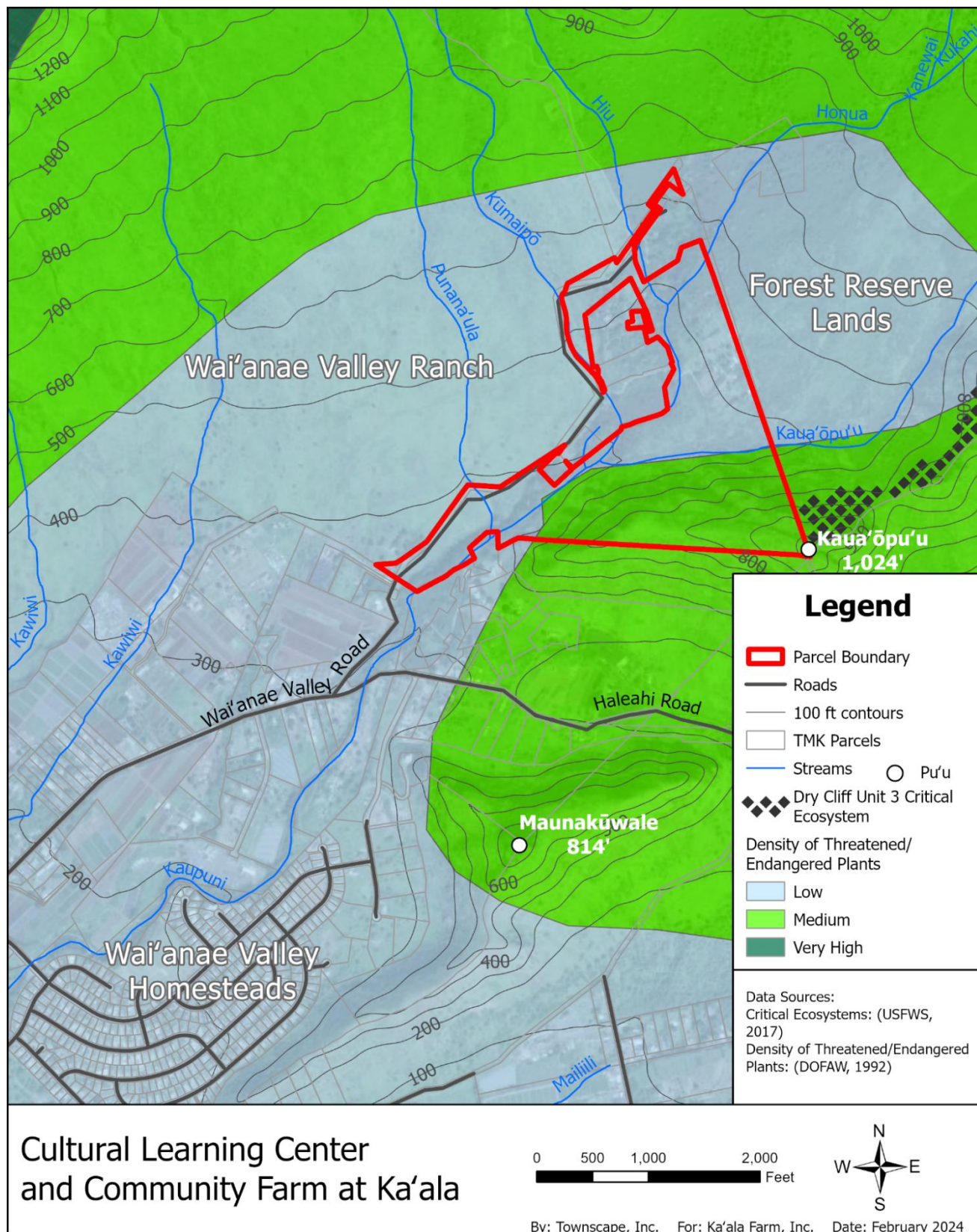


Figure 9 Protected Flora and Fauna

Table 2 O'ahu Dry Cliff Unit 3 Ecosystem Plants

<u>Scientific Name</u>	<u>Hawaiian Name</u>	<u>Common Name</u>
Abutilon sandwicense	ko'olua 'ōma'o	Green-flowered Abutilon
Achyranthes splendens var. rotundata	'ewa hinahina	Round Chaff Flower
Alectryon macrococcus	mahoe	Hawai'i Alectryon
Asplenium dielfalcatum	-	Sickle Island Spleenwort
Asplenium unisorum	-	Singlesorus Island Spleenwort
Bonamia menziesii	-	Hawai'i Lady's Nightcap
Cenchrus agrimonioides	kamanomano	-
Cyanea grimesiana ssp. obatae	haha	Splitleaf Cyanea
Cyrtandra dentata	ha'iwale	Mountain Cyrtandra
Dubautia herbstobatae	na'ena'e	Keau Valley Dubautia
Eragrostis fosbergii	-	Fosberg's Love Grass
Euphorbia herbstii	`akoko	Herbst's Sandmat
Euphorbia kuwaleana	kokomalei	-
Flueggea neowawraea	mehamehame	-
Gouania meyenii	-	Smoothfruit Chewstick
Gouania vitifolia	-	Gray O'ahu Chewstick
Isodendron laurifolium	aupaka	Rockcliff Isodendron
Isodendron pyrifolium	wahine noho kula	-
Kadua degeneri		Waianae Range Starviolet, Degener's Bluet
Kadua parvula		Rockface Star-Violet
Korthalsella degeneri	hulumoa	Degener's Korthal Mistletoe
Lepidium arbuscula	`anaunau	Waianae Range Pepperwort
Lipochaeta lobata var. leptophylla	nehe	Shrubland Nehe
lobelia niihauensis	-	Ni'ihau Lobelia
melanthera tenuifolia	nehe	-
melicope saint-johnii	alani	St. John's Melicope
neraudia angulata	ma'oloa	Angularfruit Ma'oloa
nototrichium humile	kulu'i	Ka'ala Rockwort
peucedanum sandwicense	makou	-
phyllostegia kaalaensis	-	Ka'ala Phyllostegia
plantago princeps	ale, kuahiwi laukahi	-
platydesma cornuta var. decurrens	O'ahu pilo kea, alani	-
pleomele forbesii	hala pepe	-
pteralyxia macrocarpa	kaulu	Ridged Pteralyxia
sanicula mariversa	-	Waianae Range Blacksnakeroot
schiedea hookeri	-	Sprawling Schiedea
schiedea obovata	-	-
schiedea trinervis	-	-
silene lanceolata	-	Kauai Catchfly
silene perimani	-	Clifface Catchfly
spermolepis hawaiiensis	-	Hawai'i Scaleseed
tetramolopium filiforme	-	Ridgetop Tetramolopium
tetramolopium lepidotum ssp. lepidotum	-	Wai'anae Range Tetramolopium
viola chamissoniana ssp. chamissoniana	olopu, pamakani	-

The Proposed Actions may impact the local flora and fauna during facility construction and increased visitation to the farm. Hawaiian Seabirds may traverse the project area at night for breeding, nesting, and fledging seasons, March 1 through December 15. Outdoor lighting may result in seabird disorientation which could lead to injury or mortality. The 'ōpe'ape'a, or Hawaiian Hoary Bat, roosts in wooded vegetation and can leave young unattended while foraging. Clearing shrubs during pupping season, June 1 through September 15, poses a risk to young bats. Hawaiian Waterbirds are found in a variety of wetland habitats, including lo'i kalo. Potential impacts on land cover and protected species from agricultural activities and increased visitation include changes of the landform and in nutrient cycling. KFI will pursue the following measures to mitigate these possible impacts:

Seabirds and Waterbirds

- Inform project contractors and personnel if waterbirds are found in the area.
- Implement best management practices for working in aquatic environments.
- Conduct surveys for Hawaiian waterbird nests within the project area.
- Minimize light attraction of seabirds, including fully shielding all outdoor lights so the bulb can only be seen from below, installing automatic motion sensor switches and controls on all outdoor lights or turning off lights when human activity is not occurring in the lighted area, and avoiding nighttime construction during the seabird fledging period, September 15 through December 15.

'Ōpe'ape'a

- Shield outdoor lighting so it cannot be seen from above.
- Turn off lights when human activity is not occurring in the area.
- Leave woody plants undisturbed during birthing and pup rearing season.
- Avoid using barbed wire for fencing which could ensnare bats.

Control Access to Sensitive Areas

- Limit Proposed Actions to areas that are not environmentally sensitive.
- Control visitor access to wildlife-sensitive areas to minimize disturbance.
- Protect vulnerable habitats and species with fencing or natural barriers, guiding visitors away from these areas.

Invasive Species Management

- Educate visitors on the risks of invasive species and encourage them to clean shoes and gear before and after visiting.
- Implement regular monitoring and removal of invasive species.

3.1.6 Natural Hazards

Ka'ala Farm is subject to natural hazards including the effects of climate change and wildfires. Climate change is expected to alter average temperatures and precipitation patterns in the area. Increased temperatures can affect the growth and development of plants, and heat stress may affect both plants and animals on the farm. Changing precipitation patterns could impact water resources in the area as Wai'anae continues to become hotter and drier. Climate change may also increase the frequency or intensity of extreme weather events like hurricanes and tropical storms which could lead to flooding and soil erosion in the project area.

The effects of climate change all contribute to a heightened risk of wildfire. The thousands of acres of grasslands and forested areas in the Wai'anae Kai ahupua'a are vulnerable to wildland fires, which are often set intentionally along Wai'anae Valley Road by malicious individuals. In August 2018, a fire was started in the vicinity of the Ka'ala Farm Cultural Learning Center and spread through the mid-section of the ahupua'a and into Mākaha Valley, scorching a total of around 8,000 acres.

Anticipated Impacts and Mitigation Measures

KFI must pursue both climate change mitigation and adaptation to move towards sustainability. New additions to the site along with the increasing severity and frequency of natural disasters, such as wildfire or severe storms, may lead to higher risks for property damage. KFI will pursue the following measures to mitigate these anticipated impacts:

Resilient Infrastructure Design

- Ensure that new structures and facilities are designed with natural hazards in mind, using materials and construction techniques that enhance durability and resilience.
- Manage vegetation around structures to reduce fuel loads and the potential for those structures to catch fire.
- Regularly inspect and maintain infrastructure to withstand increased storm intensity and potential wildfire exposure.

Habitat Restoration and Conservation

- Engage in habitat restoration projects to restore native vegetation, which can be more resilient to wildfires and can help to stabilize soil.
- Maintain lo'i kalo that can absorb excess stormwater and reduce flood risk.

Collaboration with Local Authorities and Neighbors

- Work closely with local fire departments, emergency services, and natural hazard experts to align farm management practices with regional risk reduction strategies.
- Facilitate local fire prevention and storm readiness programs.
- Collaborate with other landowners and partners in Wai'anae Kai to reduce the regional wildfire risk.

Emergency Preparedness and Response Plans

- Develop comprehensive emergency preparedness and response plans tailored to natural hazards, including wildfires and severe storms.
- Conduct regular emergency drills with staff and provide information to visitors on what to do in case of a natural disaster.
- Establish communication strategies to alert visitors, staff, and neighbors quickly in the event of an emergency.

3.2 Cultural, Archaeological, and Socio-Economic Environment

3.2.1 Wai'anae Valley History

Archaeological evidence confirms continuous use of Wai'anae Valley since the 1100s, beginning with taro cultivation in the lower valley. Use of Wai'anae Valley continued to increase through the 1400s and 1500s, with permanent houses and fields spreading into the upper valley and lo'i expansion along Kaupuni Stream. Due to the abundant streams and fertile soils, Wai'anae ahupua'a had the largest population in the moku of Wai'anae, estimated at 1,500 to 2,000 inhabitants by the time of European contact. Wai'anae Valley also held some of the most important places in the moku, with six large heiau in the makai portion of the valley and several large fishponds. Wai'anae means "waters of the mullet" from the abundance of these fish in the nearshore waters.

The moku of Wai'anae had large sandalwood forests on its valley slopes and in the early 1800s sandalwood trade began between Hawaiian Chiefs and western sailors. By 1830 sandalwood was near extinction in Hawai'i, including in the Wai'anae Mountains, resulting in a collapse in the sandalwood trade. By the second half of the 19th century, the landscape in the moku of Wai'anae was characterized by large ranches in Lualualei, Wai'anae, Mākaha, and Mākua Valleys. The sugar industry came to Wai'anae in the late 1800s and in 1880 the Wai'anae Sugar Mill began operation, impacting water resources, as sixteen tunnels were drilled in Wai'anae Valley to irrigate the thirsty crop.

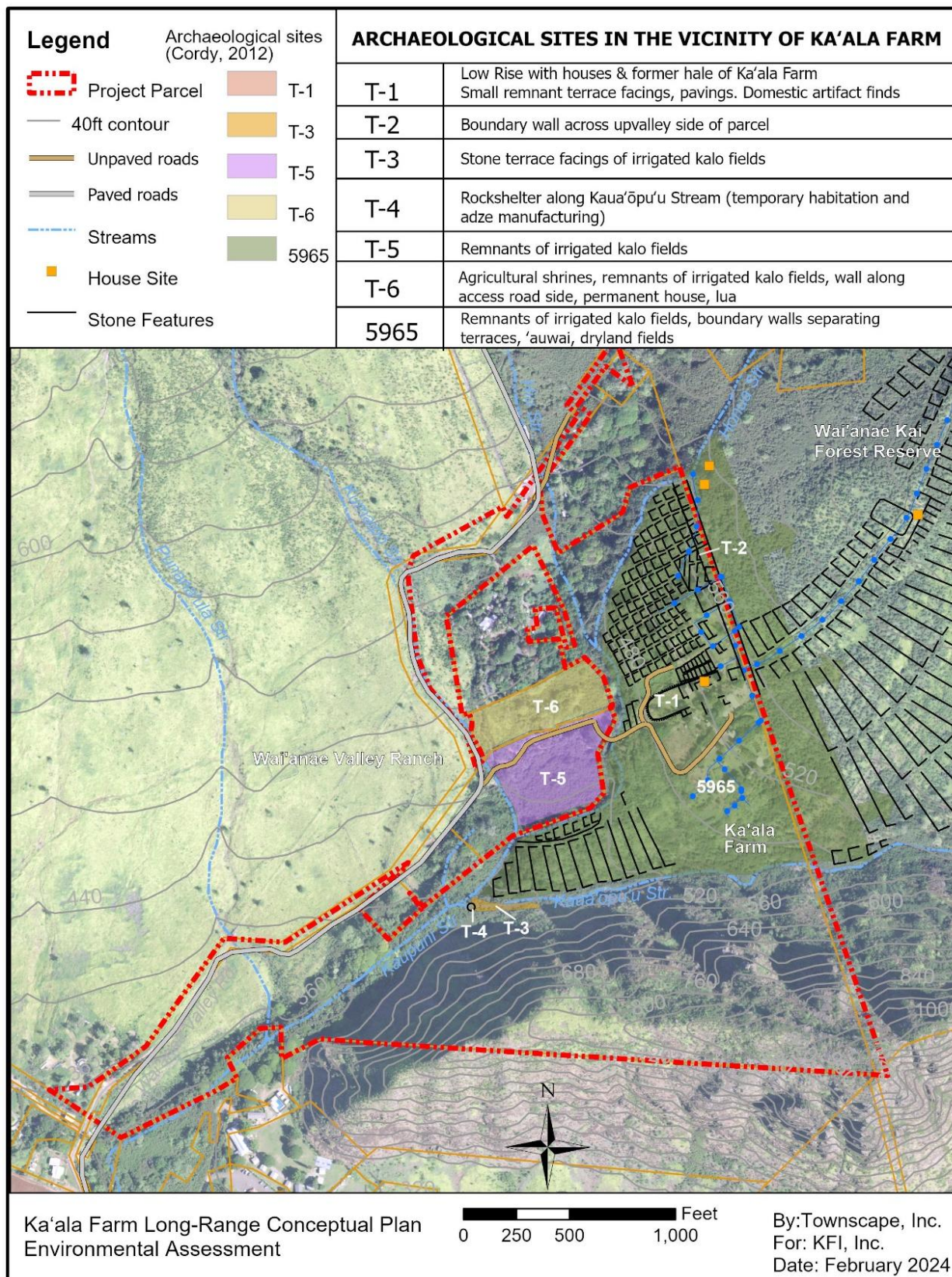


Figure 10 Archaeological Sites

In more recent times, Wai'anae has seen changes in land use and development. Wai'anae Valley now has a population of over 13,000 and the valley is a mix of residential areas, agriculture, and preserved land. In recent decades there has been an effort to study, protect, and restore the rich cultural resources of the area.

3.2.2 Archaeological Sites

Students and professional archaeologists are important partners for KFI as it aims to preserve the rich cultural and archaeological history of upper Wai'anae Valley. Over the past decades there has been extensive archaeological study of upper Wai'anae Valley including the DHHL parcel (see Figure 10). Upper Wai'anae Valley contains one of the largest intact Hawaiian cultural landscapes remaining on O'ahu. Given the cultural significance of Mt. Ka'ala and the importance of Wai'anae Valley within the Moku of Wai'anae, this cultural landscape is perhaps the most important on the island of O'ahu. The valley includes many religious sites, including three large heiau, several smaller heiau, and family shrines. Archaeological sites in the upper Wai'anae Valley show a general pattern of lo'i on stream flats or on slopes along streams, with adjacent dry fields and houses. A survey map created by M.D. Monsarrat in 1906 shows over 200 acres of land as "Formerly in taro." A large portion of this land lies within the present-day Wai'anae Kai Forest Reserve mauka of Ka'ala Farm and on the DHHL parcel itself.

Anticipated Impacts and Mitigation Measures

Ka'ala Farm is an ancient agricultural complex, learning center, and working farm. KFI has a unique opportunity to restore the historic food-producing function of this area, providing healthy, culturally appropriate food for the community and benefiting local ecosystems. KFI has long partnered with archaeologist Dr. Ross Cordy to document the historic landscape of upper Wai'anae and welcomes additional archeological study and opportunities to introduce students and visitors to the importance of cultural and archaeological restoration. As the proposed actions, and the programs they serve, occur within and around known archaeological sites, KFI will pursue the following measures to mitigate anticipated impacts:

Protection of Archaeological and Cultural Sites

- Collaborate with archaeologists, cultural heritage experts, and local authorities to identify and protect sensitive sites.
- Obtain the necessary permits and approvals to work among and with identified archaeological sites and features.
- Commit to the preservation and restoration of archaeological sites as part of the farm's commitment to reclaiming cultural heritage.

Visitor Management and Education

- Establish clear, enforced guidelines for behavior at archaeological sites, including designated pathways, restricted areas, and rules to guide behavior.
- Limit visitor numbers in sensitive areas to prevent overcrowding and reduce the risk of damage and vandalism.
- Educate the community and visitors on the cultural significance of Wai'anae Kai and how to respectfully engage with the cultural landscape.

Funding and Support for Archaeological Work

- Establish partnerships with academic institutions and research organizations to facilitate archaeological work at the sites, enhancing their scientific and educational value.

3.2.3 Cultural Resources & Practices

The cultural resources at Ka'ala Farm take myriad forms, including mo'olelo, cultural practices, native plants, the broader ecosystem, fresh water which brings life to all inhabitants, and other biocultural resources. Together, these cultural resources and practices make up Ka'ala Farm's identity and are critical to KFI's mission to reclaim and perpetuate Hawaiian culture.

Mo'olelo

Mo'olelo is the oral tradition of stories, myths, and legends which is an important part of the cultural fabric in Hawai'i. These stories are often place-based and illustrate the connection of people to 'āina. Mount Ka'ala holds a special significance as the highest peak on O'ahu and is a sacred place for Hawaiians. The mo'olelo of Ka'ala Farm itself is also a cultural resource, helping the farm and learning center to connect people to place and culture over the past forty years, and thus serve as an enduring anchor for the community. Ka'ala Farm continues to honor the past, connecting people to their cultural heritage, while looking towards the future, envisioning new and innovative ways to foster the Hawaiian spirit in all of Hawai'i's inhabitants.

Water

The Hawaiian people have always understood the critical importance of fresh water, organizing the ahupua'a land management system around it. Stories of springs and streams created by the gods Kāne and Kanaloa establish a spiritual connection to fresh water, emphasizing it as perhaps the most important cultural resource. KFI continues to restore the lo'i at Ka'ala Farm to reestablish and maintain the connection between people, 'āina, and wai and will continue to prioritize water as a critical cultural resource that brings life to the farm and surrounding ecosystem.

Ecosystem

The ecosystem at Ka'ala Farm extends beyond the cultivated plants and animals on-site to include the surrounding wildlife and people that are nourished by the farm's programming. This broad socio-ecosystem is a critical cultural resource that stewards the 'āina, creates a kīpuka for native species, and allows for a healthy balance between people and the natural environment. This balance, maintained through landscape restoration, traditional agricultural practices, and environmental education, continue to steward the ecosystem at Ka'ala Farm and the larger Wai'anae Valley.

Cultural Practices

The cultural practices at Ka'ala Farm span the past, present, and future. Ka'ala Farm is a cultural kīpuka that preserves and propagates Hawaiian heritage and traditions. KFI honors traditional Hawaiian cultural and religious customs through its programs, land uses, and day to day activities at Ka'ala Farm. Both Ka'ala Farm and the larger Wai'anae Valley hold a historical and cultural significance that is perpetuated through cultural practices at Ka'ala Farm. The Cultural Learning Center and Community Farm at Ka'ala provide access and opportunities for kanaka to practice their culture and educate others. 'Āina-based practices carried out by KFI continue to restore Hawaiian cultural practices and provide opportunities to preserve and perpetuate culture.

Biocultural Resources

The ancient agricultural complex at Ka'ala Farm provides a culturally significant ecosystem that yields food, building materials, medicine, seeds, flowers, ceremonial materials, and opportunities for environmental education. The importance of these biocultural resources to the community cannot be overstated, as they build the community's connection to the land and ancestors, facilitating religious practices, traditional medicine, and ceremonies. The proposed actions at Ka'ala Farm continue to emphasize these biocultural resources and educate visitors on the importance of environmental stewardship and sustainable land use.

Anticipated Impacts and Mitigation Measures

The proposed actions by KFI are not anticipated to negatively affect the cultural resources and practices at Ka'ala Farm or in Wai'anae Valley. Rather, they support cultural revitalization, connecting people to place and providing opportunities for learning and perpetuating Hawaiian culture. By supporting ecosystem restoration, environmental education, sustainable agriculture, and cultural practices, the actions summarized in this EA will continue to steward the place that is Ka'ala Farm and the broader Hawaiian community.

3.2.4 Community Socio-Economic Environment

In the Wai'anae and Lualualei DHHL planning area, there is a total population of approximately 22,000 people. The community is a mix of residential land, agricultural land, and conservation areas. Around a quarter of the population identify as "Native Hawaiian alone," giving this area one of the highest concentrations of Native Hawaiians in the State. Wai'anae has historically faced economic challenges, and there is a relatively high poverty rate compared to other parts of O'ahu. There are several service providers in Wai'anae including DHHL, the Wai'anae Coast Comprehensive Health Center, the Office of Hawaiian Affairs, Kamehameha Schools, and the Wai'anae Economic Development Council.

Anticipated Impacts and Mitigation Measures

The programs and facilities at Ka'ala Farm aim to perpetuate Hawaiian culture, in line with KFI's mission to, "*Reclaim and preserve the living culture of the Po'e Kahiko (people of old).*" Since the rediscovery of the lo'i terraces and creation of Ka'ala Farm some forty years ago, the farm has been an enduring anchor for community wellness and connection to place.

The purpose of the Community Farm is to provide DHHL beneficiaries access to nutritious, culturally appropriate crops that they learn to cultivate and process, building capacity for self-sufficiency, healthy diet, and economic independence while integrating traditional and contemporary agricultural practices. These actions will directly benefit the community by improving public health and enabling sustainable economic growth.

The purpose of the Cultural Learning Center is to educate visitors on traditional Hawaiian land stewardship, and to provide community members and visiting groups an opportunity to connect with their ancestors and the land. Again, the actions at the Cultural Learning Center would contribute to a more positive socio-economic environment in Wai'anae and Lualualei, providing much needed connection to place for Hawaiians living in the community.

In summary, KFI does not anticipate any adverse impacts to the community socio-economic environment. The proposed actions summarized in this EA will directly benefit the local community by providing access to culturally significant food and cultural practices. Ka'ala Farm continues to be an enduring anchor for the Wai'anae Community and a place that is truly "Hawaiian," a much-needed resource for a community which is traditionally underserved and is working to strengthen its ties to its culture.

3.3 Public Infrastructure

3.3.1 Roadways & Public Transit

The Wai'anae region contains County, State, Federal, and private roads. There is one primary access route through the Wai'anae Coast via Farrington Highway, a State Highway. Wai'anae Valley Road is the major mauka-makai access road in Wai'anae Valley providing access to Ka'ala Farm. Wai'anae Valley is also serviced by the county bus system. Bus Route 401, which traverses Wai'anae Valley Road, consists of thirty-five stops between the stop at Haleahi Road, the closest stop to Ka'ala Farm, and the Wai'anae Transit Center. From the Transit Center passengers can connect to other bus routes that go up the coast towards Mākaha or south towards Honolulu.

Vehicular access to Ka'ala Farm is provided by a narrow, one-lane driveway that splits from Wai'anae Valley Road, traversing Kaupuni Stream then heading mauka along the boundary between the KFI parcel and the 3-acre parcel owned by BWS. There is a large gravel area at the entrance to Ka'ala Farm that can accommodate two buses and approximately twenty private vehicles and a smaller, unpaved parking area at the Community Farm that can accommodate approximately 20 vehicles.

Anticipated Impacts and Mitigation Measures

On any given day, KFI has ten staff members and eight vehicles on site. Typical daily visitor counts range from 1 to 40 people, with group sizes ranging between 10 and 30 individuals. The Farm hosts one event a year that attracts over 150 participants, the highest number of visitors it receives on a single day.

KFI has set a goal to serve a minimum of 3,000 visitors each year. During 2023 and 2024, KFI exceeded this goal, receiving an average of 4,869 annual visitors with numbers trending upwards each year. Some visitors arrive via individual personal vehicles or carpool, but the majority participate in organized educational activities and arrive in buses and shuttles.

Ka'ala Farm has been able to accommodate the vehicles associated with its programming on-site and has not had issues regarding vehicular use of Wai'anae Valley Road. In the long term, a greater number of visitors may lead to increased traffic on Wai'anae Valley Road and higher on-site parking demand. To mitigate these impacts, KFI will pursue the following mitigation measures:

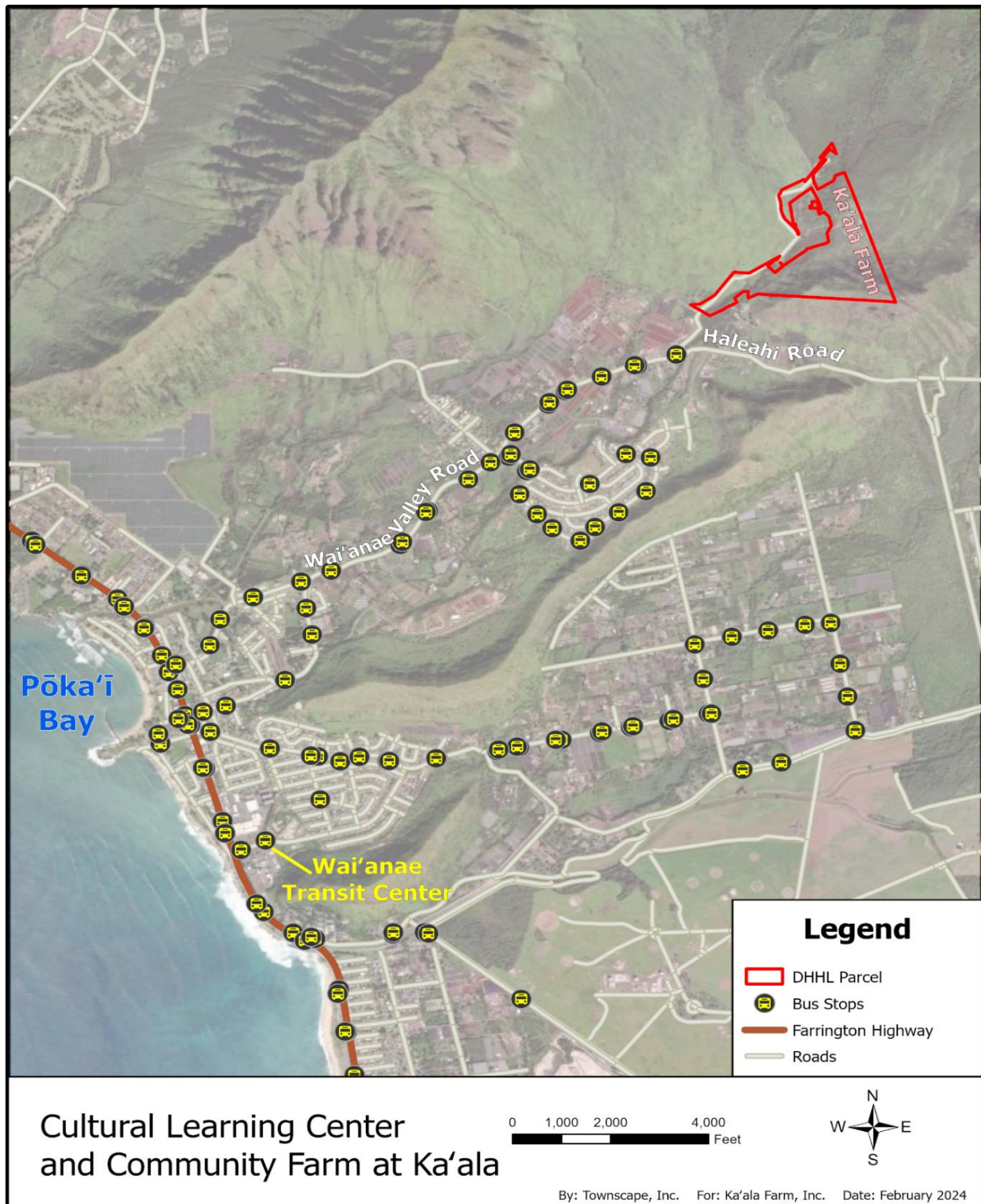


Figure 11 Roadways

Traffic Management Strategies

- Implement traffic management strategies such as designated pick-up and drop-off points for public transit users and traffic flow optimization measures.
- Encourage sustainable transportation options such as biking, public transport, walking, and carpooling to limit overuse of the road by single vehicles, thereby reducing road congestion and parking needs.

On-Site Management Strategies

- Provide parking attendants during large events to implement on-site parking efficiency measures.

Community Engagement and Collaboration

- Engage with residents to solicit feedback on potential transportation-related issues and incorporate their input into transportation planning efforts to minimize disruptions and address concerns.

3.3.2 Infrastructure and Utilities

Electrical power and telephone service are provided by pole-mounted lines that follow Wai'anae Valley Road. The pole line then continues up Wai'anae Valley Road as far as the BWS wells and reservoir in the upper valley. The Wai'anae district is serviced by a wastewater treatment plant operated by the County's Department of Environmental Services, but Ka'ala Farm is not connected to county sewer. KFI has three composting toilets near the Hale Kuke and one flush toilet in the Gathering Space for workers and visitors to the farm.

Stream diversion No. 535 from Honua Stream provides agricultural water to the Cultural Learning Center and Community Farm. The water travels in pipelines from the stream to Ka'ala Farm, where the water feeds into the restored lo'i kalo, then back into Honua Stream. Several sprinklers are used to irrigate dryland crops and the edible forest. Potable water is currently brought in five-gallon jugs, as needed. Purification of water from the diversion will provide additional potable water.

Anticipated Impacts and Mitigation Measures

An increase in visitors to the farm may increase infrastructure and utility use. To mitigate these potential impacts KFI will pursue the following measures:

Alternative Energy and Resource Management

- Utilize renewable energy (solar panels) for powering visitor facilities.
- Use traditional low-energy building techniques and agricultural practices.

- Implement resource management strategies, including water conservation measures, energy-efficient lighting, and waste reduction initiatives, to minimize the strain on utilities and promote sustainability.

Potable Water and Wastewater

- Use irrigation best practices to minimize water use on the Community Farm.
- Purify stream water for potable needs.
- Continue to bring in potable toilets for large events.

Collaboration with Local Authorities and Community Members

- Collaborate with local authorities and utility providers to assess infrastructure needs, coordinate development plans, and secure funding for necessary upgrades and expansions to meet the demands of increased visitor numbers.
- Engage with local residents and businesses to raise awareness of the importance of sustainable resource management and encourage community-wide participation in conservation efforts to alleviate pressure on infrastructure and utilities.

3.3.3 Public Services & Facilities

There is a fire station, police station, and three public schools located within Wai'anae Valley. Wai'anae Coast Comprehensive Health Center is the closest medical facility and is located in Lualualei.

Anticipated Impacts and Mitigation Measures

KFI anticipated positive impacts to public services and facilities as a result of the Proposed Actions. Wildfire management programs will reduce the threat of fire in and around the vicinity of the Cultural Learning Center and Community Farm and continued presence in the back of the valley will deter criminal and undesirable behavior.

Public schools in the area will benefit from an available hands-on, culturally-relevant outdoor classroom. Additionally the farm programs will bolster public health in the community through access to culturally significant food and practices, which will put less strain on public services and facilities in the Wai'anae community.

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CHAPTER 4 Relationship to Plans and Policies

This chapter describes the relationship of the Proposed Actions to relevant planning efforts and policies.

4.1 State and County

4.1.1 State Land Use Districts

The State Land Use Law establishes a framework that classifies all lands into one of four districts: Urban, Rural, Agricultural, and Conservation. The Project Area is in the Agricultural State Land Use District (see Figure 12), which is meant for agricultural activities, their support facilities, and land with significant potential for agricultural uses. Traditional agricultural practices are being integrated with modern sustainable agriculture techniques as they are developed. As a restored ancient agricultural complex and working farm, Ka'ala Farm is continuing the region's agricultural heritage and is training local families to farm as well.

The Project Area is adjacent to the Wai'anae Kai Forest Reserve located in the Conservation State Land Use District. Lands classified as Conservation are mostly in existing forest and water reserve zones and are necessary for protecting water resources and habitat for endemic species. Ka'ala Farm engages in partnerships with entities such as the State DLNR, Honolulu Board of Water Supply, and Wai'anae Mountains Watershed Partnership to support groundwater recharge, native forest restoration, habitat provision for endemic species, wildfire prevention and mitigation, and surface water resource stewardship. The Proposed Actions at Ka'ala Farm will support the Conservation land use by stewarding the local ecosystem and promoting the sustainable use of natural resources.

4.1.2 County Zoning

The Project Area is in the AG-2 zone for the City and County of Honolulu (see Figure 13). AG-2 zoning is meant to conserve and protect agricultural activities on smaller parcels of land. DHHL-owned lands are not subject to City and County zoning requirements but can still use county zoning as a reference for development activity. The programs, facilities, and land uses at Ka'ala Farm generally support the AG-2 zoning designation. The character of the existing structures at Ka'ala Farm is consistent with nearby residential districts, and there is significant agricultural activity undertaken on the site. The proposed structures will be consistent with the overall character of the farm as a Hawaiian place. Hawaiian agricultural traditions are conserved on the site, and visiting groups can learn the importance of sustainable, local agriculture.

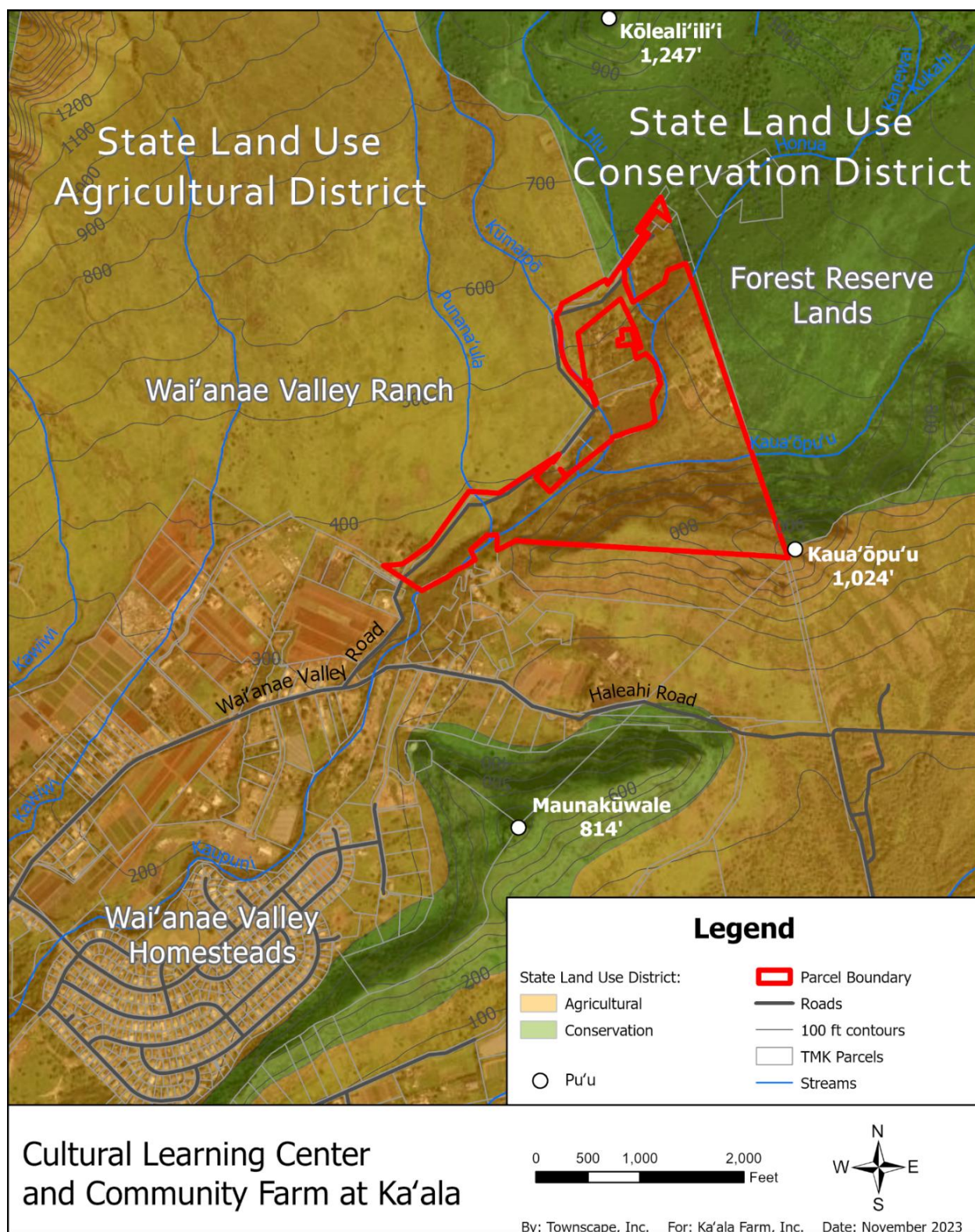


Figure 12 State Land Use Districts

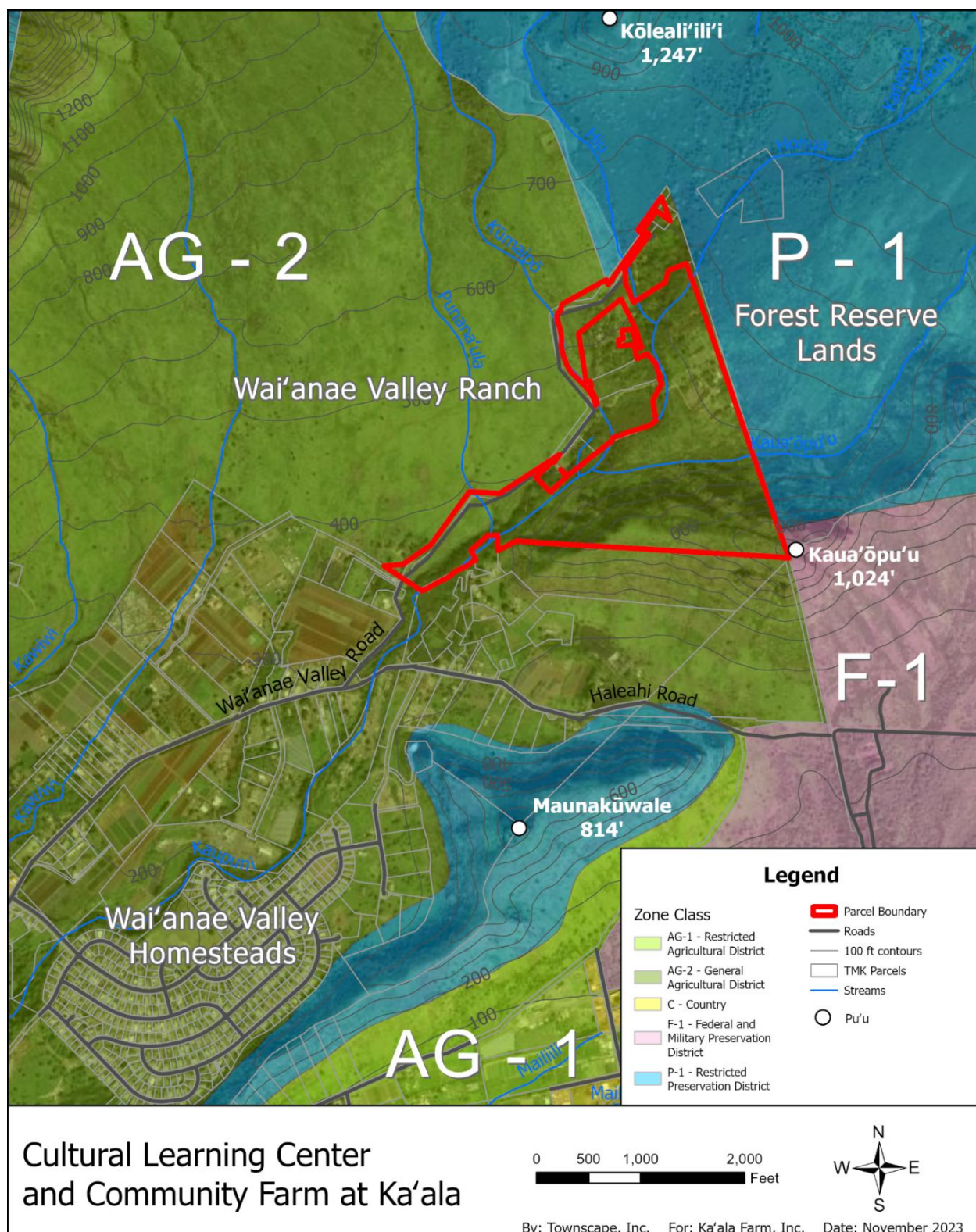


Figure 13 County Zoning

4.1.3 Hawai'i State Plan

The Hawai'i State Plan was prepared as a result of the 1978 Hawai'i State Planning Act and serves as a long-range guide for development in the State. The goals of the plan are a strong economy; a desired physical environment; and physical, social, and economic wellbeing for all. The overall theme of the Hawai'i State Plan includes three values:

1. Individual and family self-sufficiency refers to the rights of people to maintain as much self-reliance as possible. It is an expression of the value of independence, in other words, being able to freely pursue personal interests and goals. Self-sufficiency means that individuals and families can express and maintain their own self-interest so long as that self-interest does not adversely affect the general welfare. Individual freedom and individual achievement are possible only by reason of other people in society, the institutions, arrangements and customs that they maintain, and the rights and responsibilities that they sanction.
2. Social and economic mobility refers to the right of individuals to choose and to have the opportunities for choice available to them. It is a corollary to self-sufficiency. Social and economic mobility means that opportunities and incentives are available for people to seek out their own levels of social and economic fulfillment.
3. Community or social well-being is a value that encompasses many things. In essence, it refers to healthy social, economic, and physical environments that benefit the community as a whole. A sense of social responsibility, of caring for others and for the well-being of our community and of participating in social and political life, are important aspects of this concept. It further implies the aloha spirit--attitudes of tolerance, respect, cooperation, and unselfish giving, within which Hawaii's society can progress.

The Proposed Actions will support the above values by enabling self-sufficiency through Native Hawaiian agriculture and cultural practices. Families will be able to become more self-sufficient by growing food that is culturally significant to them. Agricultural activities and educational programs at Ka'ala Farm contribute to the local economy, providing opportunities for social and economic mobility. The Proposed Actions steward the local environment while providing opportunities for community-based agriculture and nature-based learning. Historically significant features of the landscape are preserved for community use and space is allocated for communally-stewarded ecosystems, which lifts the community and social well-being. Overall, the places and programs at Ka'ala Farm contribute to the holistic well-being of the community which is in line with the goals and vision of the Hawai'i State Plan.

4.1.4 Island of Oahu General Plan

The Island of O'ahu General Plan identifies long-term development objectives and goals for the City and County of Honolulu. The General Plan is the first tier in the City's planning process, followed by the Sustainable Community Plans. The General Plan identifies eleven key areas for guiding land use and development. The Proposed Actions support policies in the key areas of Natural Environment & Resource Stewardship, Health & Education, and Culture & Recreation.

Natural Environment & Resource Stewardship

The Proposed Actions support the following objectives and policies in the Natural Environment and Resource Stewardship area:

Objective A To protect and preserve the natural environment.

- Policy 1 Protect O'ahu's natural environment, especially the shoreline, valleys, ridges, watershed areas, and wetlands from incompatible development.
- Policy 3 Preserve, protect, and restore stream flows and stream habitats to support aquatic and environmental processes and riparian, scenic, recreational, and Native Hawaiian cultural resources.
- Policy 6 Design and maintain surface drainage and flood-control systems in a manner which will help preserve natural and cultural resources.
- Policy 10 Increase public awareness, appreciation, and protection of O'ahu's land, air, and water resources.
- Policy 12 - Plan, prepare for, and mitigate the impacts of climate change on the natural environment, including strategies of adaptation.

Objective B To preserve and enhance natural landmarks and scenic views of O'ahu for the benefit of both residents and visitors as well as future generations.

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

Health & Education

The Proposed Actions Support the following objectives and policies in the Health and Education area:

Objective A: To protect the health and well-being of residents and visitors.

- Policy 5 - Encourage healthy lifestyles by supporting opportunities that increase access to and promote consumption of fresh, locally grown foods.

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

Policy 6 - Encourage outdoor learning opportunities and venues that reflect our unique natural environment and Native Hawaiian culture.

Culture & Recreation

The Proposed Actions support the following objectives and policies in the Culture and Recreation area:

Objective A: To foster the multiethnic culture of Hawai'i and respect the host culture of the Native Hawaiian people.

Policy 2 - Promote the preservation and enhancement of local cultures, values, and traditions.

Policy 5 - Preserve the identities of the historical communities of O'ahu.

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

Policy 1 - Promote 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 7 - Encourage the protection of areas that are historically important to Native Hawaiian cultural practices and to the cultural practices of other ethnicities, in order to further preserve and continue these practices for future generations.

The activities at Ka'ala Farm are in line with how the General Plan envisions development on the island. The Proposed Actions support the objectives and goals of the General Plan by practicing natural resource stewardship, preserving historic sites, and enabling cultural education.

4.1.5 Wai'anae Sustainable Communities Plan

Wai'anae is one of eight planning regions on O'ahu. Sustainable Communities Plans provide policies and guidelines for land uses in each region, including historic and cultural resources. The Wai'anae Sustainable Communities Plan is a comprehensive plan developed to guide development and growth in the region. The plan focuses on addressing various aspects of community life, including housing, transportation,

economic development, natural resource management, and cultural preservation. The plan recognizes that there is a high concentration of historic and cultural sites in the moku of Wai'anae. A goal of the plan to preserve the rural landscape and lifestyle of the region; therefore, Wai'anae is not projected to have significant growth over the 25-year period of the plan. The activities at Ka'ala Farm support the following Vision Elements of the plan:

1. Recognize the traditional ahupua'a of the Wai'anae District and adapt the ahupua'a concept as a framework for land use and open space planning.
5. Preserve and restore streams and stream corridors.
6. Preserve and protect cultural sites and cultural landscapes.

Policies pertaining to historic and cultural sites aim to preserve, protect, and increase access to places and practices. The activities at Ka'ala farm support the following policies pertaining to historic and cultural sites:

- 3.6.2.1 Preserve Major Concentrations of Cultural Sites and Allow Access for Cultural Practices
- 3.6.2.6 Protect and Allow Access for Cultural Practices at Sites on Federal, State, or Private Lands

The lands at Ka'ala Farm are part of the largest intact cultural landscape on the island of O'ahu. The Proposed Actions aim to steward and enhance this cultural landscape while providing opportunities for education, making them in line with policy 3.6.2.1. The Cultural Learning Center and Community Farm offer opportunities for cultural practices as dictated by policy 3.6.2.6.

Ka'ala Farm aims to increase the community's self-sufficiency and resource stewardship. Restoring the ancient agricultural terraces slows and spreads the flow of water over the landscape, creating a healthier environment and people. The traditional agriculture and environmental management practiced at the farm exemplify the vision of the Wai'anae Sustainable Communities Plan and are in line with the rural character of Wai'anae.

4.1.6 Wai'anae Watershed Management Plan

The Wai'anae Watershed Management Plan is prepared by BWS in accordance with the State Water Code (HRS Ch 174-C). The plan aims to protect, preserve, restore, and sustainably manage water resources in the Wai'anae District. Objective 1 of the plan is to "Promote Sustainable Watersheds" and the first sub-objective (1.1) is to, "Strive to enhance and protect natural resources including land, stream, and nearshore ecosystems." The Proposed Actions at Ka'ala Farm aim to sustainably manage water resources through traditional agriculture and cultural practices.

Objective 3 of the plan is to “Protect Native Hawaiian Rights and Traditional and Customary Practices.” The Proposed Actions support this objective and Sub-Objective 3.2 , “incorporate traditional Hawaiian values and cultural practices into the modern context.”

Ka'ala Farm is an important classroom for Native Hawaiian watershed management practices. The watershed management that occurs at Ka'ala Farm influences the whole ahupua'a. The ancient terrace infrastructure and agricultural activities at Ka'ala Farm help promote a healthy watershed that is vital to the community. The lo'i kalo slow and spread the flow of surface water which aids groundwater recharge. The cultural and environmental education programs can engage community members as active participants in watershed-based projects.

4.2 DHHL

Ka'ala Farm is a place by and for Hawaiians, located on land that is owned by DHHL. This section discusses how the Proposed Actions by KFI at Ka'ala Farm create opportunities for DHHL beneficiaries, and how the Proposed Actions align with DHHL's goals and existing planning efforts.

4.2.1 DHHL General Plan

DHHL has a three-tiered planning system, consisting of a General Plan, Island Plans, and Regional Plans. The overall vision described in the General Plan is, “by 2040, the Hawaiian Home Lands Trust and its beneficiaries will be thriving, self-sufficient, and connected to one another and the 'āina.” Guiding principles for the plan were developed through consultation with beneficiaries. Pertinent principles to this project include: Returning Hawaiians to the Land, Legacy and Succession, Mālama 'Āina, and Cultural Grounding and Education.

Returning Hawaiians to the Land

This guiding principle aims to facilitate returning Hawaiians to their lands to support self-sufficiency. All of KFI's programming aims to reconnect people with the land. This may be seen through the Proposed Actions at the Community Farm, which gives community members access to agricultural land and knowledge to increase self-sufficiency, through lo'i restoration at the cultural Learning Center, dryland forest restoration at the Native Plant Kīpuka, freshwater training curriculum, any many other programs.

Legacy and Succession

DHHL aims to cultivate opportunities to share and pass down ancestral wisdom and practices. Traditional farming techniques, crafts, and plant use for food, medicine, and cultural practices are all taught by trained staff and volunteer kūpuna.

Mālama ‘Āina

This principle entails the shared kuleana to manage and steward the land to sustain community health and resilience. KFI’s actions at Ka‘ala Farm embody this shared responsibility by practicing traditional agriculture, forest restoration, water management, and cultural site restoration and revitalization using Hawaiian knowledge, skills, and values.

Cultural Grounding and Education

The Proposed Actions at both the Cultural Learning Center and Community Farm at Ka‘ala support the teaching and practice of cultural traditions including ‘ōlelo Hawai‘i, traditional agriculture, and sustainable land management.

Finally, the DHHL General Plan addresses how healthy beneficiary communities aim to be connected to place and grounded in culture. This vision of the DHHL General Plan is mirrored by the mission and vision of KFI at Ka‘ala Farm: aloha ‘āina, building community and connecting to the land.

4.2.2 DHHL O‘ahu Island Plan

The DHHL O‘ahu Island Plan provides recommendations for future DHHL land use to meet beneficiary and department needs. DHHL has approximately 4,783 acres within the moku of Wai‘anae with population centers in the towns of Mākaha, Wai‘anae, Mā‘ili, and Nānākuli. The plan divides the moku of Wai‘anae into two planning areas, the “Wai‘anae Planning Area” and the “Nānākuli Planning Area.” The Cultural Learning Center and Community Farm at Ka‘ala are in the 2,525-acre Wai‘anae Planning Area where there are a total of 632 homestead lots.

The Island Plan designates land uses on DHHL-owned lands. Ka‘ala Farm is designated as Special District, which is described as, “areas requiring special attention because of unusual opportunities and/or constraints,” which could include hazard areas, open spaces/greenways, and cultural resources. This Ka‘ala Farm plan reinforces Native Hawaiian views of land use and water, as water resources are central to the ahupua‘a system, also describing food production as a key metric of community health with the land, water, and people. The proposed small-scale agriculture, community gardens, small-scale livestock, and aquaculture are allowed within the Special District.

The Island Plan cites Ka'ala Farm as an example of how Special District lands, “play a vital cultural role for not only the ahupua'a in retaining cultural relevance and education, but for the Native Hawaiian community as a whole” (p. 3-18). It also recommends that development should be avoided in areas of cultural significance, and that cultural resources should be integrated where possible. KFI has been and will continue to work closely with Dr. Ross Cordy to ensure that activities avoid sensitive cultural resources and appropriately interact with those that can be reverently incorporated into restoration and educational programs.

4.2.3 DHHL Wai'anae and Lualualei Regional Plan

Regional Plans are the third tier in the DHHL planning process, developed in consultation with lessees in the region. The community vision from the regional planning process effort states, “the Homestead Communities of Wai'anae and Lualualei are communities that prioritize the safety and wellbeing of our keiki, kūpuna, and 'ohana, strengthened by internal and external collaborations and driven towards self-sufficiency.”

The community values identified in the Regional Plan are:

- Community Spaces
- 'Ohana
- Keiki
- Respect and Care for Our Kūpuna
- Safety
- Self-Sufficiency

The Regional Plan also identifies priority projects the community aims to implement in the next ten-year period. A priority project in the plan is “Agriculture/Aquaculture Production and Food Security,” which aims to provide educational and training programs for community members to increase agricultural capacity and food security in the region.

The activities and programs at Ka'ala Farm support these community values and priority project by serving as a gathering place for community members of all ages and by providing a culturally-based, hands-on learning environment for keiki and kūpuna. The Community Farm will provide space for 'ohana to learn how to grow their own crops and provide themselves with nutritious, culturally-significant food, supporting self-sufficiency. The sites at Ka'ala farm are a resource for all Native Hawaiians in the community to connect with the land and engage in cultural practices.

CHAPTER 5 Required Permits and Approvals

The following permits and approvals are anticipated to be needed for the Proposed Actions:

State Historic Preservation Division

- HRS §6E, Historic Preservation Review Clearance

City & County Department of Planning and Permitting

- Grading Permit or Conservation Plan
- Building Permits (After-the-Fact for Existing Facilities)*
 - Multipurpose Facility
 - Caretaker's Residence
 - Composting Toilets
- Building Permits (New Facilities)*
 - Imu
 - Barn
 - Bunkhouse
 - Gathering Space

*DHHL has the authority to issue building permits on its own lands through its in-house permitting process and may choose to administer these permits itself.

State Department of Health

- Individual Wastewater System Permit

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CHAPTER 6 Project Alternatives

This chapter discusses potential alternatives to the Proposed Actions and how these alternatives relate to the vision and guiding principles of KFI and DHHL.

6.1 “No Action” Alternative

One alternative to the Proposed Actions is a “No Action” Alternative. In this alternative, KFI could continue to facilitate some cultural and environmental education programs, but its capacity to host visiting groups and provide educational programs would be lessened in comparison to the Preferred Alternative. The “No Action” alternative also results in no change in the status of KFI’s license to the DHHL parcel, with KFI unable to engage in long-range planning and long-term partnerships for programs and funding.

The “No Action” Alternative is not in line with KFI’s goal to strengthen the relationship between the community and the land, which is an intergenerational endeavor. KFI is interested in securing a long-term lease to be able to invest in planned improvements for the Cultural Learning Center and Community Farm at Ka’ala. The “No Action” alternative would not allow KFI to make longer-term investments in infrastructure and facilities due to the uncertainty of future land access, hampering their efforts to provide cultural, agricultural, and environmental programming.

This “No Action” Alternative is also inconsistent with DHHL’s principles and goals for the project parcel. The *Legacy and Succession* guiding principle in the DHHL O’ahu Island Plan emphasizes cultivating opportunities to share and pass down ancestral wisdom and practices. The Preferred Alternative allows KFI to build its capacity to invest in infrastructure and facilities that create a multi-generational space that facilitates this transfer of ancestral wisdom and practices.

6.2 “Different Entity” Alternative

An additional alternative to the Proposed Action is an entity other than KFI receiving access to the DHHL parcel. This “Different Entity” Alternative considers other uses that DHHL could pursue for the project parcel, which is classified as “Special District,” if KFI was not involved.

The DHHL lands that are classified as “Special District” have opportunities and constraints that require special attention. The DHHL parcel at Ka’ala has a high concentration of archaeological and cultural sites, and a lack of modern infrastructure that make it a poor choice for developing housing.

KFI has stewarded the lands of upper Wai'anae Valley since the 1970s, putting it in a unique position to continue managing the important cultural and archaeological resources that are present. Through its tenure, KFI has established relationships with the neighbors, schools, public utilities, area legislators, businesses, and other like-minded non-profit organizations to build a network of community resources to support its mission and vision. A new entity would need to start from scratch, taking years to learn about the land and resources and to build trust within the community before it would be able to create its network and provide the programs and services that KFI is already providing.

CHAPTER 7 Anticipated Determination

The anticipated determination for this project is a FONSI (Finding of No Significant Impact). The Proposed Actions will not result in significant impacts to the quality or uses of the environment. The project aims to effectively steward the local environment and positively impact the surrounding community by further establishing a Cultural Learning Center and Community Farm at Ka'ala. A review of the significance criteria as outlined in HRS 343 and HAR 11-200.1 is provided below:

A. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

It is not anticipated that the Proposed Actions will have an adverse effect on any natural or cultural resources. Ka'ala Farm is a restored ancient agricultural complex and Cultural Learning Center with the goal of restoring and stewarding natural and cultural resources.

B. Curtails the range of beneficial uses of the environment;

It is not anticipated that the Proposed Actions will negatively impact the environment or curtail any beneficial uses. Traditional Hawaiian agriculture is reliant on a healthy ecosystem and watershed and the Proposed Actions enable KFI to create a healthy and abundant ecosystem at Ka'ala Farm. The project benefits the environment by removing alien grasses, restoring native forests, and improving ground water infiltration.

C. Conflicts 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;

Ch 344 states, "It shall be the policy of the State, through its programs, authorities, and resources to:

- (1) Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawaii."

The programs, land uses, and facilities at Ka'ala Farm embody the idea of humans and nature existing in productive harmony. Upper Wai'anae Valley possesses unique natural environmental characteristics and the largest intact cultural landscape on the Island of O'ahu. The programs at Ka'ala Farm aim to expand the social and economic opportunities for volunteers and visitors.

Furthermore, HRS Chapter 344 continues that the State should “Enhance the quality of life by Creating opportunities for the residents of Hawaii to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments.” The programs, land uses, and facilities at Ka'ala Farm aim to improve the quality of life for Hawaiians in the moku of Wai'anae and beyond, serving as a cultural kīpuka and working farm.

Finally, HRS Chapter 344 prioritizes “Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian.” The Cultural Learning Center and Community Farm at Ka'ala are uniquely Hawaiian places that given the opportunities and constraints of the area, showcase a wise use of land. The Proposed Actions promote a sense of social harmony within the community as residents can gain access to culturally significant places and practices.

D. Substantially affects the economic or social welfare of the community or State;

The Proposed Actions are beneficial to the local economy and social welfare of the community by providing opportunities for local agriculture and education. The Community Farm portion of the Project Area creates an opportunity for Wai'anae families to produce locally grown food which can increase food security and boost public health outcomes. Ka'ala farm improves social welfare by serving as a gathering place, Community Farm, and Cultural Learning Center. The Proposed Actions will benefit the local economy by providing job opportunities and training in agricultural methods.

Short-term construction activities may present potential minor adverse environmental impacts that will be mitigated through compliance with regulatory guidelines and use of best management practices. In the long-term the project is anticipated to have beneficial impacts on the economy and social welfare for the community and State.

E. Substantially affects public health;

There are no substantial negative impacts to public health anticipated. The Proposed Actions may have short-term construction impacts that will be mitigated through compliance with best management practices. In the long-term, the project seeks to improve the public health of the community by providing access to local agriculture and culturally significant sites. The Proposed Actions also aim to mitigate the frequency and duration of wildfires for the community, which could improve air quality and ecosystem health and reduce the threat to life and property.

F. Involves substantial secondary impacts, such as population changes or effects on public facilities;

The Proposed Actions are not anticipated to have significant secondary impacts such as changes to the population. A minimum of 3,000 visitors per year are expected at Ka'ala Farm, with many coming in groups often transported by van or bus, as they are currently. Facilities to accommodate an increase in visitors, such as increased parking and alternative transportation, are being proposed by this project.

G. Involves a substantial degradation of environmental quality;

The Proposed Actions aim to steward and enhance the quality of the local environment. There may be minor short-term impacts to surface water and drainage during construction of future facilities, which will be mitigated by best management practices and nature-based solutions. Construction activities will cause some impacts to air quality and noise around the area of the project, but these are temporary in nature and will be mitigated by best management practices in accordance with the State Department of Health, State Department of Transportation, and City & County of Honolulu guidance.

H. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

The Proposed Action is not expected to have cumulative effects that will negatively impact the environment, nor does it commit KFI or others to larger or other actions. It contributes to the long-term goals and vision of KFI at Ka'ala Farm and is limited to the 97-acre DHHL parcel. Ka'ala Farm's activities, however, are part of a broader movement to sustainably manage ecosystems and watersheds while providing opportunities for sustainable local agriculture, which is intended to spread throughout Wai'anae and beyond.

I. Substantially affects a rare, threatened, or endangered species, or its habitat;

There are no rare, threatened, or endangered species or associated habitats on the property. Adjacent to the property on the slopes of Kaua'ōpu'u ridge is designated a critical habitat for the Dry Cliff Ecosystem. No Proposed Actions will be carried out on the slopes of the ridge near this habitat. Best practices will be used to protect against potential impacts to the Hawaiian hoary bat, Hawaiian hawk, and seabirds that may fly over the property.

J. Detrimentially affects air or water quality or ambient noise levels.

There are no significant long-term impacts to air, noise, or water quality anticipated. There may be minor short-term impacts to air quality or noise levels, but these will be mitigated by best management practices during construction and active farming. In the long-term the Proposed Actions may benefit water quality by aiding in storm water retention, which slows the flow of water and allows sediments to settle out before water is returned back to the stream. Additionally, the restoration of lo'i kalo and native forest retains water on the site and creates green breaks which slows the progression of wildfire across the landscape.

L. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water or coastal waters;

The Project Area is not in an environmentally sensitive area, as it is located outside of the flood plain, tsunami zone, beach area, geologically hazardous land, estuary, and coastal water. There is a risk for wildfires to affect the site, but the Proposed Actions aim to mitigate the risk of wildfire using traditional Hawaiian flooded terraces and ecosystem restoration. There are a perennial stream and several non-perennial streams that run through the property, but the riparian area is primarily used for native plant restoration and conservation, stabilizing stream banks and reducing the intensity of wildfires by creating natural breaks, increasing moisture, and removing non-native fuel-accelerating species.

M. Substantially affects scenic vistas and view planes identified in county or state plans or studies;

A principle of sustainability in the Wai'anae Sustainable Communities Plan is to "protect agricultural lands, physical and biological resources, and where appropriate, open spaces and view planes." The Proposed Actions are in line with this principle and preserve the viewsheds that are unique to Wai'anae Valley and Ka'ala Farm, as no proposed structures will block mauka or makai views. The traditional character of structures at Ka'ala augment the views within the valley as a place of and for Hawaiians.

N. Requires substantial energy consumption;

A goal of KFI is to be energy self-sufficient for all its programs and activities. The Proposed Actions will generally be carried out using traditional Hawaiian methods and therefore will not require substantial energy consumption. KFI will explore alternative energy such as solar for planned improvements to be self-sufficient.

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Appendix A

Responses to Early Consultation and Handout

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TOWNSCAPE, INC.

Environmental & Community Planning

900 Fort Street Mall Suite 1160 · Honolulu, HI 96813 · PH: (808) 536-6999 · FAX: (808) 524-4998 · www.townscapeinc.com

November 2, 2023

Ms. Dawn Chang
Department of Land and Natural Resources
1151 Punchbowl St.
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Chairperson Chang,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

KFI is conducting early consultation to seek input from agencies, citizen groups, and individuals, which may guide the scope and preparation of the DEA, and/or may be affected by the proposed Project. Please find enclosed an Early Consultation Handout with a Project overview and location map for your review and comment. We are requesting comments no later than **December 1, 2023**, to be sent via mail or e-mail to:

Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

If we do not receive a response by this date, we will assume your agency or organization has no comments at this time. Please contact the undersigned with any questions you may have at (808) 550-3893 or via e-mail at adam@townscapeinc.com. Thank you in advance for your participation in the early consultation for this Project.

Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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November 2, 2023

Mr. Kali Watson
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, HI 96805

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Chairperson Watson,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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November 2, 2023

Ms. Sharon Hurd
Department of Agriculture
1428 S. King Street
Honolulu , HI 96814

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Chairperson Hurd,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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November 2, 2023

Dr. Kenneth Fink
Hawaii State Department of Health
1250 Punchbowl Street
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Director Fink,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
Planner

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November 2, 2023

Mr. Colin Kippen
Office of Hawaiian Affairs
560 N. Nimitz Hwy, Suite 200
Honolulu, HI 96817

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Mr. Kippen,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
Planner

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November 2, 2023

Mr. Thomas Giambelluca
Water Resources Research Center
2540 Dole St, Holmes Hall 283
Honolulu, HI 96822

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Director Giambelluca,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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November 2, 2023

Ms. Mary Alice Evans
Office of Planning and Sustainable Development
P.O. Box 2359
Honolulu, HI 96804-2359

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Director Evans,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
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November 2, 2023

Commander
Navy Region Hawaii
850 Ticonderoga St, STE 110
Pearl Harbor, HI 96860-5101

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Commander,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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November 2, 2023

Mr. Earl Campbell
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard Room 3-122
Honolulu, HI 96850

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Mr. Campbell,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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:
2024-0015354-S7-001

November 30, 2023

Mr. Adam Strubeck
Townscapes, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawai'i 96813

Subject: Technical Assistance for the Proposed Ka'ala Farm Long Range Conceptual Plan,
O'ahu

Dear Mr. Strubeck:

Thank you for your November 2, 2023, letter, requesting technical assistance for the proposed Ka'ala Farm Long Range Conceptual Plan located at 85-1753 Wai'anae Valley Road in Wai'anae, on the island of O'ahu [TMK: (1) 8-5-005:036]. The proposed project is located in the eastern sector of the upper Wai'anae Valley, near the mauka end of Wai'anae Valley Road. The site known as Ka'ala Farm includes a cultural learning center, restored lo'i kalo, dryland fields, a native dryland forest, and a traditional native Hawaiian hale. The project includes actions described in the Ka'ala Farm's Long Range Conceptual Plan (2013), which are organized into the following categories: Infrastructures, Land Uses, Facilities, Watershed Stewardship, and Cultural Site Preservation and Reuse (see below).

- Infrastructure: Planned infrastructure improvements include adding additional parking areas to accommodate visitors, establishing a potable water supply from Honua Stream, clearing unpaved walking paths, constructing a fenced enclosure for small animals, exploring the possibility of renewable energy systems to reduce energy needs, implementing on-site wastewater management systems such as vegetated swales and constructed wetlands, and establishing long-term access to an agricultural water supply.
- Land Uses: Proposed land uses include lo'i kalo, dryland fields, aquaponics, an edible forest, educational and gathering spaces, and a wildfire fuel break.
- Facilities: The planned structures include a 600 square (sq.) foot (ft.) barn, a 400 sq. ft. field shelter, a 450 sq. ft. bathhouse, a 1,500 sq. ft. gathering space, and a 1,250 sq. ft. bunkhouse.

PACIFIC REGION 1

IDAHO, OREGON*, WASHINGTON,
AMERICAN SAMOA, GUAM, HAWAI'I, NORTHERN MARIANA ISLANDS

*PARTIAL

- Watershed Stewardship: Watershed management activities will be integrated with those of the Wai‘anae Mountains Watershed Partnership and include water resource monitoring and education, wildfire prevention and mitigation, native plant restoration, and flood hazard mitigation.
- Cultural Site Preservation & Reuse: Planned activities for cultural site preservation include documenting cultural sites of Upper Wai‘anae Valley, restoring agricultural sites in the Wai‘anae Kai Forest Reserve, and preserving ancient agricultural terraces.

Our letter has been prepared under the authority of and in accordance with provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as amended (ESA). We have reviewed the information you provided and pertinent information in our files, as it pertains to federally listed species in accordance with section 7 of the ESA. Our data indicate the following species may occur or transit through the vicinity of the proposed project area: endangered ‘ua‘u (Hawaiian petrel, *Pterodroma sandwichensis*), endangered Hawai‘i distinct population segment (DPS) of the ‘akē‘akē (band-rumped storm-petrel, *Hydrobates castro*), threatened ‘a‘o (Newell’s shearwater, *Puffinus newelli*) (hereafter collectively referred to as Hawaiian seabirds); the endangered ‘ōpe‘ape‘a (Hawaiian hoary bat, *Lasiurus cinereus semotus*); endangered koloa maoli (Hawaiian duck, *Anas wyvilliana*), endangered ‘alae ke‘oke‘o (Hawaiian coot, *Fulica alai*), endangered ae‘o (Hawaiian stilt, *Himantopus mexicanus knudseni*), and endangered ‘alae ‘ula (Hawaiian gallinule, *Gallinula galeata sandvicensis*) (hereafter collectively referred to as Hawaiian waterbirds). We provide the following to assist you in preparation of your project.

Hawaiian Seabirds

Hawaiian seabirds may traverse the project area at night during the breeding, nesting, and fledging seasons, March 1 through December 15. Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable to light attraction.

To avoid and minimize potential project impacts to Hawaiian seabirds we recommend you incorporate the following measures into your project design:

- Fully shielded all outdoor lights so the bulb can only be seen from below.
- Install automatic motion sensor switches and controls on all outdoor lights or turned off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

‘Ōpe‘ape‘a

‘Ōpe‘ape‘a roosts in woody vegetation across all islands and will leave their young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, June 1 through September 15, there is a risk that young bats could inadvertently be harmed or killed, since they are too young to fly or move away from disturbance. ‘Ōpe‘ape‘a

forage for insects from as low as 3 feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize potential project impacts to the endangered 'ōpe'ape'a, we recommend you incorporate the following applicable measures into your project design:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the birthing and pup rearing season for 'ōpe'ape'a, June 1 through September 15.
- Do not use barbed wire for fencing.

Hawaiian Waterbirds

Hawaiian waterbirds are currently found in a variety of wetland habitats including freshwater marshes and ponds, coastal estuaries and ponds, artificial reservoirs, kalo or taro (*Colocasia esculenta*) lo'i or patches, irrigation ditches, sewage treatment ponds, and in the case of the koloa maoli, montane streams and marshlands. Ae'o may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include habitat loss and habitat degradation.

To avoid and minimize potential project impacts to Hawaiian waterbirds we recommend you incorporate the following measures into your project design:

- In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- If water resources are located within or adjacent to the project area, incorporate applicable best management practices (BMPs) regarding work in aquatic environments into the project design (see enclosure).
- Have a biological monitor that is familiar with the species' biology conduct Hawaiian waterbird nest surveys where appropriate habitat occurs within the vicinity of the project site prior to project initiation. Repeat surveys again within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest). If a nest or active brood is found:
 - Contact the Service within 48 hours for further guidance.
 - Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.
 - Have a biological monitor that is familiar with the species' biology present on the project site during all construction or earth moving activities until the chicks/ducklings fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

In addition, your project may result in the creation of standing water or open water that could attract Hawaiian waterbirds to the project site. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. The ae'o is also known to nest in sub-optimal locations (e.g., any ponding water), if water is present. Therefore, we recommend you work with our office during project planning so that we may assist you in developing measures to avoid impacts to listed species (e.g., fencing, vegetation control, predator management).

We appreciate your efforts to conserve protected species. If you have questions regarding this response, please contact Charmian Dang, Fish and Wildlife Biologist (phone 808-792-9400, email: Charmian_Dang@fws.gov). When referring to this project please include this reference number: 2024-0015354-S7-001.

Sincerely,

Island Team Manager
O‘ahu, Kaua‘i, Northwest Hawaiian Islands and
American Samoa

Enclosure: Service Recommended Standard BMPs



TOWNSCAPE, INC.

Environmental & Community Planning

900 Fort Street Mall Suite 1160 · Honolulu, HI 96813 · PH: (808) 536-6999 · FAX: (808) 524-4998 · www.townscapeinc.com

November 2, 2023

Mr. Ernest Lau
Board of Water Supply
630 South Beretania Street
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Mr. Lau,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

KFI is conducting early consultation to seek input from agencies, citizen groups, and individuals, which may guide the scope and preparation of the DEA, and/or may be affected by the proposed Project. Please find enclosed an Early Consultation Handout with a Project overview and location map for your review and comment. We are requesting comments no later than **December 1, 2023**, to be sent via mail or e-mail to:

Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

If we do not receive a response by this date, we will assume your agency or organization has no comments at this time. Please contact the undersigned with any questions you may have at (808) 550-3893 or via e-mail at adam@townscapeinc.com. Thank you in advance for your participation in the early consultation for this Project.

Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout

**BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU**

630 SOUTH BERETANIA STREET • HONOLULU, HAWAII 96843
Phone: (808) 748-5000 • www.boardofwatersupply.com

RICK BLANGIARDI
MAYOR
MEIA

ERNEST Y. W. LAU, P.E.
MANAGER AND CHIEF ENGINEER
MANAKIA A ME KAHU WILIKI

ERWIN KAWATA
DEPUTY MANAGER
HOPE MANAKIA



NĀ'ĀLEHU ANTHONY, Chair
KAPUA SPROAT, Vice Chair
BRYAN P. ANDAYA
JONATHAN KANESHIRO
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

December 1, 2023

Mr. Adam Strubeck
Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawai'i 96813

Dear Mr. Strubeck:

Subject: Your Letter Dated November 2, 2023 Requesting Comments on the Early Consultation Request for Draft Environmental Assessment for the Ka'ala Farm Long-Range Conceptual Plan in Wai'anae - Tax Map Key: 8-5-005: 036

Thank you for your letter regarding the proposed Ka'ala Farm Long-Range Conceptual Plan.

The Honolulu Board of Water Supply (BWS) does not have any objections to the proposed project. BWS understands that all irrigation and potable water will be provided by the private water system serving the area.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at (808) 748-5443.

Very truly yours,

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



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November 2, 2023

Mr. Matthew Gonser
Department of Climate Change, Sustainability and Resiliency
650 South King Street, 11th floor
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Director Gonser,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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November 2, 2023

Mr. Hirokazu Toiya
Department of Emergency Management
650 South King Street, Basement
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Director Toiya,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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November 2, 2023

Ms. Catherine Taschner
Department of Land Management
650 South King Street, 3rd Floor
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Director Taschner,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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November 2, 2023

Ms. Dawn Takeuchi Apuna
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Ms. Takeuchi Apuna,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

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Sincerely,

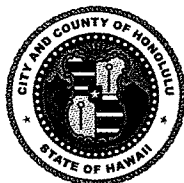
Adam Strubeck
Planner

Enclosure: Early Consultation Handout

DEPARTMENT OF PLANNING AND PERMITTING
KA 'OIHANA HO'OLĀLĀ A ME NĀ PALAPALA 'AE
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041 • WEBSITE: honolulu.gov/dpp

RICK BLANGIARDI
MAYOR
MEIA



DAWN TAKEUCHI APUNA
DIRECTOR
PO'O

JIRO A. SUMADA
DEPUTY DIRECTOR
HOPE PO'O

December 4, 2023

2023/ELOG-2040(FK)
2491148

Mr. Adam Strubeck
Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96813

SUBJECT: Early Consultation for a Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan (Plan)
85-1753 Wai'anae Valley Road, Wai'anae, O'ahu
Tax Map Key 8-5-005: 036

Dear Mr. Strubeck:

In response to your November 2, 2023 request for comments regarding the above-referenced action, the Department of Planning and Permitting (DPP) has the following comments:

1. The DEA should provide an update, if necessary, to the Plan's phasing schedule described on page 5, and should discuss how the proposed action conforms to the vision, objectives, policies, and guidelines contained in the 2012 Wai'anae Sustainable Communities Plan.
2. The DPP is supportive of the cultural and environmental educational programs provided by Ka'ala Farm. The DEA should provide detailed information about the proposed use and activities, and should include the State Department of Hawaiian Home Land's (DHHL's) determination on whether Ka'ala Farm will be compliant with the State Land Use Law and the City's zoning regulations.
3. The DEA should provide the expected number of visitors, frequency, duration, and hours of operation for each event and activity by month as well as annually.

Mr. Adam Strubeck
December 4, 2023
Page 2

4. The DEA should provide a more detailed preservation, restoration, and protection plan for native Hawaiian cultural and historic resources, including cultural, historic, and pre-contact sites and monuments.
5. The DEA should outline the outreach and community support for the Plan from groups such as the area neighborhood boards, and civic and community organizations.
6. The DEA should outline the building code, grading, water quality, storm drainage, and wastewater permits that may be necessary.

The DPP looks forward to the DEA and reserves the possibility of further comments upon its review at that time. Should you have any questions, please contact Franz Kraintz at fkraintz@honolulu.gov or at (808) 768-8046.

Very truly yours,

A handwritten signature in black ink, appearing to read "Dina L.T. Wong", written in a cursive style.

Dina L.T. Wong
Planning Division Chief

DLTW:tc



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November 2, 2023

Dr. Roger Babcock Jr.
Department of Environmental Services
1000 Uluohia Street, Suite 308
Kapolei, HI 96707

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Director Babcock Jr.,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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Environmental & Community Planning

900 Fort Street Mall Suite 1160 · Honolulu, HI 96813 · PH: (808) 536-6999 · FAX: (808) 524-4998 · www.townscapeinc.com

November 2, 2023

Mr. Ka'ili Trask O'Connell
Mayor's Office of Culture and the Arts
650 South King Street
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Director Trask O'Connell,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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Environmental & Community Planning

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November 2, 2023

Mr. Jonathan Ho'omanawanui
Wai'anae Coast Neighborhood Board No. 24
84-740 Kili Dr.
Wai'anae, HI 96792

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Mr. Ho'omanawanui,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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Environmental & Community Planning

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November 2, 2023

Rep. Cedric Gates
Hawai'i State Capitol, Room 441
415 South Beretania St.
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Representative Gates,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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Environmental & Community Planning

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November 2, 2023

Sen. Maile Shimabukuro
Hawai'i State Capitol, Room 222
415 South Beretania St.
Honolulu, HI 96814

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Senator Shimabukuro,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Planner

Enclosure: Early Consultation Handout



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Environmental & Community Planning

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November 2, 2023

Ms. Andria Tupola
Honolulu City Council
Honolulu Hale, 530 S. King Street #202
Honolulu, HI 96813

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Councilmember Tupola,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



TOWNSCAPE, INC.

Environmental & Community Planning

900 Fort Street Mall Suite 1160 · Honolulu, HI 96813 · PH: (808) 536-6999 · FAX: (808) 524-4998 · www.townscapeinc.com

November 2, 2023

Ms. Shauna Graner
Ho'omau ke Ola
85-761 Farrington Highway #103
Wai'anae, HI 96792

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Ms. Graner,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

KFI is conducting early consultation to seek input from agencies, citizen groups, and individuals, which may guide the scope and preparation of the DEA, and/or may be affected by the proposed Project. Please find enclosed an Early Consultation Handout with a Project overview and location map for your review and comment. We are requesting comments no later than **December 1, 2023**, to be sent via mail or e-mail to:

Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

If we do not receive a response by this date, we will assume your agency or organization has no comments at this time. Please contact the undersigned with any questions you may have at (808) 550-3893 or via e-mail at adam@townscapeinc.com. Thank you in advance for your participation in the early consultation for this Project.

Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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Environmental & Community Planning

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November 2, 2023

Ms. Yumi Miyata
Waiʻanae Mountains Watershed Partnership
PO Box 893504
Mililani, HI 96789

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Kaʻala Farm Long-Range Conceptual Plan

Dear Ms. Miyata,

On behalf of Kaʻala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawaiʻi Revised Statutes, Chapter 343, and Hawaiʻi Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

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Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout



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Environmental & Community Planning

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November 2, 2023

Mr. Mark Tamaleaa
Camp Wai'anae
85-1508 Haleahi Road
Wai'anae, HI 96792

Subject: Early Consultation Request for Draft Environmental Assessment (DEA)
Ka'ala Farm Long-Range Conceptual Plan

Dear Pastor Tamaleaa,

On behalf of Ka'ala Farm Inc. (KFI), Townscape, Inc. is preparing a Draft Environmental Assessment, pursuant to Hawai'i Revised Statutes, Chapter 343, and Hawai'i Administrative Rules, Chapter 11-200.1. KFI, a non-profit organization that provides cultural and environmental educational programs for school children, families, and interested groups, is seeking to secure a General Lease from the State Department of Hawaiian Home Lands in order to pursue grants and other means to finance planned improvements for their farm identified in their Long-Range Conceptual Plan ("Project").

KFI is conducting early consultation to seek input from agencies, citizen groups, and individuals, which may guide the scope and preparation of the DEA, and/or may be affected by the proposed Project. Please find enclosed an Early Consultation Handout with a Project overview and location map for your review and comment. We are requesting comments no later than **December 1, 2023**, to be sent via mail or e-mail to:

Townscape, Inc.
Attn: Adam Strubeck
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

If we do not receive a response by this date, we will assume your agency or organization has no comments at this time. Please contact the undersigned with any questions you may have at (808) 550-3893 or via e-mail at adam@townscapeinc.com. Thank you in advance for your participation in the early consultation for this Project.

Sincerely,

Adam Strubeck
Planner

Enclosure: Early Consultation Handout

**HONOLULU FIRE DEPARTMENT
KA 'OIHANA KINAI AHI O HONOLULU
CITY AND COUNTY OF HONOLULU**

636 SOUTH STREET • HONOLULU, HAWAII 96813
PHONE: (808) 723-7139 • FAX: (808) 723-7111 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA



SHELDON K. HAO
FIRE CHIEF
LUNA NUI KINAI AHI

JASON SAMALA
DEPUTY FIRE CHIEF
HOPE LUNA NUI KINAI AHI

November 20, 2023

Mr. Adam Strubeck, Planner
Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, Hawaii 96813

Dear Mr. Strubeck:

Subject: Early Consultation Request for Draft Environmental Assessment
Ka'ala Farm Long-Range Conceptual Plan
85-1753 Wai'anae Valley Road
Wai'anae, Hawaii 96792
Tax Map Key: 8-5-005: 036

In response to your letter dated November 6, 2023, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires 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. Fire department access roads shall be in accordance with NFPA 1; 2018 Edition, Section 18.2.3.

Mr. Adam Strubeck, Planner
Page 2
November 20, 2023

3. 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 NFPA 1; 2018 Edition, Sections 18.3 and 18.4.
4. Submit civil drawings to the City and County of Honolulu's Department of Planning and Permitting (DPP). They will be routed to the Honolulu Fire Department as needed by the DPP.

The abovementioned provisions are required by the HFD. This project may necessitate that additional requirements be met as determined by other agencies.

Should you have questions, please contact Battalion Chief Jean-Claude Bisch of our Fire Prevention Bureau at 808-723-7151 or jbisch@honolulu.gov.

Sincerely,



CRAIG UCHIMURA
Assistant Chief

CU/MD:bh

POLICE DEPARTMENT
KA 'OIHANA MAKA'I O HONOLULU
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 • WEBSITE: www.honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA



ARTHUR J. LOGAN

KAHU MAKA'I

KEITH K. HORIKAWA
RADE K. VANIC
DEPUTY CHIEFS
HOPE LUNA NUI MAKA'I

OUR REFERENCE **EO-SH**

November 27, 2023

SENT VIA EMAIL

Mr. Adam Strubeck
adam@townscapeinc.com

Dear Mr. Strubeck:

This is in response to your letter of November 6, 2023, requesting input for the Ka'ala Farm Inc. long-Range Conceptual Plan in Wai'anae.

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

If there are any questions, please call Major Gail Beckley of District 8 (Kapolei, Wai'anae) at (808) 723-8400.

Sincerely,

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

GLENN HAYASHI
Assistant Chief of
Police Support Services
Bureau

U.S. Fish and Wildlife Service Recommended Standard Best Management Practices

The U.S. Fish and Wildlife Service (Service) recommends the following measures to be incorporated into project planning to avoid or minimize impacts to fish and wildlife resources. Best Management Practices (BMPs) include the incorporation of procedures or materials that may be used to reduce either direct or indirect negative impacts to aquatic habitats that result from project construction-related activities. These BMPs are recommended in addition to, and do not over-ride any terms, conditions, or other recommendations prepared by the Service, other federal, state or local agencies. If you have questions concerning these BMPs, please contact the Service's Aquatic Ecosystems Conservation Program at 808-792-9400.

1. Authorized dredging and filling-related activities that may result in the temporary or permanent loss of aquatic habitats should be designed to avoid indirect, negative impacts to aquatic habitats beyond the planned project area.
2. Dredging/filling in the marine environment should be scheduled to avoid coral spawning and recruitment periods, and sea turtle nesting and hatching periods. Because these periods are variable throughout the Pacific islands, we recommend contacting the relevant local, state, or federal fish and wildlife resource agency for site specific guidance.
3. Turbidity and siltation from project-related work should be minimized and contained within the project area by silt containment devices and curtailing work during flooding or adverse tidal and weather conditions. BMPs should be maintained for the life of the construction period until turbidity and siltation within the project area is stabilized. All project construction-related debris and sediment containment devices should be removed and disposed of at an approved site.
4. All project construction-related materials and equipment (dredges, vessels, backhoes, silt curtains, etc.) to be placed in an aquatic environment should be inspected for pollutants including, but not limited to; marine fouling organisms, grease, oil, etc., and cleaned to remove pollutants prior to use. Project related activities should not result in any debris disposal, non-native species introductions, or attraction of non-native pests to the affected or adjacent aquatic or terrestrial habitats. Implementing both a litter-control plan and a Hazard Analysis and Critical Control Point plan (HACCP – see <http://www.haccp-nrm.org/Wizard/default.asp>) can help to prevent attraction and introduction of non-native species.
5. Project construction-related materials (fill, revetment rock, pipe, etc.) should not be stockpiled in, or in close proximity to aquatic habitats and should be protected from erosion (*e.g.*, with filter fabric, etc.), to prevent materials from being carried into waters by wind, rain, or high surf.
6. Fueling of project-related vehicles and equipment should take place away from the aquatic environment and a contingency plan to control petroleum products accidentally spilled during the project should be developed. The plan should be retained on site with the person responsible for compliance with the plan. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of accidental petroleum releases.
7. All deliberately exposed soil or under-layer materials used in the project near water should be protected from erosion and stabilized as soon as possible with geotextile, filter fabric or native or non-invasive vegetation matting, hydro-seeding, etc.

Appendix B

Archaeological Work at the Cultural Learning Center at Ka'ala & Two Adjacent Small
Parcels

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**ARCHAEOLOGICAL WORK
AT THE CULTURAL LEARNING CENTER AT KA‘ALA
&
TWO ADJACENT SMALL PARCELS**

[TMK 8-5-05:6, 7, 36]

Ross Cordy
Hawaiian-Pacific Studies
University of Hawai‘i – West O‘ahu

January 2013

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INTRODUCTION

This is a summary of archaeological findings at the Ka‘ala Cultural Learning Center in the southern half of the upper Wai‘anae valley (Figs. 1-4). This report covers the 97 acre property that Ka‘ala Farms Inc. leases from the Department of Hawaiian Homelands (DHHL) (TMK: 8-5-05:36), Ka‘ala Farms’ own, adjacent parcel (TMK: 8-5-05:7 of 9 acres) that is located on the Lualualei-side of the Center’s dirt access road, and a 3.3 acre City and County of Honolulu Board of Water Supply parcel on the Mākaha-side of the Center’s dirt access road (TMK: 8-5-05:6). Figure 3 shows the location of these parcels.

When one turns off the narrow paved road of the upper valley into the Ka‘ala Cultural Learning Center, you drive about 100 or so yards down a dirt access road to a larger bus parking lot area next to Honua Stream. The City & County parcel is on one side and Ka‘ala’s parcel is on the other. Ka‘ala’s parcel is being planted in native trees and shrubs, and is often called “The Kīpuka.” The City & County parcel is overgrown with grass, koa haole, and other trees; but as will be seen, it includes one of the most architecturally impressive irrigated kalo archaeological sites that I have seen on O‘ahu. From the bus parking lot, the dirt road crosses Honua Stream and swings around to a small upper parking lot adjacent to two rough wood houses, the former thatched hale (burnt down in the recent wildfire) and the actively cultivated irrigated kalo fields that have made Ka‘ala Farms so well known in cultural, educational and other circles. All of this land above the stream and around the houses is the DHHL parcel. Most of the parcel is a broad, gradually descending slope. But on the southeast (Lualualei-side), the boundary is the top of the Kaua‘ōpu‘u ridgeline, with the currently dry Kaua‘ōpu‘u Stream at the base of the ridge within the parcel. From Kaua‘ōpu‘u Stream across to Honua Stream to the northwest (Mākaha-side), the broad slope is present. A stone wall extends across the up-valley side of much of the parcel. Honua Stream (joined by Hiu Stream) curves towards Lualualei and forms the seaward part of the slope and parcel in this area. A narrow dog-leg of the parcel heads down-valley between Honua Stream and the base of Kaua‘ōpu‘u Ridge. The stream is joined by Kūmaipō Stream, and together the joined streams head seaward a bit farther and are joined by Kaua‘ōpu‘u Stream. Then all the joined tributaries flow seaward as Kaupuni Stream. The DHHL parcel goes farther down-valley along Kaupuni Stream as a narrow strip and emerges on the Lualualei-side of the paved access road, roughly across from the old Waianae Valley Ranch buildings, beyond where Punana‘ula Stream also joins the main stream. This report does not cover this lower strip, as we have never surveyed it.

THE ENVIRONMENT & TERRAIN

These parcels are all in the upper valley of Wai‘anae, actually at the mouth of the southern upper valley – the upper valley being separated into northern and southern parts by the small cone-shaped hill called Kōleali‘ili‘i. The parcels are between the 400 – 560 foot elevations. Rainfall here is above 40 inches per year. These parcels are where several upper valley tributary streams join, and then flow seaward out of this area as the combined Kaupuni Stream, which once flowed year-round all the way to the sea. These tributaries are Honua and Kaua‘ōpu‘u streams, which come out of the southern upper valley, and Hiu, Kūmaipō and Punana‘ula which come out of the northern upper valley and run across the valley to join the other tributaries. All these streams once flowed year-round. Today, most are dry – tapped initially by the plantation and today by the Board of Water Supply.

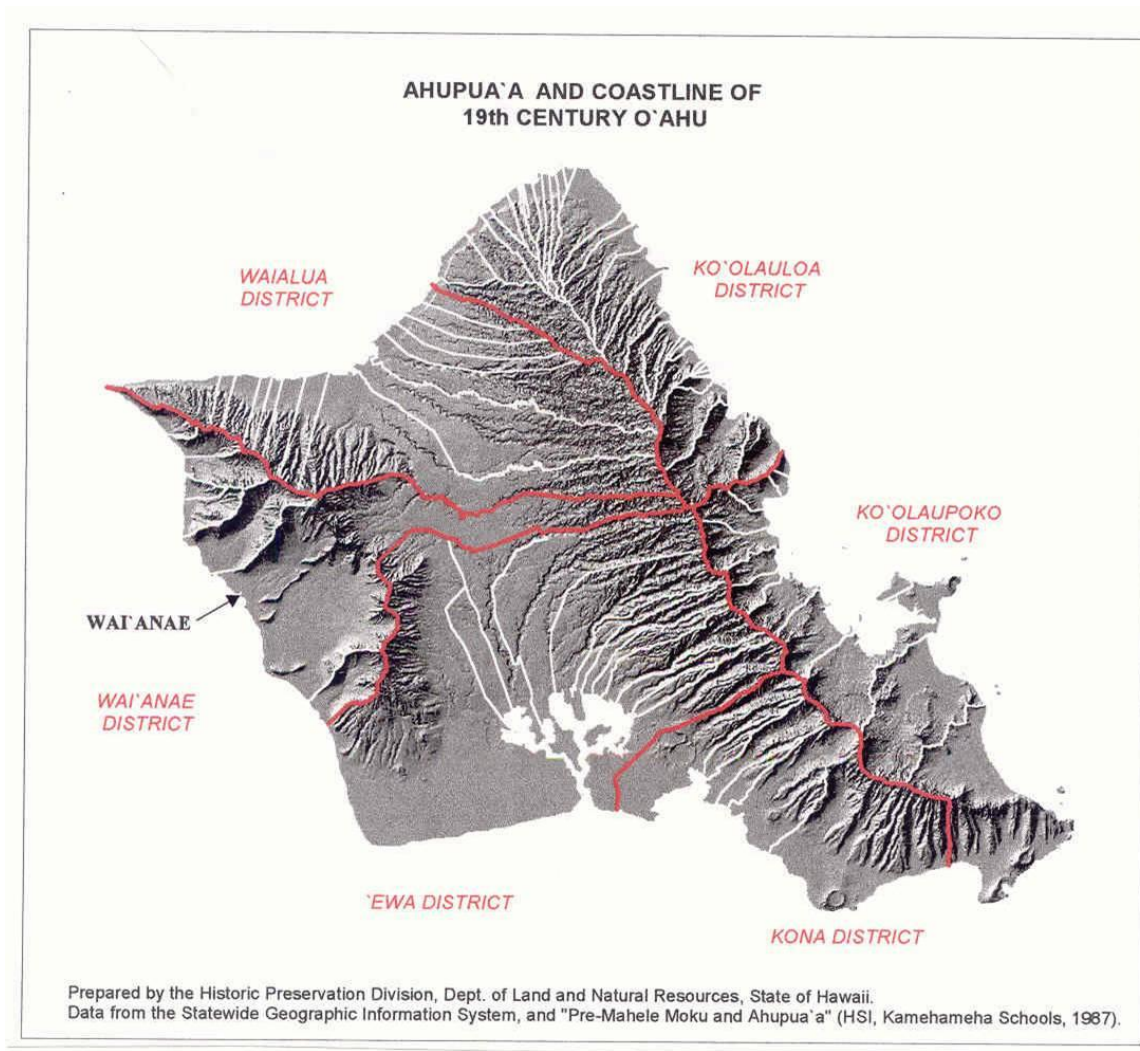


Figure 1. Location of Wai'anæ Valley on west coast of O'ahu.

[illegible]

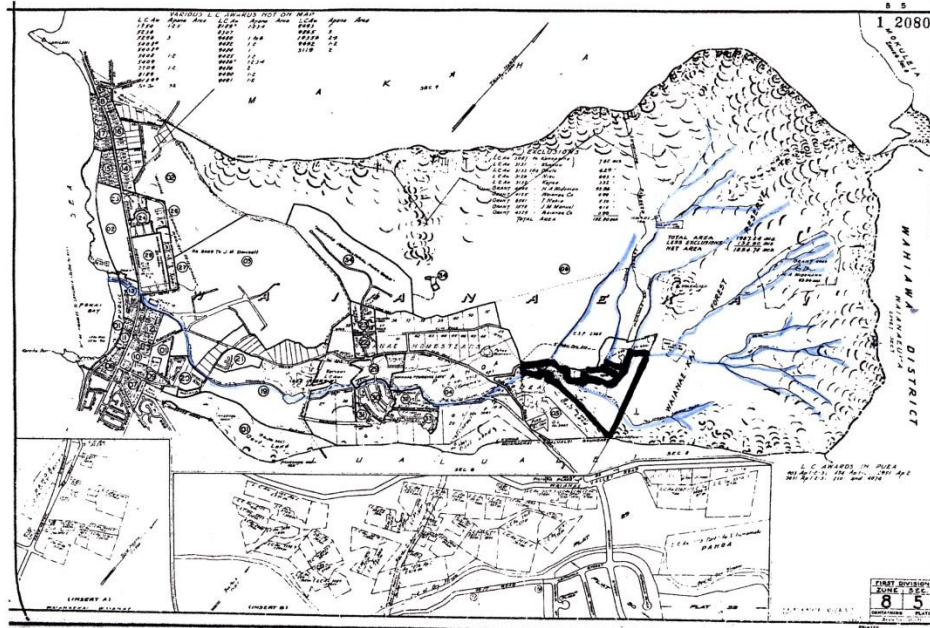
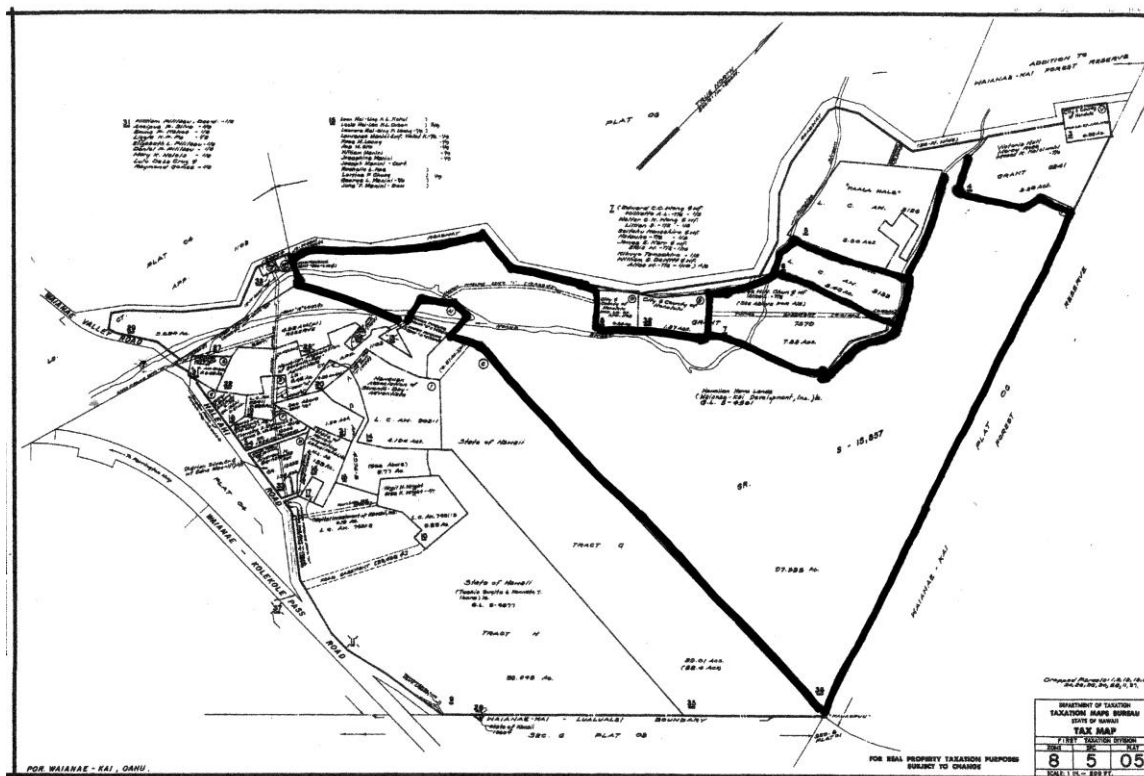


Figure 3. TMK Map 8-5, showing the location of the parcels and tributary streams in the upper valley.

Figure 4. TMK Map 8-5-05, showing the large DHHL parcel (36) and the City & County parcel (6) and Ka'ala parcel (7) coming off the bend in the paved access road in the center.



The terrain of these parcels falls into roughly four areas, ignoring the above-noted dog-leg. One is the wide, gradual slope on the DHHL parcel between Honua and Kaua‘ōpu‘u streams. The current houses and former hale on the parcel are on a slightly higher point on the slope near the upper center of the parcel. There is another slightly higher area located about halfway between the house-hale rise and Honua Stream – smaller and against the up-valley wall. There are also several slightly lower natural points in the terrain, running lineally from up-valley areas. Also, a short distance beyond where the dirt road crosses Honua Stream, the stream starts to swing down-valley. A low, narrow flat area is present along the Lualualei-side of the stream here (before it joins with Kūmaipō). This flat area is below the broad slope of the parcel. The wide slope above heads seaward, narrows and ends at the joining of Kūmaipō and Kaua‘ōpu‘u streams with Honua.

A second area is at the base of Kaua‘ōpu‘u ridge. Here, there is very little flat land. There is one very narrow section of flat land running along the base of the ridge alongside Kaua‘ōpu‘u Stream in the down-valley part of the DHHL parcel – across from where the wide slope dramatically narrows.

A third area is the steep ridge slope itself.

The fourth area includes Ka‘ala’s and the City & County’s parcels along the dirt access road leading into the Cultural Learning Center. These two parcels are on a gradually descending slope running from the Mākaha-side of the upper valley towards the Lualualei-side. This slope is flanked by Honua Stream on the up-valley side and by the now dry bed of Kūmaipō Stream on the down-valley side (the latter located just within the entry gate into the Center, running parallel to the paved upper valley road as it turns and goes farther up-valley). The slope actually extends farther across the upper valley between Kūmaipō and Hiu Stream, which joins Honua Stream just at the southwest corner of the DHHL parcel. This slope includes another private parcel next to the City & County parcel (TMK: 8-5-05: 5) and then crosses the paved access road and becomes the low ridge that the paved road ascends up into the Forest Reserve and to Waianae Well I. It is flanked by Kūmaipō and Hiu streams all the way up to the Well. The lower gradual sloping parts of this terrain area, however, extend from the Ka‘ala parcel through the City & County and adjacent private parcel and just across the paved access road. [Note: This private parcel adjacent to the City & County parcel was bulldozed in the 1990s, and much of its border with the City & County parcel is a high boulder-fill facing.]

ARCHIVAL INFORMATION

Some archival information is available for the DHHL parcel and for the two parcels along the dirt entry road.

This information begins with the 1840s Māhele land records. There were only five commoner Land Commission Awards (LCAs) in the upper valley. Wai‘anae valley had many awards, but they were all in the middle and lower valleys. This paucity of awards in the upper valley is common in many areas of the Islands. Usually it is associated with abandonment of the upper valleys beginning in the 1830s-1840s due to depopulation and emigration down-valley or to Honolulu (e.g., Cordy 2001; Naboa 2009).

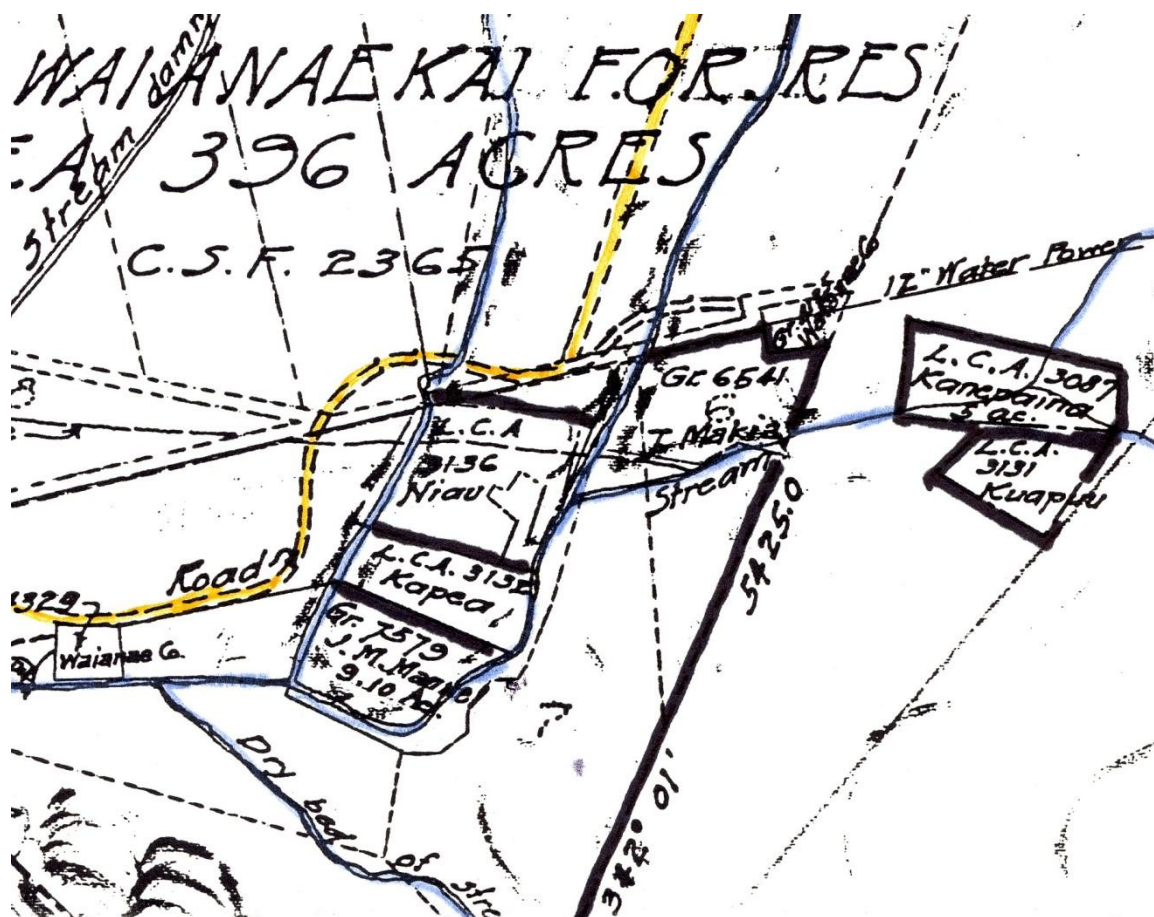


Figure 5. Map of the Ka‘ala area, showing LCA Awards and Grants. The yellow “Road” approximates today’s paved access road. To the right off the bend marked “Road” is today’s dirt access road into the Cultural Learning Center. LCA 3132 to Kaupea (the City & County parcel) is above this dirt road, and Gr. 7579 to J.M. Manuel is below it. LCA 3136 to Niau is above LCA 3132. The stream to the left of these parcels is Kūmaipō; to the right is Honua. The black line with “5425.0” is the back boundary of the DHHL parcel. Two LCAs are up Honua Stream to the right (LCA 3087 and 3131).

Four of the upper Wai‘anae LCAs are in or near these parcels at Ka‘ala; the other is in the northern upper valley near Waianae Well I. The City & County parcel was LCA 3132 awarded to Kaupea, and the adjacent private parcel was LCA 3126 to Niau (Fig. 5). Up Honua Stream just inland of the DHHL parcel were two additional LCAs – LCA 3087 to Kanepaina and LCA 3131 to Kuapuu – both now City & County parcels. Information on these awards is in the land claims documents (Native Register n.d.,4:44-45, 58) and supporting testimonies (Native Testimonies n.d., 9:403, 407; Foreign Testimonies n.d., 9:286-287) of 1848, the official Awards Books of the early 1850s (Award Books 6:228 for Kaupea), and the Indices of Awards (1929) compiled in the early 20th Century. The records contain information such as how the claimed parcels were used, names of mo‘o within the parcels (mo‘o being sets of irrigated kalo fields, lo‘i being one field), adjacent named mo‘o, adjacent land holders, the ‘ili of the claimed parcels, and sometimes adjacent ‘ili. All four of these parcels were single pieces, predominantly in irrigated kalo – claimed as mo‘o. Each had kula land, or dryland farm land (translated in some of the State Archives records as “pasture”). No houses were mentioned, but as these individuals only received these single parcels and as similar awards often included a house, it is likely each had houses on these parcels. These records indicate the number of irrigated kalo fields in these parcels. The City & County parcel (LCA 3132 to Kaupea) had “66 patches” (Native Testimony 9:407). The adjacent private parcel (LCA 3126 to Niau) had “24 patches” (Foreign Testimony 9:286), and the up-valley LCAs to Kanepaina (LCA 3087) and Kuapuu (LCA 3131) had 28 and 31 patches, respectively (Native Testimony 9:403).

The City & County (LCA 3132) and adjacent private (LCA 3126) parcels were both in the ‘ili of Kaapi – Kaape in the Native Register and Foreign Testimonies, Kaope in the Native Testimonies, and Kaapi in the Awards Books. ‘Ili were subdivisions of an ahupua‘a, minimally consisting of house and farm lands. This information suggests that ‘ili Kaapi probably also included the Ka‘ala-owned parcel on the descending slope just below these parcels, which also was between Honua and Kūmaipō. So ‘ili Kaapi is likely to have run down this slope across the front of the southern upper valley. Interestingly, across the kahawai (stream) upvalley of LCA 3126 and LCA 3132 was the ‘ili identified as Kaope 2 (Kaapi 2). This seems to correspond with at least half the DHHL parcel above Honua Stream. It might also have extended to where the Rosas houses are, for the up-valley LCA 3087 to Kanepaina identifies the ‘ili Kaape on its seaward edge. The two up-valley LCAs were in the ‘ili of Leleakoe.

Again, other place names are associated with these LCAs. The kula (dryland field area) of Pohakuawaawa was on the down-valley edge of both LCAs 3132 and 3126. This would be the area right across the paved access road in the former Waianae Valley Ranch. Also, LCA 3126 to Niau had its irrigated kalo fields in two named sets (mo‘o) – mo‘o Pukoa and Wainee (Peekoa mooaina in the Foreign Testimonies and Awards Books). LCA 3132 (the City & County parcel) had three named mo‘o in the Native Testimonies (Kahaka or Kahuka, Kekio, and Kanaaa) (Native Testimony 9:407; Foreign Testimony 9:286-7).

Again, most of this information does not directly refer to the DHHL parcel, except suggesting all or part of it was in ‘ili Kaapi 2. However, adjacent mo‘o are named on every side of the up-valley LCAs, clearly showing irrigated kalo land right around these parcels and just behind the DHHL parcel – and almost certainly in the DHHL parcel.

There were two grants in this area. Typically, grants were Government land that were sold to individuals or groups after the Māhele, beginning in the early 1850s. Grant 7579 to J.M. Manuel is the Ka‘ala parcel along the dirt access road into the Learning Center. Grant 6541 to T. Makia is the Rosas’ parcel located right across Honua Stream on the north border of the DHHL parcel and next to the upper part of LCA 3126 to Niau across Hiu Stream. I have not researched either grant. Typically, grants provide little information other than when the land was sold and the metes and bounds. But the latter sometimes includes place names. However, from the above LCA information, it seems likely that both these parcels contained irrigated kalo land and dryland farm land, and quite possibly a house area.

The next source of information that I have seen is from M.D. Monsarrat’s 1878 field notebook, which contains his notes while producing an 1878 map of the upper valley (Monsarrat 1878a). For the upper valley, his notebook contains very little information – only two pages under the title “Head Waianae Valley.” It includes some triangles with survey shot calculations on one page and a sketch of the upper valley on the other. The sketch is very skimpy. It seems to show three houses at the front of the southern upper valley – one in the general area of LCAs 3087 and 3131 behind the DHHL parcel, one near the Rosas’ parcel, and one slightly more seaward. This only shows that a few houses were still present at the front of the southern upper valley in 1878.

Monsarrat’s actual 1878 map shows the start of construction of boundary walls out on the Crown lands that were being leased for ranching (Monsarrat 1878b). In 1879-1880 the Waianae Plantation was created. Bits and pieces of other records indicate that the Waianae Plantation controlled the upper valley Crown lands, using them as ranch lands (Honolulu Advertiser 1931). By the 1890s, some of the walls were being used to keep cows out of the northern upper valley, where the plantation was attempting to plant coffee. It is likely that walls were edging the ranch lands at the end of the 1890s, including across the front of the southern upper valley (where they are visible across from the Ka‘ala entry road along the former Waianae Valley Ranch border). Across the front of the southern upper valley, the 1878 map also identifies the LCAs of Kaupea and Niau, a smaller walled area in the vicinity of the grant at Rosas, and an even smaller square, walled area more seaward. Sections of walls seem to be shown around all of these areas (Fig. 6). Perhaps they had been walled up to keep cattle out. This map also shows the Kūmaipō Trail, an old pre-European trail which ran up-valley to these LCAs and then swung across the mouth of the upper valleys and over into the back of Mākaha ahupua‘a.

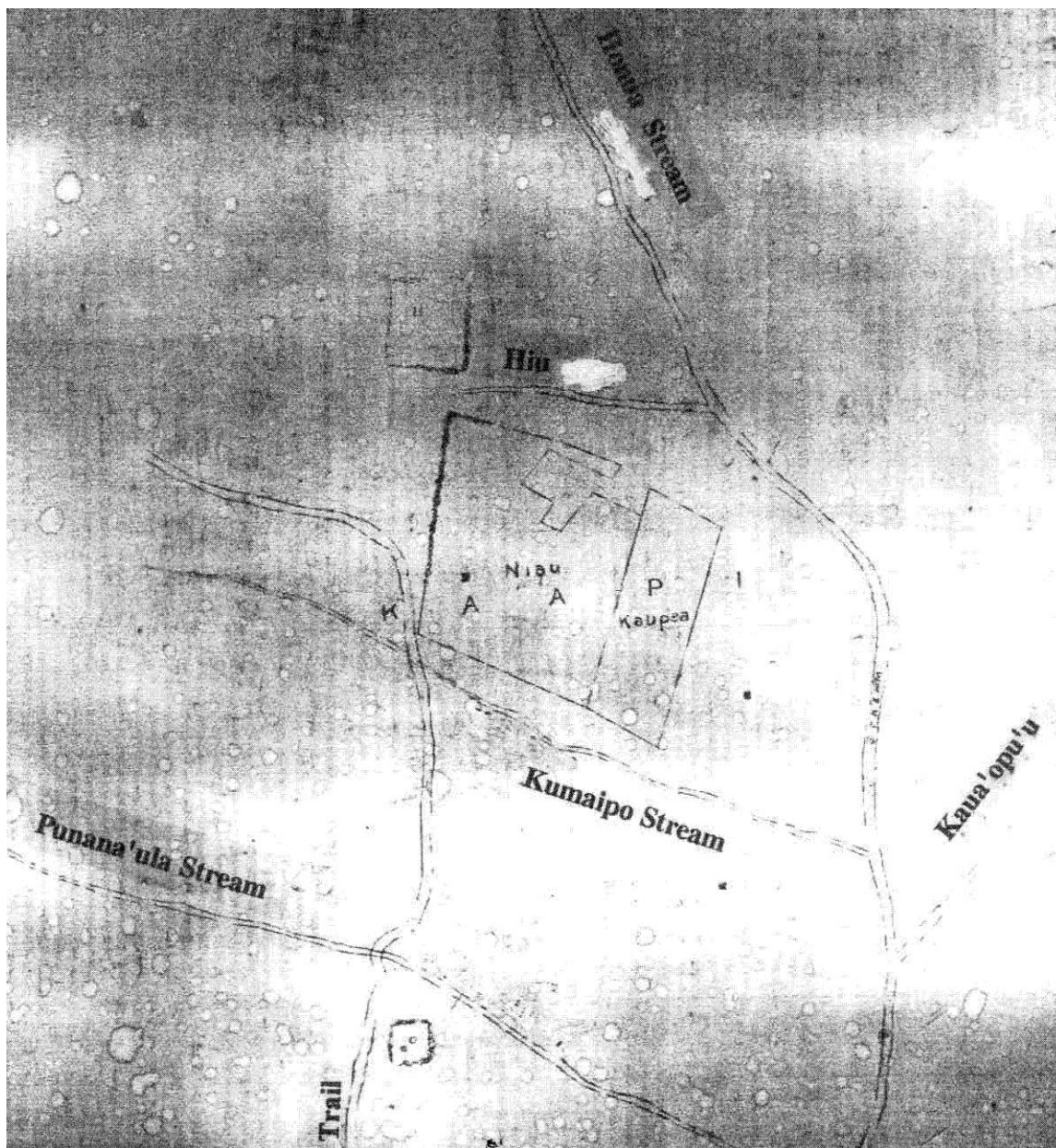


Figure 6. Portion of Monsarrat 1878 map of Wai'anae showing the front of the southern upper valley. Today's dirt access road into the Cultural Learning Center runs along the right edge of the LCA to Kaupea that is shown in the picture. The walled square near the label Hiu (Hiu Stream) is about at the Rosas' grant location. The "Trail" [wording my insert] seems to mark the older route of the Kūmaipō Trail.

The next source of information is a 1906 map that Monsarrat prepared for the Territory of Hawaii's Survey Office, documenting the Forest Reserve lands. It includes all the LCA parcels noted above and the two grants. Importantly, it shows areas (bounded by dashed lines) as lands "Formerly in Taro" (Monsarrat 1906). It identifies the entire slope of the DHHL parcel between

Honua and Kaua'ōpu'u Streams (down to their joining) as land "Formerly in Taro" (Fig. 7). The map also shows a continuation of these lands "Formerly in Taro" above Ka'ala Farms between the two streams, totaling 104 more acres – as well as the presence of the two LCA Awards along Honua Stream not far above Ka'ala Farms (LCA 3131 to Kuapuu and LCA 3087 to Kanepaina). Nothing else is shown within this slope, nor is anything identified along Kaua'ōpu'u Stream or up the Wai'anae side of Kaua'ōpu'u Ridge – either in the DHHL parcel or in the land behind Ka'ala Farms. However, this 1906 map also shows lands on the slope between Honua Stream and Kūmaipō Stream as being "Formerly in Taro," including the Ka'ala, City and County (LCA 3132), adjacent private (LCA 3126) parcels and continuing up the slope between Kūmaipō and Hiu streams. No houses are shown in any of these parcels, but then again no houses are shown anywhere on this map.

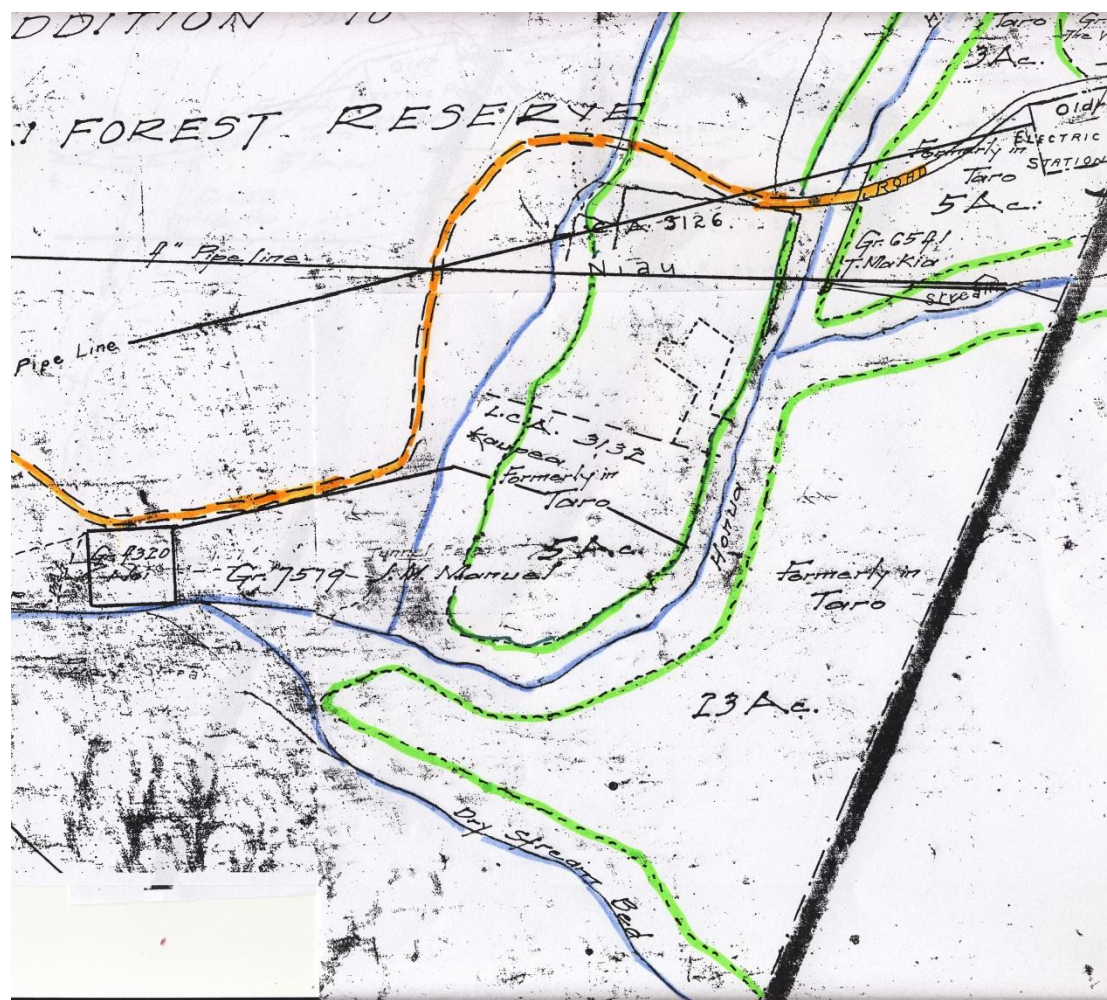


Figure 7. Portion of Monsarrat's 1906 map. Solid black line is the DHHL parcel's back wall. I have colored the edges of land "Formerly in Taro" green, with 3 such areas: on the DHHL parcel, immediately above on Grant 6541, and the slope running down in the center bounded on the right by Honua Stream and on the left by Kūmaipō and containing LCA 3126 (Niau), LCA 3132 (Kaupea) and part of Gr. 7579 (Manuel).

Two last sources refer to land use in this area in the 1930s, prior to World War II. One is E.S.C. Handy's *Native Hawaiian Planter* volume in the Bishop Museum's Bulletin series (Handy 1940), reworked and republished in 1972 (Handy and Handy 1972). Handy was part of the Museum's Anthropology Department, and these publications are based on his 1930 fieldwork and interviews. He saw abandoned irrigated kalo terraces in Wai'anae's upper valley and possibly middle valley, and he interviewed Native Hawaiian residents and obtained names of terrace sets (likely mo'o names). He did apparently collect such names in the vicinity of the Ka'ala parcels (above and below the then "present power house"). None are presented in the volumes, but are likely to be in his notes in the Museum's library. But directly relevant is the following comment: "A short distance below the power house a few terraces [were] still cultivated by Hawaiians [in 1935]" (Handy and Handy 1972:468). This suggests that a few families across the front of the southern upper valley were still planting kalo. Maybe not all the land was "formerly in taro."

The second source for this period was an elderly female informant that Aki Sinoto and Linda Gallano spoke to in the early 2000s as part of the Wai'anae High School's Hawaiian Studies Program. The woman was related in some manner to the Manini family, members of that family having a grave yard along the upper valley's paved road, not far seaward of the entry into the Cultural Learning Center. She indicated that in the early 1900s a Chinese family (Ah Ping) were farming the former Manuel grant parcel (Ka'ala's parcel along their dirt access road) – farming it in modern vegetables. Also, the family had a house in the bus parking lot area. I was not present at this interview, but as I recall the summary of it, a Hawaiian family lived on the City & County parcel and farmed there. By the 1940s, neither family was still using these parcels.

ARCHAEOLOGICAL WORK

Table 1 lists archaeological work that has been done in these parcels. The bulk of the work has been done since 1999 by either the Wai‘anae High School’s (WHS) Hawaiian Studies Program (early on under Aki Sinoto’s or my direction, more recently solely under my direction) or the University of Hawai‘i at West O‘ahu (under my direction). This is part of the larger upper Wai‘anae valley research program that has been ongoing since the late 1990s. None of the work for these parcels has yet been written up in a professional format. Some student papers by UH West O‘ahu students and one draft paper and one brochure by the WHS Hawaiian Studies Program exist. It is anticipated that professional reports on this work will be prepared by the end of 2013.

Table 1
List of Archaeological Work in these Parcels

Year	Supervisor	Nature of Study
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DHHL Leased Parcel [TMK 8-5-05: 36]

1979	Bishop Museum (Aki Sinoto)	Reconnaissance. Identified areas with archaeological features & made brief descriptions & sketch maps.
1979-2000	Ka‘ala Farms (Eric Enos)	Artifact collections over the years (47 items) ¹ [Photo documented by UHWO students -- Ballenti (2006) and Mettler (2008), under Cordy’s supervision. A final photo document-tation report is still to be prepared.]
1999	Wai‘anae High (WHS) Hawaiian Studies (Aki Sinoto)	Mapping/test excavation, Kaua‘ōpu‘u Rockshelter [Spring 1999] [draft report and artifact list were filed at WHS] ²
1999	WHS Hawaiian Studies (Cordy)	Plane table map of active lo‘i. [draft field map]
1999	WHS Hawaiian Studies Interns (Cordy)	Reconnaissance Kaua‘ōpu‘u stream flats [Cordy fieldbook 4/16/1999]
1999	WHS Hawaiian Studies Interns (Cordy)	Reconnaissance of lower broad slopes [Cordy fieldbook 6/21/1999 & loose file 1999] (Ross Cordy) intern project]

Table 1 (contd.)
List of Archaeological Work in these Parcels

Year	Supervisor	Nature of Study
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DHHL Leased Parcel (contd.) [TMK 8-5-05: 36]

2000	WHS Hawaiian Studies (A. Sinoto)	Brochure for locations within parcel on Kaua'ōpu'u side [Pue'a Group 2000]
2001	WHS Hawaiian Studies (Cordy)	Mapping/test excavation of irrigated terraces on lower broad slope near dirt road and Honua Stream [Cordy fieldbook 5/3-5/10/2001, loose file of project, draft field map] ³
2001 2002	WHS Hawaiian Studies (Cordy)	Mapping of irrigated terraces planted in taro [Cordy fieldbook 5/17/2001, 8/22/2002, draft field maps]
2012	UH West O'ahu (Cordy)	GPS mapping of features across the broad slope (done by Kari Nishioka) Reconnaissance of entire broad slope. Detailed mapping of rise below former hale. Detailed mapping/excavation of small rise more towards Honua Stream along the upvalley wall (Dalani's wauke area) [Cordy fieldbook 4/2012, loose project file, draft maps] ³

Ka'ala Farms Parcel [TMK 8-5-05:7]

1999	WHS Hawaiian Studies Interns (Cordy)	Reconnaissance of area between Kūmaipō & Honua streams. [Cordy fieldbook 11/18/99]
1999- 2000	WHS Hawaiian Studies (A. Sinoto)	Brochure for locations within parcel. [Pue'a Group 2000]
2011- 2012	WHS Hawaiian Studies (Cordy)	Reconnaissance again after more extensive clearing and planting by Ka'ala Farms

City & County Parcel [TMK 8-5-05:6]

1996-	WHS Hawaiian Studies	Reconnaissance and test excavations.
1997	(A. Sinoto)	[Draft report & list artifacts were filed at WHS] ²

Table 1 (contd.)
List of Archaeological Work in these Parcels

Year	Supervisor	Nature of Study
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City & County Parcel (contd.) [TMK 8-5-05:6]

1999- 2000	WHS Hawaiian Studies (A. Sinoto)	Brochure for locations within site. [Pue‘a Group 2000]
2005	WHS Hawaiian Studies (Cordy)	Initial clearing and analysis of a few features. [Cordy fieldbook 3/3/2005]
2005	UHWO (Cordy)	Detailed mapping/excavation up-valley third of parcel. 4 test units. [Cordy fieldbook 4/16 – 5/7/2005, draft field map, & loose project file] ³
2006	UHWO (Cordy)	Detailed mapping/excavation middle third of parcel. 4 test units. [Cordy fieldbook 6/24 – 7/1/2006, field map, & loose project file] ³
2007	UHWO (Cordy)	Detailed mapping Honua Stream fringe. Excavation of 1900s era house on parking lot fringe. 2 test units. [Cordy fieldbook 6/2-6/23/2007, draft field map, & loose project file] ³

1. Ka‘ala artifact collection temporarily at UH – West O‘ahu for analysis (under Cordy’s care.
2. Collection of artifacts at WHS Hawaiian Studies Program.
3. Collection of artifacts at UH – West O‘ahu. Primarily basalt and volcanic glass flakes, but with early 1900s artifacts from the 2006 project.

Table 2 briefly describes the historic sites that have been found in these parcels. Seven sites have been documented (Fig. 8). Only five so far have State of Hawai‘i site numbers; two others have temporary numbers (soon to be resolved).

The two parcels along the dirt access road (TMK 8-5-05: 6, 7) have been thoroughly surveyed between Honua and Kūmaipō streams. Each parcel has a site that includes the entire parcel, excluding the Ka‘ala’s parcel’s (parcel 7) section seaward of Kūmaipō along the paved access road that has not been surveyed. Each of these parcels has not been completely mapped. The Ka‘ala parcel (parcel 7) has only remnant features along the streams, and the exact features

and locations have not been mapped. In contrast, the City & County parcel (parcel 6) has a completely intact and continuous site across its entire area – predominantly an irrigated kalo site. Three-quarters of this site (all the irrigated kalo fields and much of the kula area) have been mapped in detail, with test excavations. Only a small portion near the entry to the Cultural Learning Center has not been mapped in detail, but it has been checked, and features have been identified.

The DHHL parcel (TMK 8-5-05:36) has been thoroughly surveyed across its broad slope from Honua to Kaua‘ōpu‘u streams and down to the joining of those streams. Two sites are on this slope, and portions have been mapped in detail and test excavated. The entire area has been sketch mapped. Additionally the stream flats along Kaua‘ōpu‘u at the base of Kaua‘ōpu‘u Ridge have been completely surveyed, with two sites found. One has been mapped in detail and test excavated; the other has only been sketch-mapped. Altogether, four sites are documented within the DHHL parcel. Again, the DHHL parcel seaward of the joining of Kaua‘ōpu‘u and Honua streams has not been surveyed.

No radiocarbon dates have yet been processed from these sites. It is hoped to obtain grant funds to do so in the next several years. Again, professional level reports of this work are anticipated to be completed by the end of 2013.

Table 2
Historic Sites in the Parcels

Sites	Description	Function	Age
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DHHL Leased Parcel [TMK 8-5-05: 36]

Between Honua & Kaua‘ōpu‘u Streams

5965	Descending rectangular soil areas with downslope stone terrace facings (descending terraces). Run across slope between Honua & Kaua‘ōpu‘u streams.	Irrigated kalo fields	Pre-European
		1800s	
		1980s-present	
	Some terrace sets separated by descending low walls or soil areas.	Boundary features	Pre-European, early 1800s
	Several descending narrow, irregular-sided, cut depressions	‘Auwai (canals)	Pre-European, 1800s

Table 2 (contd)
Historic Sites in the Parcels

Sites	Description	Function	Age
<u>DHHL Leased Parcel (contd.) [TMK 8-5-05: 36]</u>			
<u>Between Honua & Kaua'ōpu'u Streams</u>			
5965 (contd)	Higher point half-way between hale of Ka'ala Farms and Honua Stream with short terrace lines. Also w/ platforms with uprights, some cement work, & plastic drip lines	Dryland fields Ka'ala features	Pre-European & possibly 1800s 1990s-2000s
5750	Low rise with houses & former hale of Ka'ala Farms. Small remnant terrace facings, pavings. Domestic artifact finds. Ka'ala structures	Permanent housing 1980s-present	Pre-European & possibly 1800s
5756	Wall across upvalley side of parcel	Boundary	Late 1800s
<u>Along Kaua'ōpu'u Stream (Lualualei-side)</u>			
Site T-1	Narrow set of descending rectangular soil areas with downslope stone terrace facings – along Lualualei-side of Kaua'ōpu'u Stream.	Irrigated kalo fields	Pre-European
Site T-2	Rockshelter along Kaua'ōpu'u Stream adze manufacturing	Temporary habitation &	Pre-European
<u>Ka'ala Farms Parcel [TMK 8-5-05: 7] (The Kīpuka)</u>			
5755	Remnant facings along Honua and Kūmaipō Streams. Some remnant terraces only on Stream edges.	Remnants of irrigated kalo fields	Pre-European 1800s

Table 2 (contd.)
Historic Sites in the Parcels

Sites	Description	Function	Age
<u>City & County Parcel [TMK 8-5-05:6]</u>			
5751	Descending rectilinear soil terraces with stone facings. 1900s	Irrigated kalo fields -1800s, early	Pre-European
	2 small platforms w/upright stones -early 1800s	Agricultural shrines	Pre-European
	Mounds, clearings and irregular terraces with some walls.	Dryland fields -1800s	Pre-European
	Large retaining wall/terrace along Access road side of site.	Part of kalo field water control, boundary feature	Pre-European- 1800s
	Scattering of artifacts & associated deposits on edge of terrace next to bus parking lot and on lowest terrace near Honua.	Permanent house	Early 1900s
	Cemented features (intake channel off Honua Stream, one circular sub-surface feature, several small square post foundations.	Water channel, Pond, Uncertain (water catchment?)	Early 1900s
	Rectangular stone-faced pit near Honua Stream	Lua (outdoor privy)	Early 1900s

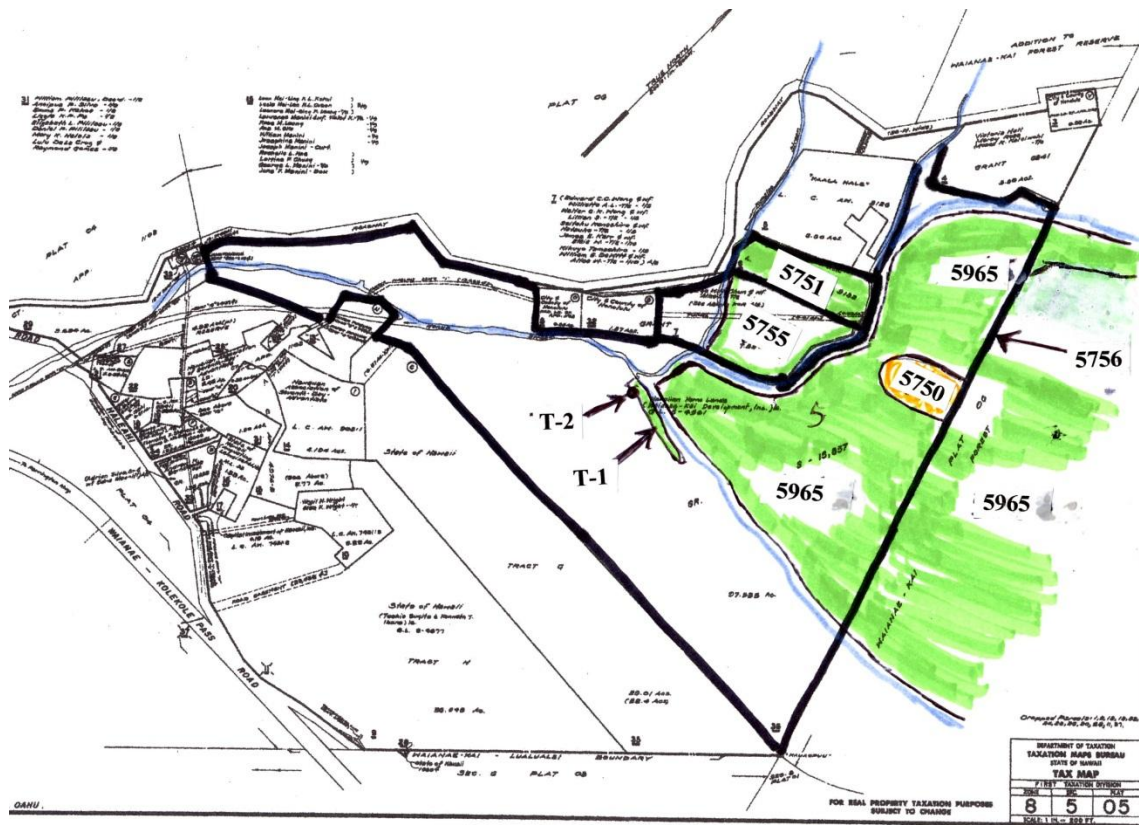


Figure 8. Site Location Map, Ka'ala Farms Area [draft]. The green areas are predominantly irrigated kalo terraces. Site 5965 continues up-valley to the lower right. 5755 has terrace and facing remnants only along the edges of Kūmaipō and Honua streams. 5756, the back wall of the DHHL parcel, today only is present from 5750 to Honua Stream. Kaua'ōpu'u Stream is the stream along the south edge at the base of Kaua'ōpu'u Ridge.

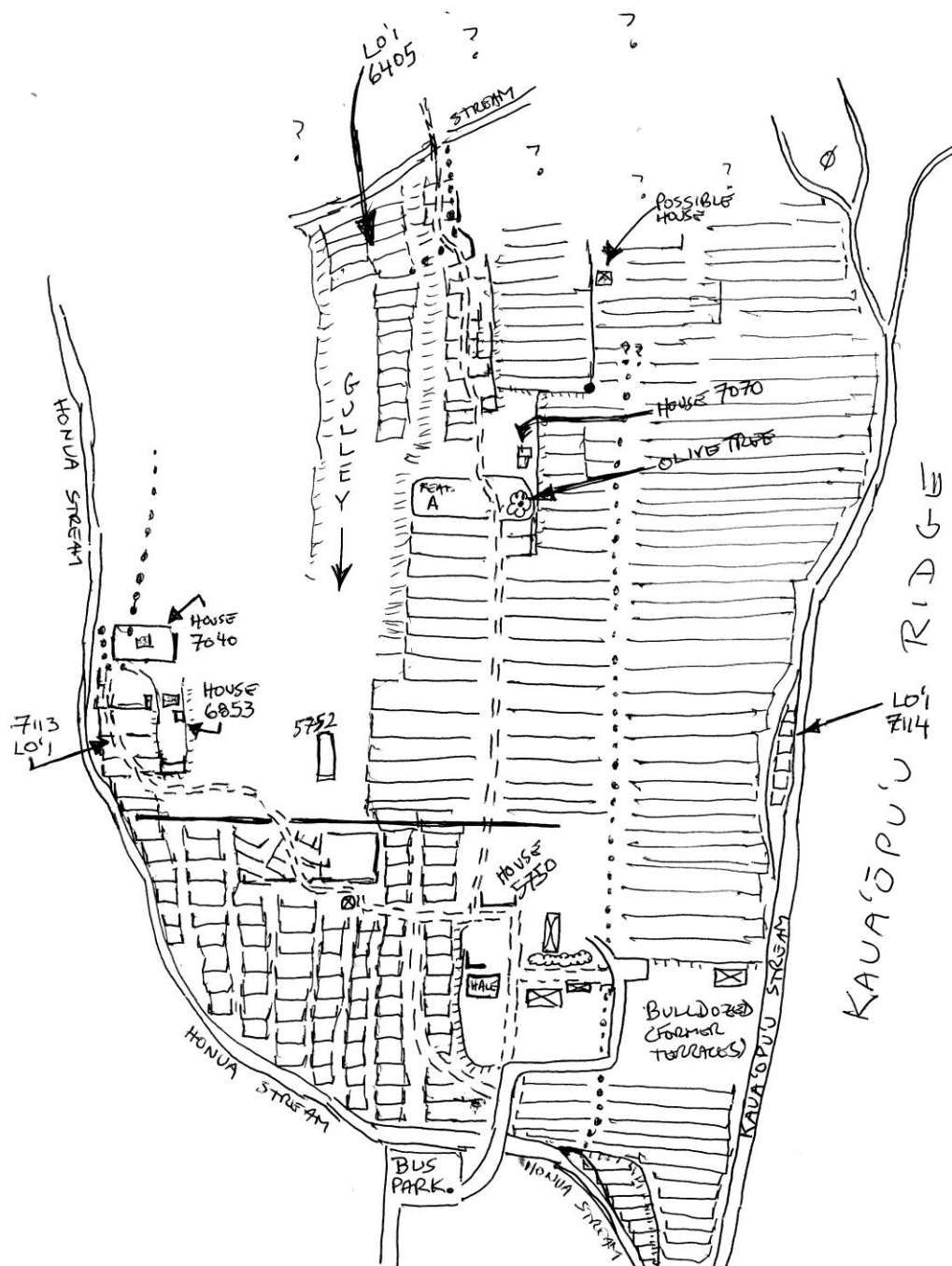


Figure 9. Sketch map, Site 5965. Black line running halfway across the center is the DHHL parcel's back wall (site 5756). The hale area is site 5750, a raised area once with permanent habitations. The empty rectangular area below the back wall halfway between the hale area and Honua Stream contains dryland fields on a slightly raised area (where Dalani Tanahy planted wauke in recent years). The upper extent of the site is as yet unclear. Terraces along Kaua'ōpu'u Stream in the Forest Reserve have more complicated patterns, as yet to be documented in detail. Dotted lines are irrigation canals ('auwai).

Site 5965 – Predominantly Irrigated Kalo Fields (Fig. 9)

The Monsarrat map clearly shows the entire slope area between Honua and Kaua‘ōpu‘u streams on the DHHL parcel, down to their joining, as “Formerly in Taro” (Monsarrat 1906) (Fig. 7). Archeological survey has shown that site 5965 closely matches the area that Monsarrat outlined, although the situation is a little more complex. The higher point where the former hale and the current houses sit seems to have been a permanent dwelling area in pre-European times and quite possibly into the 1800s. This has been given a separate site number, to be discussed shortly. There is another slightly higher point halfway between the hale area and Honua Stream (to the Mākaha-side) along the up-valley edge of this parcel. [This is Dalani Tanahy’s former wauke area, just upslope of the current platform with uprights.] Much of this area seems to have had dryland cultivation features probably dating to pre-European times into the early 1800s. It is considered a feature area within site 5965, to be discussed shortly. The rest of the broad slope is covered with irrigated kalo terraces. These terraces cover the entire slope from Honua Stream on the Mākaha-side to Kaua‘ōpu‘u Stream on the Lualualei-side. Typically, a terrace is a rectangular soil area with its length parallel to the slope. A stone facing is on the downslope edge, usually 4 stones high (ca. 0.6-1.0 meter). Often there are stone edgings on the sides of the terraces.

Site 5965 actually originates up-valley of the DHHL parcel in the Forest Reserve. Monsarrat shows this as 104 acres, all formerly in taro. However, it is more complicated with three areas of irrigated fields diverting water from different places along Honua Stream into three different descending terraces sections of this site. Not far above the back wall of the DHHL parcel, a dam was built across Honua Stream and water was diverted out into a canal that ran along the stream below a high bluff. This water was dumped into and flowed through a narrow set of single fields descending along Honua Stream adjacent to a low rise that has two permanent habitation sites (6853 and 7040). This canal and the narrow set of fields have been labeled 7113, but they are just part of 5965. Just as it reaches the DHHL parcel, the terrain flattens out. The water flow was then diverted across this broader terrain with descending terraces from Honua Stream out to below the small high point (the area of Dalani’s wauke area). Honua Stream was also dammed directly up-valley, up at the end of the trail that went by the Olive Tree. Some of this water went into a canal that led a short way down the “Olive Tree” ridge and split, one branch dropping water down into a shallow gulley running downhill on the Mākaha-side of the Olive Tree ridge. This gulley is full of descending terraces, which were given a separate site number, 6405. The canal dumped water into the upper terrace, and water then flowed down through the terraces. As this gulley flattens out, the terracing seems to disappear. The gulley is directly behind the small high point in the DHHL parcel (Dalani’s wauke area). However, the other branch of this canal sends water down the Olive Tree Ridge. On this flat ridge there is a higher set of terraces, with long lower sets extending out towards Kaua‘ōpu‘u Stream. Some of the water from the ridge was directed down into these lower terraces, but these lower sets likely have different water sources at their heads. However, this area from the Olive Tree Ridge all the way to Kaua‘ōpu‘u is a continuous terrace area. These terraces come down into the DHHL parcel splitting around the raised area where the hale are today. The terraces to the Mākaha-side of the hale area has been the focal point for modern irrigated kalo cultivation by Ka‘ala Farms for many years. Here the terraces have been put back into cultivation. On the Lualualei-side of the hale within the DHHL parcel, a sizable rectangular area within these terraces was bulldozed

in the late 1970s-early 1980s as part of Ka‘ala’s operations. It served as a fenced pasture in the late 1990s and more recently was being used for community farming. Below the hale area, these two areas of terraces reconnect, with terrace lines extending for long distances across the slope. These terraces continue down the narrowing slope to the joining of Honua, Kūmaipō and Kaua‘ōpu‘u Stream. They also drop down to a small set running on a stream flat along Honua before its joining with Kūmaipō.

In the DHHL parcel, the terraces between the raised area with the hale and Honua Stream tend to be arranged as descending sets of fields, 1-2 fields wide. These are separated by wider soil areas or low walls, which appear to be boundary features. These spatial sets of fields may well have been named mo‘o. One to three mo‘o were often held by a single household.

On the portions of the DHHL parcel between the hale rise and Kaua‘ōpu‘u Stream, such boundary features have not yet been identified. Here terraces are long continuous lines, unbroken by boundary features..

Additionally, there are irrigation canal features descending through the site 5965 terraces on the DHHL parcel. One long canal descends down a swale on the Lualualei-side of the Oliver Tree ridge, crosses down into the DHHL parcel and runs down along the Lualualei- side of the Ka‘ala hale (visible as a ditch with culverts under the dirt access road). It crosses the access road as it bends up to the hale and continues down through the terraces and drops into Honua Stream. This canal is not stone-lined and appears on first glance to be an erosion feature on the landscape. However, it quite clearly is a lineal canal running down the slope. There are also small sections of water control channels in the terrace area between the rise with the hale and Honua Stream – often intentionally channelizing water from one terrace area down into another.

Again, there is another slightly higher point halfway between the hale area (site 5750) and Honua Stream (to the Mākaha-side). This is Dalani Tanahy’s former wauke area, with a flat soil area below with a modern platform with an upright stone. Much of this area seems to have had dryland cultivation features -- short, one-two stone high terrace lines.

All the above features of this site are likely to date to pre-European times, and likely into the early 1800s. Overlain over some of these features are modern features from the activities of Ka‘ala Farms. The fields in cultivation have been dug deeper, with soil often piled over the original stone terrace facings. On the Lualualei side of the hale area, a sizable square area from the access road to the top of the Kaua‘ōpu‘u Stream drainage was bulldozed in the late 1970s or early 1980s. The small rise was planted in wauke within the last 10 years. Some areas (such as the small rise used to plant wauke) have plastic drip lines. There are a few cemented areas, usually to channel water.

Figure 9 is a sketch map of this site, and Figures 10-12 are photos. Detailed plane table maps have been made of portions of the terraces actively farmed and of the entire small high area. Wall measurements and compass bearings have been made of the terraces below on the



Figure 10. Site 5965. Irrigated kalo fields put back into cultivation by Ka'ala Farms Inc., descending next to the former hale. View looking up-valley. (R. Cordy photo)

Figure 11. Site 5965. Terraces below bulldozed area, facing Kaua'ōpu'u Ridge. Note drop from one terrace to another and top of stone terracing on edge of drop. (Townscape photo)





Figure 12. Site 5965, showing three descending terraces (flat soil areas) of some size. View down-valley from below bulldozed area. (Townscape photo)

flat along Honua Stream (before its joining with Kumaipo). The border of the site has also had GPS locations shot in. Excavations and detailed plane table maps have been done in the terraces near Honua Stream close to where the dirt access road crosses the stream and on the smaller high point.

Site 5750 – Permanent House Area

The higher point where the former hale and the current houses sit seems to have been a permanent dwelling area in pre-European times and quite possibly into the 1800s. This is based on the finds of 47 domestic artifacts over the years by Ka‘ala Farms – adzes, food pounders, ulumaika stones (Figs. 13-16). Some of these artifacts were found in initial bulldozing of the area. There are some remnant terrace facings on the up-valley and seaward end of the rise that may date back to this period. This likely site area matches the pattern of higher places near irrigated kalo fields in upper Wai‘anae valley having permanent houses. In this case, the older features have obviously been altered and overlain by features built by Ka‘ala Farms – the former hale and its platform, some terrace walls (notably facing the active lo‘i and along the trail by the hale), and the two modern housing structures.

features have been GPSed. The Ka‘ala artifact collection has been photo-documented by two UH – West O‘ahu students (Ballenti 2006; Mettler 2008), but I plan to prepare a more accurate and thorough final report.



Figure 14. The thatched hale of the Cultural Learning Center at Ka‘ala. It is within site 5750. Note the hale is on higher terrain above the lo‘i. (From Ka‘ala Farm Inc. 2000 Annual Report.)



Figure 15. Food pounder found at 5750. (Mettler 2008: Artifact K-1).

Figure 16. One of 25 ulumaika gaming disks found in the site 5750 area. (Ballenti 2006: Artifact K-15).



Site 5756 – Wall Across Back of DHHL Parcel

A higher stone wall runs along the back of the DHHL parcel from the trail going up the Olive Tree ridge over to near Honua Stream. Parts of the wall nearer the rise with the hale has had stones removed and is lower, but the size of this wall is evident in the sections nearer Honua Stream. There also seems to be a second wall as the stream is approached. This wall has not been measured, but it is easily 1.0 meter high and probably about the same in thickness. It may have once continued on from the rise with the hale to Kaua'ōpu'u Stream.

This wall clearly overlays the 5965 terraces, and was thus built later. It seems characteristic of boundary walls of the 1870s-1890s. It may be possible to date this wall more accurately by checking metes and bounds of the DHHL parcel from early recordings in the Bureau of Conveyances. Quite often pre-1880 descriptions note boundaries as stones or trees. Then post-1880 boundary descriptions mention survey shots along walls.

Site T-1 – Irrigated Kalo Fields along the Lualualei-side of Kaua'ōpu'u Stream

This site is at the base of base of Kaua'ōpu'u ridge on a stream flat along the Lualualei-side of Kaua'ōpu'u Stream. It is a set of about 10 rectangular soil terraces with low, downslope stone facings that descend lineally down the stream flat. This site does not appear on the Monsarrat map. It is likely to be pre-European in age and perhaps into the 1800s.

The site has only been sketch mapped.

Site T-2 – Rockshelter Work Site

On the last, downslope terrace of site T-1, embedded into the ridge, is a rockshelter. In 1999, Aki Sinoto supervised students from the Wai'anae High School's Hawaiian Studies Program in mapping and test excavation at this site. This work found large amounts of basalt flakes from stone tool manufacturing. Thus, this cave was a temporary habitation, a work site. Stone may have come from nearby, or it is possible that some of the basalt was brought to this rockshelter for additional working from just around the corner in Lualualei, where small temporary habitations (shelters) and adze flake quarrying areas are present.

Again, this site was excavated.

Site 5755 -- Ka'ala's Parcel Along the Cultural Learning Center's Access Road (The Kīpuka)

Archaeological reconnaissance of this parcel found no archaeological remnants, except for a few short sections on the stream edges and some stone facings along Honua and Kūmaipō streams. (The two streams flank the Kīpuka, Kūmaipō on the seaward side, and they join at the end of the parcel.)

The Monsarrat 1906 map shows this area “formerly in taro,” making it likely that this parcel was once covered in irrigated kalo terraces. However, an elderly informant told us about 2000 that this parcel was truck farmed by a Chinese family in the 1930s. Apparently,

preparation of the land for truck farming led to the destruction of any irrigated terracing that was on the parcel, except for the remnants along the stream edges.

A few artifacts have been found since 1997-1998, but not many. A coral food pounder was found amid stones on the bank of Kūmaipō, and an ulumaika game stone was recently found when digging a posthole.

Site 5751 -- The City & County's Parcel on the Other Side of the Cultural Learning Center's Access Road – Irrigated Kalo Fields & Dryland (Kula) Fields

This parcel was a LCA Award to Kaupea in the 1840s (LCA 3132). As seen, the Māhele land records for this parcel state Kaupea had “66 patches” (irrigated kalo) and kula or dryland farm land (NT,9:407). A house also seems likely. Monsarrat's 1906 map also lists it as formerly in taro.

This parcel has been intensively surveyed (mapped and tested). Aki Sinoto conducted mapping and test excavations with the Wai‘anae High School's Hawaiian Studies Program students in 1996-1997. In 2000, they prepared a brochure that interpreted spots within this site and other sites in nearby parcels (Pue‘a Group 2000). In this site today, there are wood squares with numbers (such as B-4) nailed to trees at key spots, with accompanying description in the brochure. From 2005-2007, I had three UH West O‘ahu Field Archaeology classes working in this site – plane table mapping two-thirds of the site and conducting test excavations. I also supervised some Wai‘anae High School's Hawaiian Studies Program student work in this site at that time.

Pre-European Contact and Early 1800s Features

The two-thirds of the parcel towards Honua Stream has a complicated set of irrigated kalo terraces – with water diverted out of Honua Stream into the upper corner of the site and descending down through terraced fields (often with stone channels in terraces focusing water flow, and with one case of a small diversion wall-like feature). The terraces are located at different levels. Some of these terraced fields are long and broad, two near Honua Stream with extremely large stones in the facings – some of the most impressive irrigated kalo terrace architecture that the author has seen on O‘ahu. Other terraces are long and very narrow. They descend down into lower fields, with the descent being terraced from two different directions. Then there is a very short dry stretch of land, and then another set of terraces coming down parallel to the slope into a lower area, with flanking terraces from the side. Water flow into this latter area came down from the adjacent private parcel, possibly from lateral flow across terraces from both Kūmaipō and Honua streams. All this area with irrigated kalo terraces has been plane table mapped in detail.

At each end of this irrigated kalo terrace area – along Honua Stream in a higher point of the site and on the seaward end on a terrace overlooking descending terraces – were two features interpreted as agricultural shrines. The one along Honua Stream is a roughly rectangular, low platform with an intentionally placed upright stone of unusual shape. The

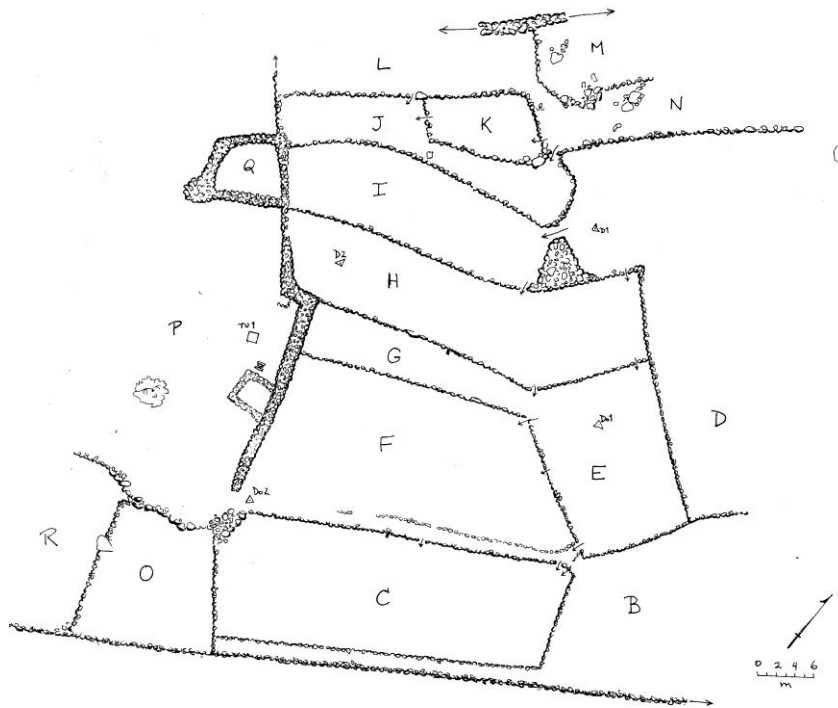


Figure 17. 2005 UH West O‘ahu Field Archaeology class plane table map of a portion of the irrigated kalo terraces in Site 5751. The lower wall is the retaining/boundary wall along the dirt access road into the Cultural Learning Center.

Figure 18. High, impressive irrigated field terrace facing in 5751. There is a field on top, one to the lower left, and one to the even lower right.



one at the other end of the terraces is a small rectangular platform with two fallen upright stones. The upright stones are archaeological indicators of religious use. The presence of these features on small structures associated with the irrigated kalo fields indicates that they were agricultural shrines for the family using these terraces.

The down-valley third of the parcel is higher, rising up to where Kūmaipō cuts a bluff. This area has dryland agricultural features – little stone mounds of different shapes, clearings, short irregular terraces, and some walls. We thought that perhaps a house site would have been in the seaward, Mākaha-side corner, which was a high point. However, several walk-throughs of this area did not clearly identify a house feature. This needs to be carefully checked one last time, to fully confirm the lack of a house structure with this site.

A large retaining wall runs alongside the access road, the down-slope side of this site and parcel. It is either retaining water flow, forming a boundary marker for the parcel, or quite possibly both.

The above irrigated kalo terraces, dryland agricultural features, and shrines are all likely to be pre-European Contact in age with continued use at least up until the 1850s, when Kaupea and his family received this parcel as a Māhele LCA award. The shrines may have no longer been used by the mid-1850s given general conversion to Christianity.

Early 1900s Features

Again, an elderly informant reported that the adjacent Ka‘ala-owned parcel was used by a Chinese family prior to World War II and that they had a house in the Bus Parking Lot area. I was told a summary of the interview, and my recollection was that she said the City & County parcel was used by a Hawaiian family up into the 1930s.

There were several features among the irrigated kalo terraces nearest Honua Stream that were found that clearly dated to this period. There were cemented features made with a grainy cement: at the intake area from Honua Stream, in a circular walled feature with its interior lower than surrounding features and with the interior lined with a rough cement, and several low cement squares at the small higher, drier point in the center of the irrigated terraces. The first suggests that some or all of these terraces nearest Honua Stream were being cultivated in irrigated kalo in these years. The cemented feature was clearly to retain water, as a pond – exactly what for is unclear. The small cement squares have an uncertain function with different hypotheses ranging from the foundation for a water catchment to a foundation for a small poi factory.

Aki Sinoto in 1996-1997 excavated the low platform that extends out from the terrace retaining wall next to Honua Stream. He found early 1900s artifacts here and interpreted this as a house platform. I surface collected and excavated on the edge of the last terrace of the irrigated kalo terraces, which was located just above this lower platform – located along Honua Stream and just next to the Bus Parking lot. This terrace was drier and had early 1900s artifacts on the surface. This was interpreted as an early 1900s house site. At the time I was unaware of Aki

Sinoto's work on the lower platform. These early 1900s features may be reflective of one household of this time, or two adjacent households.

Another housing related feature was found along Honua Stream one terrace above the early 1900s house features. This was a small rectangular pit, about 1.5 meters deep and stone-lined. Aki Sinoto excavated this feature in 1996-1997 and uncovered early 1900s artifacts from the floor of the pit, including a coin dating to that period. This feature has been interpreted as the pit associated with a lua or outhouse that would have been a wood structure built over the pit.



Figure 19. Early 1900s artifacts found in 2007 UH West O'ahu Field Archaeology class excavations at site 5751. Part of a house site located just next to today's bus parking area.

Figure 20. Small rectangular pit found along Honua Stream at site 5751. Excavated by Wai‘anae High Hawaiian Studies students in 1996-1997 under Aki Sinoto’s supervision. Finds included early 1900s artifacts, including a coin. Interpreted as a lua (outhouse) pit.



Summary – Site 5751

This City & County parcel seems to have been abandoned since about 1940 (perhaps a bit earlier). But it again contains pre-European and 1800 to mid-1800s features throughout the parcel (irrigated kalo terraces mostly, but also dryland fields, and two associated agricultural shrines). The irrigated terraces include some of the most impressive irrigated kalo architecture that the author has seen on O‘ahu. Additionally, this parcel in the Honua Stream half has features associated with the early 1900s. These include a house, likely some of the irrigated terraces, a lua pit and other features.

CONCLUSIONS

All three of these parcels were part of the irrigated kalo-housing landscape of Wai‘anae’s upper valley, which reached its maximum extent in the late 1700s just prior to European Contact. Descending irrigated kalo terraces were present on soil-covered slopes or on stream flats where water could be diverted out of the year-round flowing tributary streams of the upper valley, or out of springs. On adjacent high points were the households of the people farming the kalo fields – usually farming sets of fields called mo‘o that had specific names. Small religious structures (shrines) were present both at households and in the fields. It is unclear where family members were buried – either in houseyards or nearby small cemeteries is likely.

It is uncertain how far up-valley this landscape extended. Monserrat’s 1906 map shows areas “formerly in taro” in the southern upper valley well behind the DHHL parcel up to at least the 1,000 foot elevation. There has been no modern archaeological survey yet back at these elevations, but there are reports from community members of possible house platforms and terraces right up to the base of the steep valley walls. In the northern half of the upper valley, Monserrat’s 1906 map identifies land “formerly in taro” on the slopes between Kūmaipō and Hiu streams up to the 1,400 foot elevation. Our recent small archaeological survey in the steeper upper valley along one of Kūmaipō’s tributaries found irrigated kalo terraces at the 1,200 foot elevation (Cordy 2012). A 1980s very brief reconnaissance walk up Kūmaipō by Bordner (1988) reported terraces further up-valley. Additionally, I have seen platforms farther up-valley. Thus, the traditional era farming-house landscape at its maximum extent in the late 1700s may have approached the base of the steep valley walls. Part of our long-range research-education program in the valley is to define the limits of this landscape.

Again, these three parcels were at the seaward edge of this upper valley irrigated kalo-housing landscape. Irrigated kalo fields and houses continued down along Kaupuni Stream all the way to the shore. But immediately seaward of the Ka‘ala area out on the former Waianae Valley Ranch, there was no irrigation. Here rainfall farming (dryland farming) occurred – with the nearby areas having dense housing and intensive dryland fields that were terraced. The major trail that came up Wai‘anae valley from the coastal trail branched at the end of Wai‘anae Valley Road. One branch went into Lualualei and over Kolekole Pass to the center of the island. The other branch approximates today’s paved access road into Wai‘anae’s upper valley. This trail, called the Kūmaipō Trail ran up along Kaupuni Stream to about where the dirt access road into the Cultural Learning Center is today. Then it swung across the front of the upper valley and over into Mākaha. This trail effectively ran along the seaward edge of the irrigated kalo landscape in the southern upper valley – with irrigated kalo and the parcels covered in this paper on the up-valley side and with dryland fields (quite possibly mostly sweet potato) on the down-valley side.

PROPOSED SITE SIGNIFICANCE EVALUATIONS

Table 3 proposes significance evaluations for these seven historic properties, following the criteria of the Hawai‘i Register of Historic Places.

One key point to understand any significance evaluations in upper Wai‘anae Valley is that virtually the entire archaeological and cultural landscape of pre-European times and the early 1800s is still present and largely intact. This is one of the largest surviving archaeological and cultural landscapes that survive on O‘ahu. Based on our work over the last 15 years, this landscape begins minimally at the Kawiwi drainage (or two thirds of the way down-valley within the former Waianae Valley Ranch), which is the farthest down-valley that survey on the Ranch went. From this point, heading up-valley through the Ranch and then up into the Forest Reserve on the northern side of the upper valley and up through the parcels described here and behind them into the Forest Reserve on the southern side of the upper valley, the cultural landscape is still there. Most of the Ranch is covered with intensively terraced sweet potato fields (rainfall or dryland fields) with many associated permanent house sites, with three large major heiau, with smaller religious structures (agricultural and household shrines) and undoubtedly with burials (most as not yet found). In the upper reaches of Punana‘ula Stream and from Kūmaipō Stream extending up valley, the landscape was focused on irrigated kalo – for all the upper valley tributaries flowed year round. Some of these irrigated terraces were lineal along stream flats, other descended down steeper slopes fed by springs, and others descended across broad slopes. Permanent houses have been found scattered among these irrigated fields on high points. Some areas that are covered in stone or are rougher terrain seem to have dryland (rainfall) or kula field remains. Our survey as yet has not gone far up-valley into the Forest Reserve, but Monsarrat’s 1906 map shows lands in these areas formerly in taro, and we are aware of reports of archaeological sites up to the base of the steep ridges at the back of the valley. Our only survey so far in steeper up-valley stream areas has identified irrigated kalo fields on small areas near streams. It does appear likely that the landscape goes to the base of the ridges. And, importantly, this landscape also minimally includes the ridgelines of Ka‘ala and Kawiwi, where oral historical events occurred as well as the presence of pre-European Native Hawaiian gods are recorded.

This intact cultural and archaeological landscape of Wai‘anae’s upper valley is extremely important in a bigger picture also. Not only is it one of the largest surviving archaeological and cultural landscapes on O‘ahu, it is one of the most important for learning about the past. Wai‘anae valley was the political, economic, demographic and religious center of the moku of Wai‘anae. The high chief resided in this land when present, and so did the king on tours around the island. It is the only ahupua‘a in the moku of Wai‘anae with year-round flowing streams that ran from the mountains to the shore. It had vast irrigated kalo lands along these streams, making it by far the most productive land in the moku. Similarly, it had the largest population in the moku at the end of pre-European times. And it had by far the most major heiau (those above 500 sq.meters) in the moku. Lualualei had one such heiau, as did Mākaha and Kahanahāiki. Wai‘anae valley had approximately 10 such major heiau, including the main luakini heiau (national heiau) of the moku, Kamohoali‘i heiau on the small knoll next to today’s Pilila‘au Park in the lower valley behind Pōka‘ī Bay. These factors are all undoubtedly interrelated, but they make Wai‘anae valley the key central place within the moku. Such places are critical for

understanding the history of the moku and of the rise of the island-sized kingdoms – the rise of the Kingdom of O‘ahu in this case. Such central places in other moku on O‘ahu have very little of their landscapes intact – Kailua and Kāne‘ohe ahupua‘a in Ko‘olaupoko, Waikīkī in Kona, Kalauao, Waipi‘o, Waikele and Honouliuli in ‘Ewa, Līhu‘e-Wahiawā in the center of the island, and the Kawailoa-Kamananui ahupua‘a of Waialua. This makes Wai‘anae valley’s much more intact landscape even more important for understanding the rise of the Kingdom on O‘ahu.

This intact landscape is also extremely important from a Native Hawaiian traditional cultural viewpoint. The landscape is important as an educational tool – viewing and touching the places that past ancestors built and worked at, and when these places are put back into use (as the case with Ka‘ala Farms’ lo‘i and thatched hale). Over the years, Ka‘ala Farms has educated hundreds, if not thousands, of Native Hawaiian school children and adults from Wai‘anae and around the island about the traditional cultural value of this landscape. This often begins with visitors sitting in the hale, closing their eyes, and listening to the landscape – to the quiet, the wind, the birds. It is a landscape that connects to the past. Many Native Hawaiians from the Wai‘anae side see this landscape as a modern day pu‘uhonua, a refuge, a way to link to the past, stabilize their lives, and direct their future. If all these factors do not make a landscape have traditional cultural significance, nothing does.

Thus, this entire landscape of upper Wai‘anae valley is significant for virtually all of the criteria of the Hawai‘i Register of Historic Places. It contributes to broad patterns of Hawaiian history from pre-European times (early times to the rise and time of the kingdoms) to the 1800s (when depopulation occurred) to the present (criterion A). It is associated with famed deities -- Kaiona atop Ka‘ala to name one (criterion B). It has many excellent examples of site types (different types of dryland fields, different types of irrigated kalo fields, different types of religious structures, different types of permanent house sites), and as an intact landscape is an excellent example of a type itself (Criterion C). It has the potential to contribute information on the past (all the sites contain important information that can contribute collectively to our knowledge of major historical trends in the history of O‘ahu) (Criterion D), and it has traditional cultural significance to Native Hawaiians (Criterion E). This significance of the landscape was made by the State Historic Preservation Office in its review of the historic sites and landscape present on Waianae Valley Ranch, when the SHPD produced a report on its survey findings for the Ranch (Cordy 1981) and in follow-up correspondence with the Department of Agriculture. This significance evaluation was accepted by the Department of Agriculture, and the process moved on to mitigation concerns. This significance was also brought up when DLNR was viewing upper Wai‘anae Valley as an “important hotspot” when Michael Wilson was Chair. In this case, Forest Reserve lands and parcels in the Ka‘ala Farm area were also considered part of this landscape. This significance was also brought up by myself when writing summaries for DOFAW for Forest Reserve lands (e.g., Cordy 2010). Thus, I would argue that the landscape has been determined significant by the SHPD in the form of a consensus determination. If this needs to be reiterated for DOFAW, DLNR (now holding the Ranch), DHHL, the City and County, and Ka‘ala Farms, I would suggest that now is the time to do this. But this significance evaluation has already been made, by SHPD itself. If this needs to be formalized with the nomination of the landscape as a district to the Hawai‘i Register of Historic Places, it could be done – although this would take a great deal of work.

With the above view, all 7 historic places in this report automatically must be considered significant for Criterion A (contributing to broad patterns of history, as part of the collective landscape) and for Criterion E (traditional cultural significance) as part of the landscape. All of these sites contain important information that will contribute as building blocks to our knowledge of the past – our knowledge of broad patterns as represented across this broad landscape. None have direct ties to famous individuals or deities, so Criterion B does not apply to any of these sites specifically. Five are excellent examples of site types. Sites 5965, T-1 and 5751 are each excellent examples of irrigated kalo terraces – 5965 of a large complex descending across a very broad slope, T-1 of a narrow lineal set along a stream flat, and 5751 of a complex set of terraces surrounding low points on the terrain and having massive stone walls in several terraces (the most impressive terrace walls that I have seen on O‘ahu). Site 5756 is an excellent example of a late 1800s boundary wall. T-2 (the rockshelter) is an excellent example of a small basalt stone workshop.

Table 3
Proposed Significance Evaluations

Site	Function	Hawai‘i Register of Historic Places Criteria				
		A	B	C	D	E

DHHL Leased Parcel [TMK 8-5-05: 36]

5965	Irrigated kalo fields with a small dryland field area & with some border walls and irrigation canals. Covers entire broad slope between Honua and Kaua‘ōpu‘u streams, and it extends up-valley into the Forest Reserve	x	x	x	x	
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Table 3 (contd)
Proposed Significance Evaluations

Site	Function	Hawai‘i Register of Historic Places Criteria				
		A	B	C	D	E
<u>DHHL Leased Parcel [TMK 8-5-05: 36] (contd.)</u>						
5750	Low rise with domestic artifacts & some remnant terraces. Overlaid with 1970s-on features associated with Ka‘ala Farms (the hale and houses)	x			x	x
5756	Boundary Wall	x	x	x	x	
T-1	Small, lineal set of irrigated kalo terraces on stream flat along Kaua‘ōpu‘u Stream	x		x	x	x
T-2	Temporary habitation work area flaking basalt in rockshelter along Kaua‘ōpu‘u Stream	x		x	x	x
<u>Ka‘ala Farms Parcel [TMK 8-5-05:7]</u>						
5755	Remnant irrigated kalo features along Honua & Kūmaipō streams		x			x
<u>City & County Parcel [TMK 8-5-05:6]</u>						
5751	Irrigated kalo features with 2 agricultural shrines & Dryland agricultural feataures Covering all of Parcel 6 between Honua & Kūmaipō streams. Overlay of some early 1900s housing & farming features.	x		x	x	x

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