

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA

P.O. BOX 621
HONOLULU, HAWAII 96809

May 6, 2026

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT
RYAN K.P. KANAKA'OLE
FIRST DEPUTY
CIARA W.K. KAHAHANE
DEPUTY DIRECTOR - WATER
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES
ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Ms. Mary Alice Evans, Director
Environmental Review Program
Office of Planning and Sustainable Development
Department of Business, Economic Development and Tourism
235 S. Beretania Street, Room 702
Honolulu, Hawaii 96813

**Draft Environmental Assessment
and Anticipated Finding of No Significant Impact (DEA-AFONSI)
Mālaekahana State Recreation Area (SRA) Kalanai Section
Park Improvements, Lā'ie, O'ahu, Hawai'i
TMK:(1) – 5-6-001:004 (por.)**

Dear Ms. Evans:

With this letter, the Department of Land and Natural Resources (DLNR) transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Mālaekahana SRA Kalanai Section Park Improvements project located in Lā'ie on O'ahu. The DEA has been prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 11-200.1, Hawaii Administrative Rules.

We respectfully request that the DEA-AFONSI be published in the next edition of the Environmental Notice. We are also providing the action summary, significance criteria, and other required information via the Environmental Notice online submittal platform.

If there are any questions, please contact Carl Sholin, Division of State Parks, 808-636-8430 or via email to carl.e.sholin@hawaii.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "R.K. Kanaka'ole".

Ryan K.P. Kanaka'ole
Acting Chairperson,
Board of Land And Natural Resources

From: dbedt.opsd.erp@hawaii.gov
To: [DBEDT OPSD Environmental Review Program](#)
Subject: New online submission for The Environmental Notice
Date: Thursday, May 14, 2026 12:25:39 PM

Action Name

Malaekahana State Recreation Area Kalanai Section Park Improvements

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

Ko'olauloa, O'ahu

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

(1)-5-6-001:004

Action type

Agency

Other required permits and approvals

SMA Major Permit; Building Permit; Grading/Grubbing/Trenching/Stockpiling Permit; NPDES Permit; Community Noise Permit; Shoreline Setback Determination; CZM Program Review for Federal Consistency; Oversized and Overweight Vehicles Permit; DCAB Plan Review; HRS 6E-8; NEPA Compliance; NHPA Section 106; Federal ESA Section 7 Consultation

Proposing/determining agency

State of Hawaii, Department of Land and Natural Resources, Division of State Parks

Agency jurisdiction

State of Hawai'i

Agency contact name

Carl Sholin

Agency contact email (for info about the action)

carl.e.sholin@hawaii.gov

Email address for receiving comments

malaekahana@g70.design

Agency contact phone

(808) 587-0300

Agency address

1151 Punchbowl Street Room 310
Honolulu, Hawaii 96813

United States
[Map It](#)

Is there a consultant for this action?

Yes

Consultant

G70

Consultant contact name

Tracy Camuso

Consultant contact email

tracyc@g70.design

Consultant contact phone

(808) 523-5866

Consultant address

111 S. King Street, Suite 170
Honolulu, Hawaii 96813
United States
[Map It](#)

Action summary

The proposed park improvements will include replacement of two existing comfort stations near camping areas A and B on the Kalanai Section of the park. Park improvements will also include a new pavilion, stand-alone pot-washing station, rinsing shower, and upgrades to the park's existing individual wastewater system.

Reasons supporting determination

Please refer to Section 6 "Findings Supporting the Anticipated Determination" of the document for supporting reasons.

Attached documents (signed agency letter & EA/EIS)

- [Draft-EA-Malaekahana-DEA-AFONSI-Letter-part-1-unsecured2.pdf](#)
- [Malaekahana-EA-2026-05-14.pdf](#)

Action location map

- [prj_site_2026_05132.zip](#)

Compliance certification (HRS §368-1.5):

The authorized individual listed below certifies that documents submitted are unlocked, searchable, and compliant with the Hawaii Electronic Information Technology Disability Access Standards (including, but not limited to transcripts, captions, and other descriptions accompanying audio/video files). The individual acknowledges that the submitter retains the responsibility for compliance after documents have been published and any compliance queries will be directed back to the agency and/or applicant.

Authorized individual

Andrew Choy

Authorized individual email

andrewc@g70.design

Authorized individual phone

(808) 523-5866

Authorization

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

Mālaekahana State Recreation Area – Kalanai Section Park Improvements

DRAFT ENVIRONMENTAL ASSESSMENT

MĀLAEKAHANA, ISLAND OF O'AHU, HAWAII



Applicant:

Department of Land and Natural Resources

Prepared by:



March 2026

Mālaekahana State Recreation Area – Kalanai Section Park Improvements

DRAFT ENVIRONMENTAL ASSESSMENT

LĀ'IE, ISLAND OF O'AHU, HAWAI'I

TAX MAP KEY: (1) 5-6-001: 004

PREPARED FOR:

Department of Land and Natural Resources
Division of State Parks
1151 Punchbowl St.
Honolulu, HI 96813

PREPARED BY:



111 S. King Street, Suite 170
Honolulu, Hawai'i 96813

March 2026



Table of Contents

SECTION	PAGE
List of Figures	iii
List of Tables	iii
Appendices	iv
Abbreviations.....	iv
1.0 Introduction	
1.1 Project Information Summary	1-1
1.2 Project Area	1-2
1.3 Overview of the Proposed Project	1-2
1.4 Purpose of the Environmental Assessment	1-2
1.5 Permits and Approvals Required.....	1-3
2.0 Description of the Project	
2.1 Project Location and Characteristics	2-1
2.2 Purpose of the Project	2-6
2.3 Proposed Park Improvements.....	2-6
3.0 Description of the Environmental Setting, Potential Impacts, and Mitigation Measures	
3.1 Topography and Drainage	3-1
3.2 Soils.....	3-1
3.3 Climate and Air Quality.....	3-3
3.4 Natural and Manmade Hazards.....	3-4
3.5 Biological Resources.....	3-9
3.6 Water Resources	3-11
3.7 Noise Conditions	3-13
3.8 Utilities and Infrastructure.....	3-14
3.9 Traffic and Roadways.....	3-16
3.10 Recreational Facilities.....	3-17
3.11 Police.....	3-18
3.12 Fire	3-18
3.13 Emergency Medical Services.....	3-19
3.14 Solid Waste Management	3-19
3.15 Historic, Archaeological, and Cultural Resources	3-20
3.15.1 Historic and Archaeological Resources	3-20
3.15.2 Cultural Resources	3-25

3.16	Visual and Scenic Resources	3-29
3.17	Socio-Economic Characteristics.....	3-29
3.18	Potential Cumulative, Indirect, and Secondary Impacts.....	3-30
4.0	Alternatives to the Proposed Project	
4.1	Alternative A – No-Action Alternative	4-1
4.2	Alternative B – Rehabilitate Existing IWS	4-1
4.3	Alternative C – Install Two New IWS Located at Each Comfort Station.....	4-2
4.4	Preferred Alternative – Install One New Centralized IWS Located at the Northeast Corner of Grass Field	4-2
5.0	Plans and Policies	
5.1	Americans with Disabilities Act of 1991.....	5-1
5.2	DLNR State Parks Administrative Rules	5-2
5.3	DLNR State Comprehensive Outdoor Recreation Plan Update 2021	5-2
5.4	Hawai’i State Plan	5-4
5.5	State Land Use District	5-7
5.6	Ka Pa’akai v. Land Use Commission	5-8
5.7	Hawai’i Coastal Zone Management Program.....	5-10
5.8	City & County of Honolulu General Plan 2030.....	5-16
5.9	City and County of Honolulu Land Use Ordinance Guidelines	5-19
5.10	City and County of Honolulu Ko’olau Loa Sustainable Communities Plan.....	5-19
5.11	Special Management Area	5-22
6.0	Findings Supporting the Anticipated Determination	
6.1	Anticipated Determination.....	6-1
6.2	Reasons Supporting the Anticipated Determination	6-1
6.3	Summary.....	6-4
7.0	Agencies, Organizations and Individuals Consulted in the EA Process	
7.1	Response to Comments Received During Early Consultation.....	7-6
8.0	List of References	

List of Figures

Figure	Page
1-1	Project Location Map.....1-4
1-2	TMK Parcel Map.....1-5
1-3	State Land Use District Map1-6
1-4	Special Management Area Boundary1-7
1-5	City and County of Honolulu Zoning Map1-8
1-6	City and County of Honolulu Ko'olau Loa Sustainable Communities Plan Map1-9
2-1	Aerial Image of Mālaekahana State Recreation Area Kalanai Section2-2
2-2	Photo of Camp Area A.....2-3
2-3	Photo of Camp Area B.....2-3
2-4	Photo of Comfort Station A.....2-4
2-5	Photo of Comfort Station B.....2-4
2-6	Existing Improvements in the Project Area.....2-5
2-7	Proposed IWS Improvements.....2-7
2-8	Potential Locations (Options 1, 2, and 3) of Large Group Camping Area at the Kalanai Section2-9
3-1	Soil Characteristics3-1
3-2	Photo of Existing Coastline at Mālaekahana SRA Kalanai Section3-5
3-3	3.2-Foot Sea Level Rise Scenario3-6
3-4	Flood Zones.....3-7
3-5	Symbolic Fencing at Kalanai Section 3-13
3-6	Streams in the Vicinity of the Project Area 3-15
3-7	Previous Archaeological Studies Near Project Area 3-26
3-8	Known Archaeological Sites Near Project Area..... 3-27
4-1	Existing IWS System – No Action Alternative4-1
4-2	Alternative C – Install Two New IWS Located at Each Comfort Station.....4-3
4-3	Alternative D – Preferred Alternative New Centralized IWS4-5

List of Tables

Table		Page
1-1	List of Required Government Permits and Approvals.....	1-3
3-1	Indigenous and Polynesian Introduced Plants Observed in the Project Area	3-10
3-2	Avian Species Detected Observed in the Project Area	3-11
3-3	Previous Archaeological Studies and Results within the Vicinity of the Project Area.....	3-24
3-4	Enrollment Numbers for Public Schools in the Ko‘olau Loa District 2024-2025.....	3-34
7-1	Agencies, Organizations, and Individuals Consulted During Early Consultation Period.....	7-1
7-2	Responses to Comments Received During Early Consultation.....	7-6

Appendices

- A. Biological Assessment Surveys
- B. Individual Wastewater System (IWS) Assessment Report
- C. Archaeological Literature Review and Field Inspection
- D. Cultural Impact Assessment
- E. Early Consultation Comments

Abbreviations

ADA	Americans with Disabilities Act of 1990
AICP	American Institute of Certified Planners
AECOS	AECOS, Inc. (environmental consulting firm)
AFONSI	Anticipated Finding of No Significant Impact
AIS	Archaeological Inventory Survey
ALISH	Agricultural Lands of Importance to the State of Hawai'i
ALFRI	Archeological Literature Review and Field Inspection
ASYA	Aquifer System Area
ATU	Aerobic Treatment Unit
BMP	Best Management Practices
BWS	Honolulu Board of Water Supply
BYU-H	Brigham Young University-Hawai'i
CAB	Clean Air Branch, State Department of Health
CIA	Cultural Impact Assessment
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
CWB	Clean Water Branch, State Department of Health
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
dBA	Decibels
DAGS	Department of Accounting and General Services
DBEDT	Department of Business, Economic Development, and Tourism
DEM	Department of Environmental Services Refuse Division
DHHL	State Department of Hawaiian Home Lands
DLNR	State Department of Land and Natural Resources
DOE	State Department of Education
DOFAW	State DLNR-Division of Forestry and Wildlife
DOH	State Department of Health
DOT	State Department of Transportation
DPP	City and County of Honolulu Department of Planning and Permitting
DSP	Division of State Parks

EA	Environmental Assessment
ED	Engineering Division
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
gpd	gallons per day
gpm	gallons per minute
GPS	Global positioning system
GHG	greenhouse gas
HAR	Hawai'i Administrative Rules
HCCDA	Honolulu Climate Change, Drought, and Adaptation
HCCMAC	Honolulu Climate Change, Mitigation, and Adaptation Commission
HECO	Hawaiian Electric Company
HFD	Honolulu Fire Department
HPD	Honolulu Police Department
HRS	Hawai'i Revised Statutes
IWS	Individual Wastewater Systems
kWh	kilowatt-hours
LUC	State Land Use Commission
LWC	Laie Water Company
LWCF	Land and Water Conservation Fund
MGD	million gallons per day
MLS	Mean median sea-level
NAAQS	National Ambient Air Quality Standards
NHPA	National Historic Preservation Act
NFPA	National Fire Protection Agency
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
OHA	Office of Hawaiian Affairs
OPSD-CZM	Office of Planning and Sustainable Development, Coastal Zone Management

PacIOOS	Pacific Islands Ocean Observing System
PCC	Polynesian Cultural Center
PUC	Public Utilities Commission
SCORP	State Comprehensive Outdoor Recreation Plan
SHPD	State Historic Preservation Division
SLR	Sea level rise
SLR-XA	Sea level rise exposure area
SLUD	State Land Use District
SMA	Special Management Area
State	State of Hawai'i
SRA	State Recreation Area
TMK	Tax Map Key
UIC	underground injection control
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WPOD	Wellhead Protection Overlay District
WWPS	wastewater pump station
WWTP	wastewater treatment plant

This page left blank intentionally.

Chapter 1

Introduction

Chapter 1

Introduction

This Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawai'i Revised Statutes (HRS), and Hawai'i Administrative Rules (HAR), Title 11 Chapter 200.1 Department of Health. The use of State lands and State funds triggers compliance with HRS Chapter 343. The project will also seek federal funding which will require compliance with the National Environmental Protection Act (NEPA) (CEQ 40 CFR).

1.1 Project Information Summary

Type of Document:	Draft Environmental Assessment (EA)
Project Name:	Mālaekahana State Recreation Area (SRA)– Kalanai Section Park Improvements
Applicant:	Department of Land and Natural Resources (DLNR) Division of State Parks (DSP) Kalanimoku Building 1151 Punchbowl St. Honolulu, HI 96813 Contact: Carl Sholin 808-587-0300
Agent:	G70 111 S. King St., Suite 170 Honolulu, HI 96813 Contact: Tracy Camuso, AICP, Principal (808)-523-5866
Approving Agency:	Department of Land and Natural Resources Kalanimoku Building 1151 Punchbowl St.
EA Trigger:	Use of State Lands and State Funds
Project Location:	Lā'ie, Ko'olauloa , O'ahu
Tax Map Keys (TMK) and Landowners:	(1)-5-6-001:004 (por.) owned by State of Hawai'i

Project Area:	Approximately 7 to 12 acres ¹
State Land Use District:	Urban and Agriculture District
City & County of Honolulu Zoning:	P-2 General Preservation District
Community Plan:	Visitor Facilities
Special Design District:	Project area is not within a Special Design District
Special Management Area:	Project area is within the Special Management Area (SMA) boundary
Flood Zone:	X (areas outside of the 0.2% annual chance floodplain)
Anticipated Determination:	Finding of No Significant Impact (FONSI)

1.2 Project Area

The Mālaekahana State Recreation Area (SRA) consists of two sections, the Kahuku Section to the north and the Kalanai Section to the South. The project area is located on a portion of TMK (1)-5-6-001:004, identified as the Mālaekahana SRA Kalanai Section. The Project is approximately 1.25 miles south of Kahuku town and 0.8 miles north of Lā‘ie town. The entire Mālaekahana SRA Kalanai Section is approximately 70 acres of which the Project (see Section 2.3 Proposed Park Improvements) will encompass an approximate area of 7 to 12 acres. Figure 1-1 illustrates the location of the Kalanai Section relative to the Kahuku Section of the Mālaekahana SRA..

1.3 Overview of the Proposed Project

The proposed park improvements will include replacement of two existing comfort stations near camping areas A and B on the Kalanai-side of the park. Park improvements will also include a new pavilion, stand-alone pot-washing station, rinsing shower, and upgrades to the park’s existing individual wastewater system. The proposed park improvements are discussed in more detail in Section 2 of this environmental assessment.

1.4 Purpose of the Environmental Assessment

In accordance with the requirements of Chapter 343, Hawai‘i Revised Statutes (HRS), an Environmental Assessment (EA) is being prepared. This Draft EA will be published in Environmental Review Program Environmental Notice, which will commence a 30-day public review period. This Draft EA is also prepared to comply with the requirements of National Environmental Protection Act (NEPA) (CEQ 40 CFR).

This EA is presented in eight sections and includes the following: a detailed summary and project description; a list of necessary approvals; a description of the environmental setting; a discussion on

¹ The entire Mālaekahana SRA Kalanai Section is approximately 70 acres. The Project acreage shown for the project area is for the portion of the Kalanai Section in which the proposed improvements will take place.

potential impacts and proposed mitigating measures on identified natural, cultural, and socioeconomic resources as well as existing infrastructure; a description of alternatives; a discussion of the project’s relationship to State and County land use plans and policies; findings supporting the anticipated determination; a list of references used in developing the EA; and a list of agencies, organizations, and individuals that participated in the pre-consultation phase of the EA.

After the 30-day review period of the Draft EA has concluded, public comments received will be considered and addressed to the extent feasible within the project scope and evaluation. A Final EA is prepared, highlighting key areas of the document that were revised, updated, or modified based upon information received during the public comment period. Upon acceptance of the Final EA, a Finding of No Significant Impact (FONSI) is anticipated.

1.5 Permits and Approvals Required

Several other approvals will be required from federal agencies, the State of Hawai‘i, and City and County of Honolulu to implement the proposed action. The list of permitted approvals are listed in Table 1-1. The intended use of federal funds for the Project will also require compliance with the National Environmental Protection Act (NEPA), the National Historic Preservation Act (NHPA) Section 106, and Endangered Species Act (ESA) Section 7 Consultation.

Table 1-1 List of Required Government Permits and Approvals	
Permit or Approval	Approving Authority
Special Management Area Use Permit Major	Department of Planning and Permitting (DPP), Honolulu City Council
Building Permits	DPP
Grading, Grubbing, Trenching and Stockpiling Permits	DPP
Individual Wastewater System (IWS) Approval	State Department of Health (HDOH) Wastewater Branch
National Pollutant Discharge Elimination System Permit	HDOH Clean Water Branch
Community Noise Permit	HDOH Indoor and Radiological Health Branch
Shoreline Setback Determination	DPP
State Coastal Zone Management (CZM) Program Review for Federal Consistency	State Department of Business Economic Development and Tourism (DBEDT) Office of Planning and Sustainable Development (OPSD)
Oversized and Overweight Vehicles on State Highways Permit	State Department of Transportation
Disability and Communications Access Board (DCAB) Plan Review.	HDOH – DCAB
HRS 6E-8 Project Effect Determination	DLNR – State Historic Preservation Division (SHPD)
National Historic Preservation Act Section 106	DLNR – SHPD
National Environmental Protection Act Compliance	National Park Service (NPS)
Federal Endangered Species Act Section 7 Consultation	United States Fish and Wildlife Service (USFWS)



Figure 1-1

Project Location Map



Figure 1-2

TMK Parcel Map



Figure 1-3

State Land Use District Map

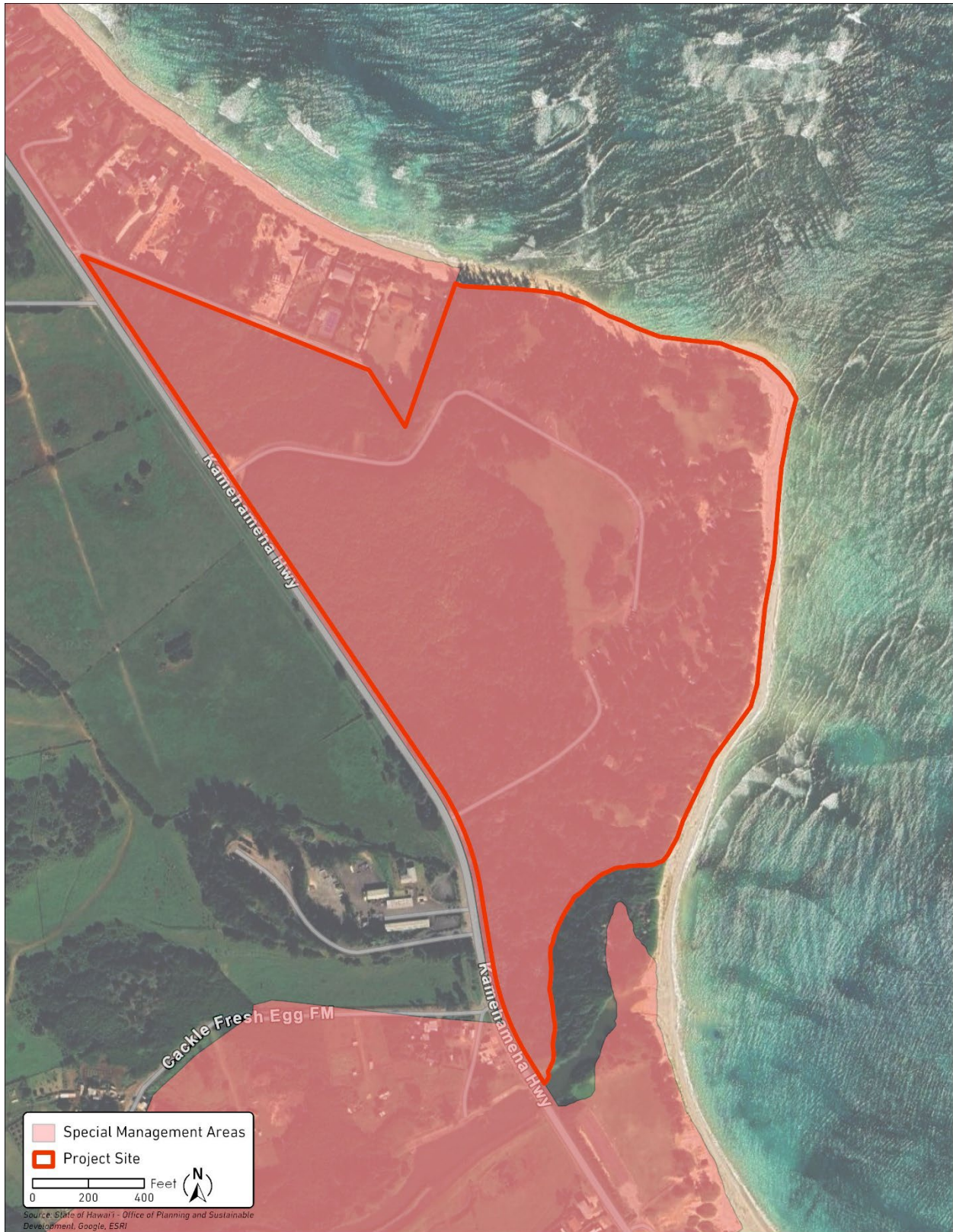


Figure 1-4

Special Management Area (SMA) Boundary



Figure 1-5

City and County of Honolulu Zoning Map

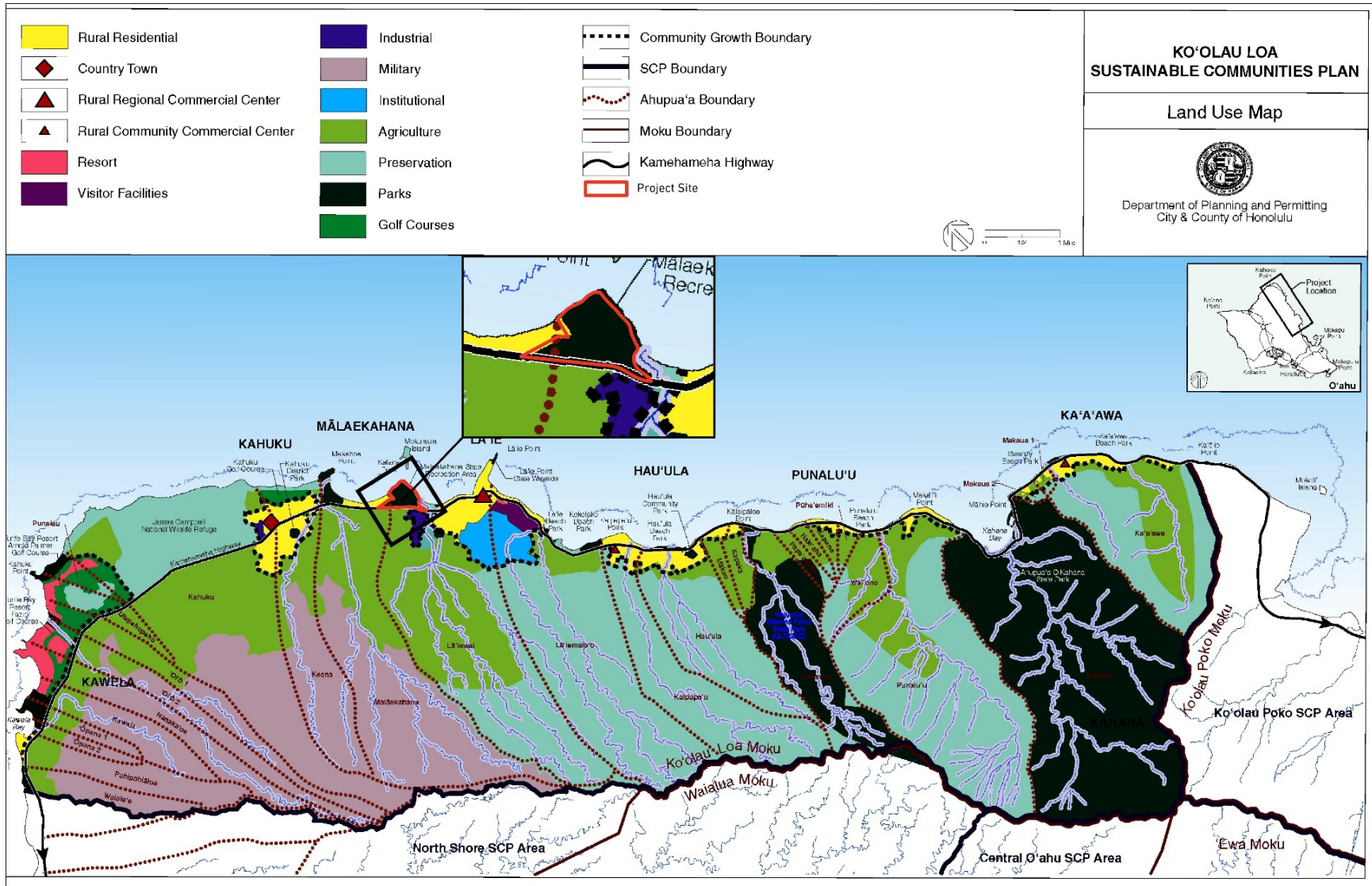


Figure 1-6

City and County of Honolulu Ko'olauloa Sustainable Communities Plan Map

This page left blank intentionally.

Description of the Project



Chapter 2

Description of the Project

2.1 Project Location and Characteristics

Location

The project is located in the Koʻolauloa District of the island of Oʻahu, Hawaiʻi (*Figure 2-1*). The Kalanai Section of the Mālaekahana SRA is located 0.8 miles north of Lāʻie town and 0.7 miles southeast of Mālaekahana State Recreation Area – Kahuku Section and about 1.25 miles south of Kahuku town. The Project site is on the south side of Mālaekahana Bay and makai of Kamehameha Highway (State Route 93).

Ownership

The project site is within the Mālaekahana SRA that is owned by the State of Hawaiʻi, and managed by the Department of Land and Natural Resources, Division of State Parks..



Figure 2-1 Aerial Image of Mālaekahana State Recreation Area – Kalanai Section

Adjacent Land Uses

Land uses immediately adjacent to the project site include residential single-family homes on the north side of the project area.. On the south side of the property is generally bounded by the Kahawainui Stream, and an 8.5 acre privately owned parcel, which is undeveloped. Directly makai of the project area is Mālaekahana Bay, and Kamehameha Highway borders the mauka side of the project area.

Existing On-Site Land Uses

The project area comprises a section of the Mālaekahana State Recreation Area Kalanai Section which is a wooded beach park with picnicking, swimming, bodysurfing, beach-related activities and shore fishing. It contains camping facilities including two open camp area areas (Camp Areas A and B see Figures 2-2 and 2-3), two comfort stations (see Figures 2-4 and 2-5), and two outdoor showers. Each camp area also has a pot-washing station. Two individual wastewater systems (IWS) servicing comfort stations A and B respectively, each consisting of one 6,700 gallon concrete septic tank equipped with a four-inch overflow line that discharges to three seepage pits that are 8-feet in diameter and 8-feet deep. The liquid waste from each comfort station flow into two 90 feet x 90 feet leach fields (four leach fields onsite total). The leach fields are in the grass field located across the parking lot mauka of the two camp areas. Figure 2-6 illustrates the location of existing facilities in the Mālaekahana SRA Kalanai Section.



Figure 2-2 Photo of Camp Area A



Figure 2-3 Photo of Camp Area B



Figure 2-4 Photo of Comfort Station B



Figure 2-5 Photo of Comfort Station A

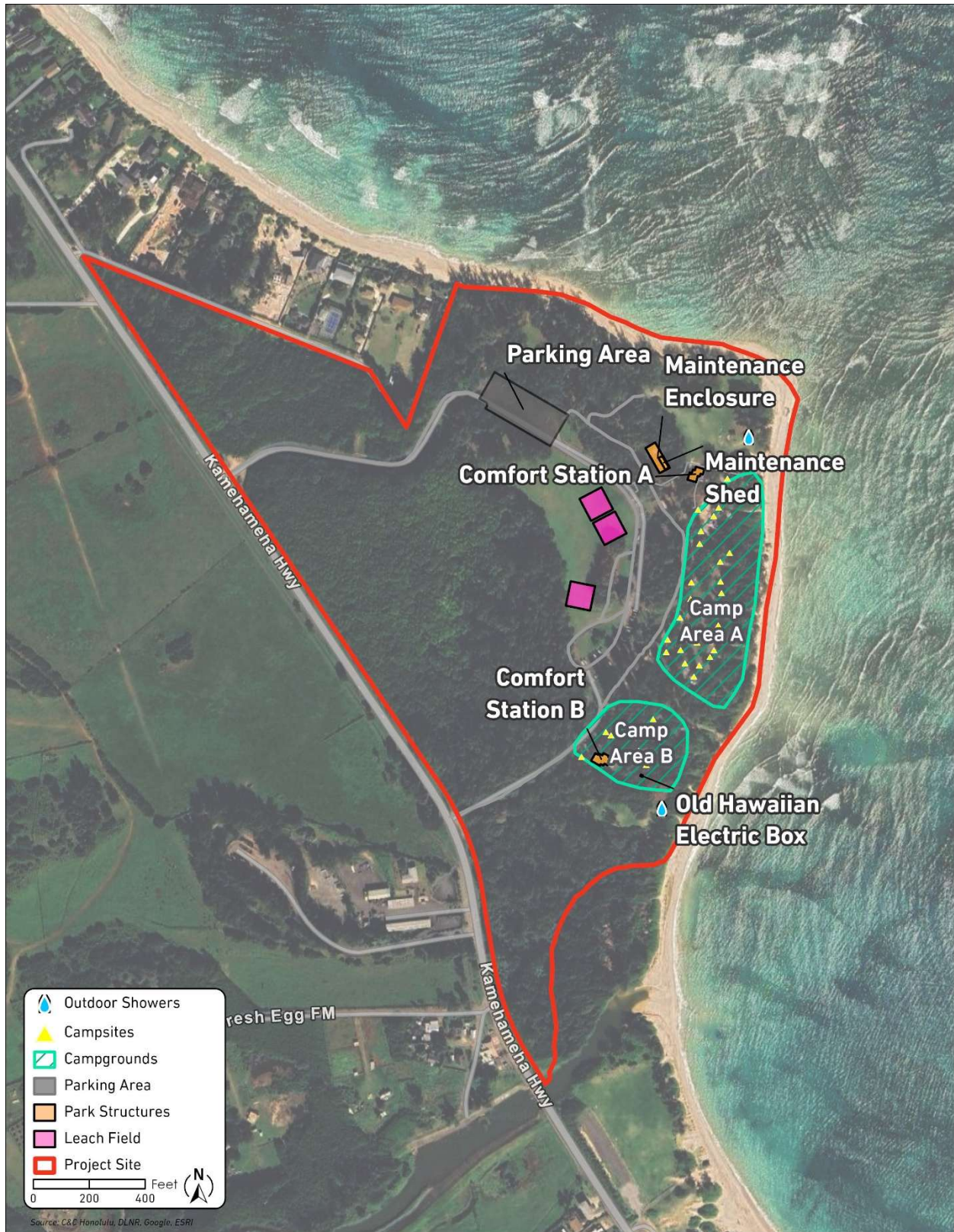


Figure 2-6

Existing Improvements in the Project Area

2.2 Purpose of the Project

The DLNR Division of State Parks provides varied outdoor recreation and heritage opportunities in environments that range from landscaped grounds with developed facilities to wilderness areas with trails and primitive facilities. Through the State's purchase of approximately 74 acres of land from the James Campbell Trust Estate along the southern end of Mālaekahana Bay in 1976, the State created the Mālaekahana State Recreational Area with the intent of providing public recreational opportunities.

The purposes of this project are to:

- (1) Upgrade the facilities that currently exist in the Kalanai Section of the State Recreational Area to better serve current and future park users and to mitigate potential impacts to the surrounding environment from regular park usage. The existing facilities on the property are approaching the end-of-life phase for its use and upgrades are needed to safely provide similar types of facilities for future park users.
- (2) Provide additional recreational amenities and opportunities for members of the public at the Kalanai Section.

2.3 Proposed Park Improvements

The proposed park improvements (The Project) will include replacement of two existing comfort stations at camp area A and B on the Kalanai-side of the park and upgrades to the park's existing individual wastewater systems. Other Kalanai Section improvements include a new pavilion, stand-alone pot-washing station(s) rinsing shower, addition of three to four campervan sites, reconfiguration of the camping areas into furnished campsites including two updated ADA accessible sites, and the addition of one new large group camp area.

Comfort Stations

The two new comfort stations will be in approximately the same footprint as the existing comfort stations and will be about the same size as the existing comfort stations. The new comfort stations will have 5 women's toilets, 3 men's toilets, 2 urinals, and a few showers. The new Comfort Station A will be designed to accommodate up to 350 total daily visitors (270 overnight outdoor campers and 80 daytime visitors). Comfort Station B will accommodate up to 250 total daily visitors (200 overnight outdoor campers and 50 daytime visitors). Both Comfort Stations A and B will incorporate design elements similar to the existing comfort stations at the Mālaekahana SRA – Kahuku Section which includes coral rock veneer walls and corrugated metal roofing. The new comfort stations will also be designed to blend with the natural surrounding area and will be ADA compliant.

Individual Wastewater System Upgrades

The new IWS that will serve both Comfort Station A and B will increase the Kalanai Section's capacity to accommodate peak wastewater flows during high visitation periods. The estimated peak flow for Comfort Station A is 6,500 gallons per day (GPD) and for Comfort Station B is 5,700 GPD for a total estimated peak flow of 12,200 GPD at the Mālaekahana SRA Kalanai Section. The existing septic tanks need to be removed or backfilled. The existing leach fields can remain in place and may be repurposed for recreational uses. However, grass grows poorly above the leach field infiltration pipes. DSP may consider replacing these areas with four to six inches of amended topsoil in order to improve

these conditions. There are also a few concrete encased cleanout inspection ports that DSP will remove to improve recreational safety.

The new IWS would involve constructing one new centralized IWS at the northeast corner of the grass field mauka of the existing leach fields (see Figure 2-7). The IWS would consist of multiple aerobic treatment units (ATU) in parallel which would discharge to a downstream disposal system. The ATU's will provide secondary biological treatment through aeration and enhanced microbial activity which will produce high quality effluent that will meet State Department of Health (HDOH) water quality standards. The ATU's and disposal system would likely need to be raised above the existing grade via a raised mound by a few feet to obtain 3-foot clearance to seasonal high groundwater levels for the disposal system and avoid buoyancy and constructability issues that may arise if the ATU's were to be installed below seasonal high groundwater elevation. The treatment system would be enclosed with protective fencing to provide protection for electrical and mechanical equipment (including control panels and blowers).

Due to topography and limited elevation difference between the comfort stations and the proposed IWS location, wastewater pump stations (WWPS) would be required at each comfort station. This would provide the added benefit of allowing the conveyance force main piping to be installed at minimum cover with flexible alignment to minimize environmental and cultural impacts. A pre-loader tank would be installed adjacent to each comfort station upstream of each WWPS to remove larger solids and oils/greases from the wastewater effluent prior to conveyance to the IWS.

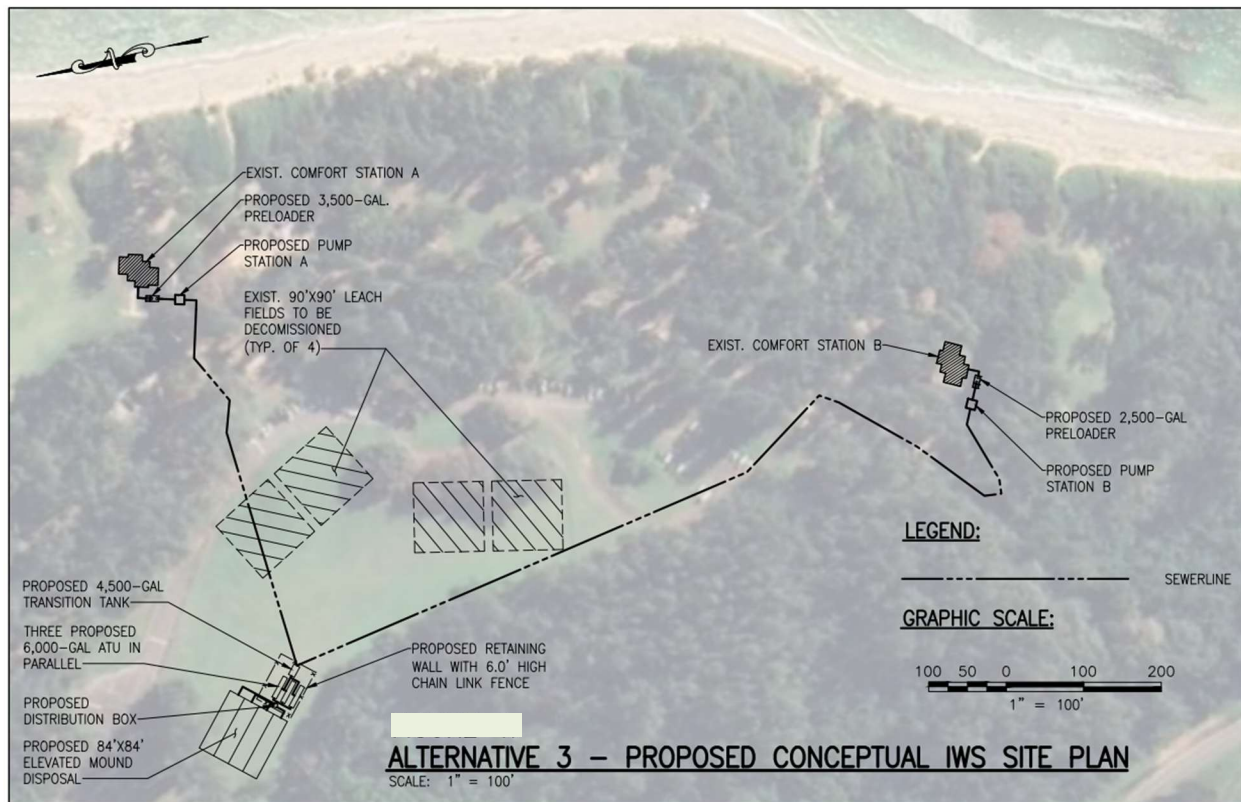


Figure 2-7

Proposed IWS Improvements

New Pavilion

A new pavilion will be approximately 1,500 square feet and 25 feet in height. . It will be located in the general vicinity of the existing camping areas, but its exact location is to be determined. DSP will be evaluating new camping configurations in the next phase of park upgrades. The pavilion is envisioned as a partly covered, open air structure. The covered portion of the pavilion will include a food preparation area with counter, faucet and sink, and tables for picnicking. The pavilion will be designed to blend with the natural surrounding area and will be designed to be ADA compliant. Wastewater from the pavilion will flow into the new IWS system.

Pot-Washing Station

The new pot-washing stations will be located adjacent to or near Comfort Stations A and B. However, the exact location has not been determined at this time. The stations will only utilize cold water. The pot-washing stations will allow campers to sanitize large food preparation equipment such as dishes, pots, and pans. The station will contain a sink, counter, and shelves in a covered but open-air area. Trash receptacles will also be located at the station. Wastewater from the pot-washing stations will drain into the IWS.

Outdoor Rinsing Shower

The outdoor rinsing shower will have approximately the same footprint as the existing showers at the Kalanai Section. The rinsing shower will function similar to other outdoor rinsing showers found at O’ahu beach parks. No hot water will be provided to the shower and the gray water from the shower will drain within the surrounding area and naturally percolate into the ground. However, in the future, should sufficient funding become available, DSP may also explore options for graywater disposal including but not limited to permeable pavement or vegetated biofiltration basin with plants like sedges.

Potential Future Park Improvements

The State Parks Division is also contemplating several other future park improvements at the Mālaekahana SRA Kalanai Section including 3 to 4 campervan sites, the reconfiguration of Camp Area A into furnished campsites which would include making two campsites at Camp Area A ADA accessible, and the addition of one more large group camp area.

Three to four campervan sites are potential improvements that State Parks is contemplating. Campervan sites would provide designated areas where a visitor can legally park a campervan or large vehicle for one or more nights and allow the visitor to have access to basic park facilities such as comfort station and showers. While DSP has not made a final decision on the location of future campervan sites, this use may be located along a coral maintenance road mauka of Campground A and makai of the existing parking area..

DSP is exploring concepts to reconfigure and upgrade Campground A. New camp sites will be furnished with a lot of items which may include shade structures and tent pads, fire-rings, picnic tables, and shared ash disposal features.

DSP is also considering a new group camping area to accommodate larger gatherings. Three options are being considered. Option 1 locates a new group camping area in the field north of Comfort Station A. Option 2 locates a new group camping area in the field south of Campground B and Comfort Station B. Both Options 1 and 2 will allow the Kalanai Section to accommodate an additional 100 campers.

A third option, Option 3 is to re-purpose the existing Campground B into a large group camp site. Option 3 would not add to the park's capacity to accommodate additional campers. The new large group camp site would consist only of an open area clearing with an open pavilion with sink, counter top, and tables. No additional comfort station or other facilities are expected to be constructed to support the new large group camp area. Users of the new large group Camp Area would utilize the comfort station and other facilities located at either Camp Area A or Camp Area B depending upon where DLNR decides to site the third campsite in the future.

Phasing of Park Improvements

The project will be completed in phases as funding becomes available. The completion of new Comfort Station A and new IWS will be completed first with upgrades to comfort station B to be completed in a later phase. The other improvements described in the above section will be completed as sufficient funding becomes available.



Figure 2-8 Potential Locations (Options 1, 2, and 3) of Large Group Camping Area at the Kalanai Section

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



Chapter 3

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

This section describes the existing environmental setting, potential impacts, and mitigation measures for the planned Mālaekahana SRA – Kalanai Section park facility improvements.

3.1 Topography and Drainage

Existing Conditions

Most of the project site between Kamehameha Highway and the sloping shoreline area is between 5 to 20 feet above mean sea level (refer to Figure 9). The project site contains gently sloping areas, small mounds and some knolls. Strong, consistent trade winds have contributed to a windswept landscape of flat open spaces, canopied forest-like areas and sand dune formations near the observable shoreline. The sparsely vegetated areas may shift over time because of high surf and wind conditions. The shoreline and sandy beach area also fluctuates from seasonal variations: high surf during the winter months results in a steeper, smaller beach whereas smaller surf during the summer months helps to create a less steep and more expansive beach.

Anticipated Impacts and Mitigation Measures

No substantial changes to the site's topography will be made, although some excavation and grading will be required during the construction process to accommodate improvements to the existing facilities and construction of new park facilities. Facilities will be located on flatter areas minimizing the extent of grading and excavation. Best Management Practices (BMP) will be implemented pursuant to the required Grading Permit to mitigate potential impacts of soil erosion and fugitive dust during grading or excavation.

3.2 Soil

Existing Conditions

According to the *Geologic Map and Guide of Oahu, Hawaii* (1939), the site is situated on the Ko'olau Range, on the eastern part of the island.

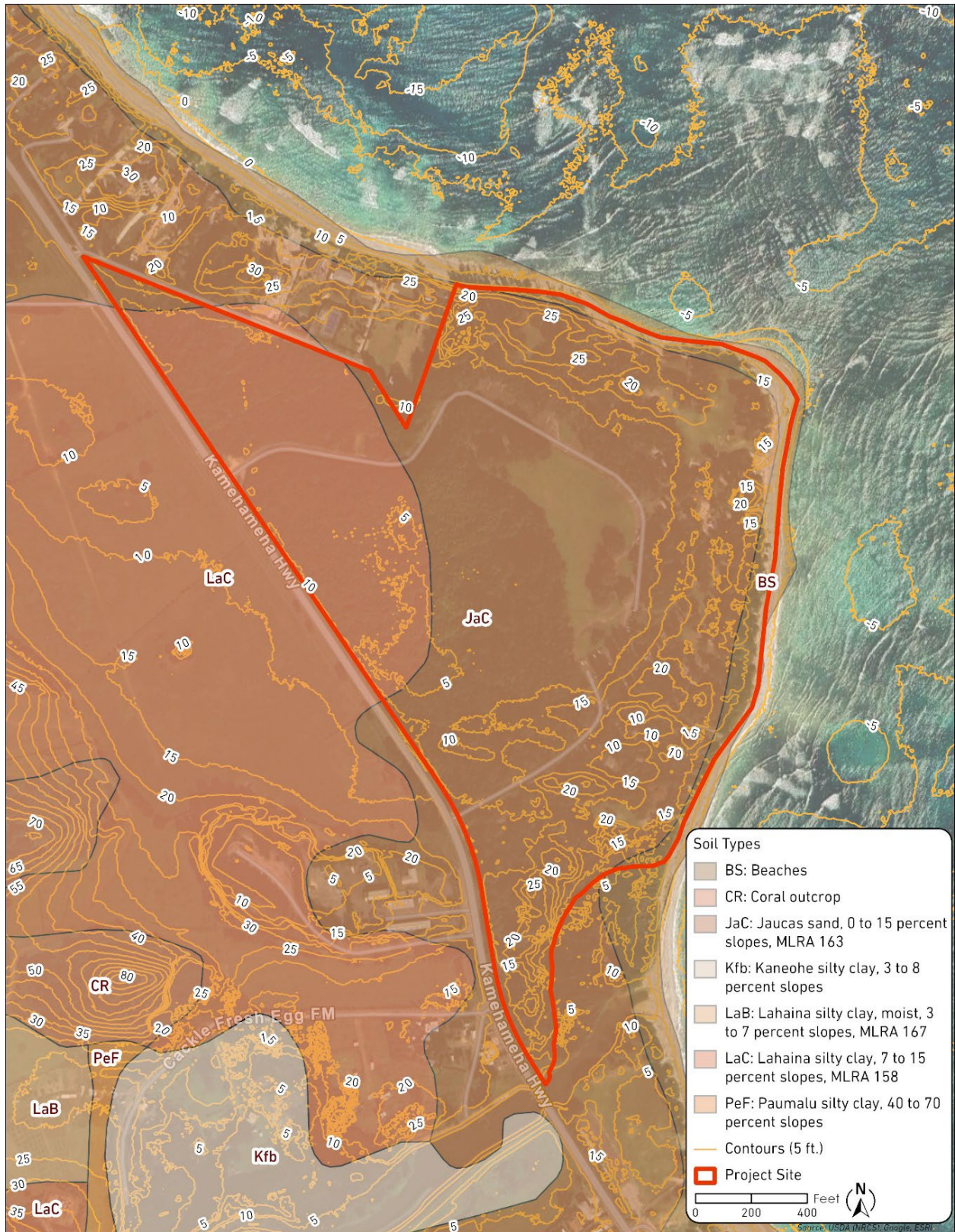


Figure 3-1

Soil Characteristics Map

Soil types within the project site are identified in the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey. The USDA NRCS system classifies soils by type and permeability characteristics, including run-off and erosion. The site consists primarily of Jaucus Sand, 0-15 percent slopes (JaC). This type of soil is well drained. Permeability is high to very high and runoff is low. A portion of the mauka side of the project site also contains Lahaina Silty Clay, 3-7 percent slopes (LaB). This type of soil typically occurs on steep slopes where there are only a few cobblestones on the surface. It has medium runoff and a moderate erosion hazard. The coastal extent of the project area consists of the soil class known as “Beaches” 1-5 percent (BS) which is sandy is typically well drained with very low run-off.

3.3 Climate and Air Quality

Existing Conditions

The climate throughout the State of Hawai‘i is generally characterized by mild temperatures with low daily and monthly variability, moderate humidity, persistent trade winds, and abundant sunshine. The Hawaiian climate is further characterized by a two-season year: the summer season from May through September is generally warmer and less wet than the cooler, winter season from October through April (University of Hawai‘i at Mānoa Sea Grant College Program, 2014). Rainfall distribution across the State of Hawai‘i varies greatly according to geographic conditions, elevation and long-term climatic cycles. The climate of windward lowland areas in Hawai‘i is further described as “moderately rainy, with frequent trade wind showers” (Ibid.).

The project site in the district of Ko‘olauloa on the windward side of the island of O‘ahu has a mild semi-tropical climate similar to rest of the State of Hawai‘i. Average air temperatures at the project site range from 71 degrees Fahrenheit in January to 78 degrees Fahrenheit in August (Giambelluca, T.W. et al, 2013). Average annual rainfall at the project site is estimated to be 47 inches and the wetter months of the year are from October through March (Ibid.). The prevailing northeasterly trade winds are generally strong and consistent in the project vicinity. Strong winds are also known to occur in connection with storm systems that disrupt climatic patterns.

Ambient air quality in the State of Hawai‘i consistently meets National Ambient Air Quality Standards (NAAQS) established by the U.S. Environmental Protection Agency per requirements of the Clean Air Act and State Ambient Air Quality Standards (SAAQS) established by the DOH. The State standards for select parameters are more stringent than their Federal counterparts. Vehicles traveling along existing roadways are a persistent source of exhaust emissions in Hawai‘i; however, the prevailing northeast trade winds help to disperse and prevent the accumulation of airborne pollutants. The NAAQS and SAAQS are periodically exceeded due to volcanic activity and exceptional events such as New Year’s fireworks celebrations.

Ambient air quality at the project site is influenced by natural air pollutants such as ocean sea spray, allergens, volcanic emissions and dust from bare earth areas. The project site may also be impacted by airborne particulates from earth-disturbing agricultural activities and vehicular emissions from automobile traffic along Kamehameha Highway.

Anticipated Impacts and Mitigation Measures

The project is anticipated to have minimal effect on climatic conditions such that no mitigation measures are necessary. Ambient air quality at the project site will be temporarily affected by construction-related vehicles, equipment and activities that would generate fugitive dust and

emissions. Proposed construction-related activities must comply with the provisions of HAR, 11-60.1-33 on Fugitive Dust. The contractor will be responsible for the implementation of a dust control plan, for compliance with the above mentioned rules. The dust control plan may incorporate but is not limited to the following measures:

- Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Minimizing dust from shoulders and access roads;
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- Controlling dust from debris being hauled away from the project site.
- Controlling dust from daily operations of material being processed, stockpiled, and hauled to and from the facility.
- Construction equipment and vehicles shall be properly maintained in order to control vehicular emissions. Said exhaust emissions are anticipated to have negligible impacts on air quality in the project vicinity since the carbon monoxide and nitrogen oxide emissions would be intermittent and readily dissipated.

No significant air quality impacts are anticipated from comfort stations and infrastructure, which represents a restoration and improvement of the park facilities that exist at the project site.

3.4 Natural and Manmade Hazards

Existing Conditions

Climate Change and Sea Level Rise

The extent of impacts from anthropogenic-caused climate change are regularly being evaluated by the scientific community. Common impacts associated with climate change include ocean warming and acidification, melting ice sheets and glaciers, and rising sea levels, due to an increase of greenhouse gasses in Hawai'i's atmosphere that trap heat. Rising sea levels and high-water levels caused by storms will leave coastal developed areas vulnerable to coastal erosion and sea water inundation. Chronic coastal flooding is occurring now, and over the next 30 to 70 years flooding is expected to increase with sea level rise (SLR), and impact homes and businesses located near the shoreline (HCCMAC, 2017).

One of the major effects of climate change is the impact it has on the occurrence and severity of natural hazards. An essential aspect of hazard mitigation is predicting the likelihood of hazard events in a planning area. However, due to the change in climate, the predictability of natural hazards has also changed. What is known as 100-year floods, floods that may occur once every 100 years, could occur more often, increasing the frequency of severe flooding and causing greater risks to communities. Other effects caused by global climate change include global temperature rise, warming oceans, glacial retreat, SLR, declining arctic sea ice, extreme events, and ocean acidification (HCCDA, 2020).

As temperatures rise, the State of Hawai‘i should continue to see a decrease in rainfall as Hawai‘i has already seen a 15% decrease in rainfall over the past 20 years. Other effects that Hawai‘i has seen due to global climate change is SLR eroding 70% of beaches and shoreline retreat averaging 1 foot lost per year, low coastal areas experiencing more frequent flooding due to SLR, higher temperatures causing more frequent tropical cyclones, an increase in flash flooding and infrequent rain conditions, increased risks of tsunami impacts on coastal areas, increased risk of wildfire and drought conditions, increased earthquake hazard due to shifting of plate tectonics and global ocean acidification which can negatively impact marine animals such as corals, shell fish, and plankton (HCCMAC, 2017).

The Hawai‘i Sea Level Rise Vulnerability and Adaptation Report was published in December 2017 by the Hawai‘i Climate Change Mitigation and Adaptation Commission to provide a basis for recommendations on reducing exposure and increasing adaptability to the impacts of SLR resulting from human-generated greenhouse gas (GHG) emissions. Research within the report notes that the intensity and frequency of natural disasters have increased and will continue to do so, and further provides technical Projections of areas along the Hawaiian coast that are vulnerable to SLR based on the latest available science. The report finds that for Hawai‘i, with no mitigative actions, 3.2 feet of SLR and its associated erosion, flooding, and waves will have significant impacts to the island’s land, building and land values, residents, structures, and major roadways. Rising sea levels will increase the probability of coastal flooding and erosion, which could damage coastal infrastructure. Portions of the island vulnerable to 3.2-foot SLR by 2100 are referred to as the SLR Exposure Area (SLR-XA).

The Pacific Islands Ocean Observing System (PacIOOS) manages the State of Hawai‘i Sea Level Rise Viewer, an interactive mapping tool in support of the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report. This tool provides information on SLR-XA for the Hawaiian Islands consisting of Passive Flooding, Annual High Wave Flooding, and Coastal Erosion. According to the Viewer, the area of the Project will be outside of the 3.2 ft SLR scenario. The effects of 3.2 SLR will be primarily concentrated along the coastline and shoreline area. (Figure 3-2). Project improvements will be sited near existing structures that are outside of the immediate shoreline area.



Figure 3-2 Photo of existing coastline at Mālaekahana SRA Kalanai Section (September 2025)



Figure 3-3

3.2-Foot Sea Level Rise Scenario

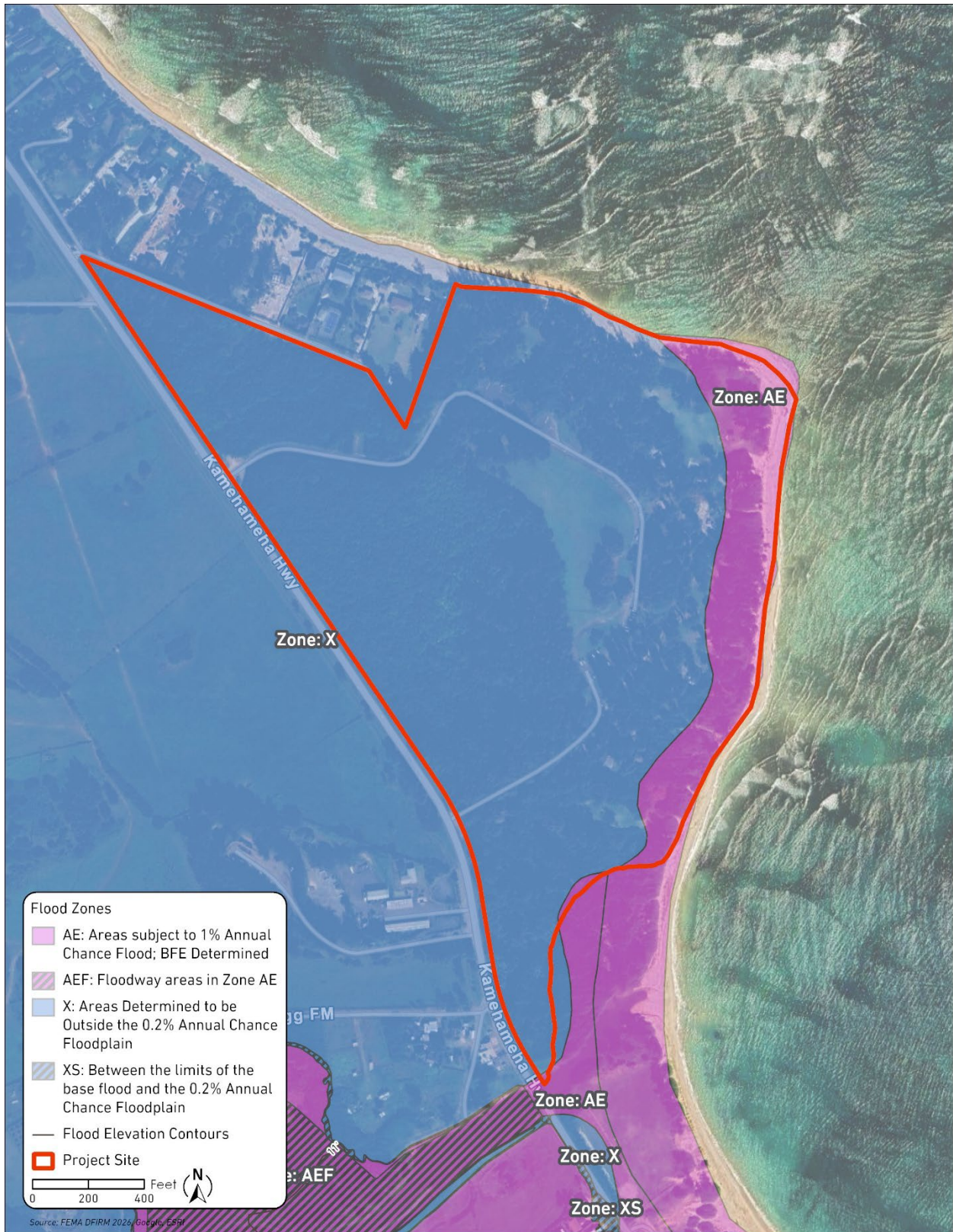


Figure 3-4

Flood Zones

Flooding

The property is relatively flat and level with an elevation ranging from approximately 5 to 15 feet above msl. Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) map number 15003C 0045H, most of the project site is within flood Zone X. The Zone X designation refers to areas outside the 0.2 percent annual chance floodplain. The makai boundaries of the project site are within Zones AE, areas subject to inundation by the 1 percent annual chance (or 100-year) floods and is subject to ocean storm surges.

Tsunami

Tsunami evacuation zone maps for the State of Hawai'i identify low lying areas where excavation is recommended since extensive damage to life and property may occur from seismic sea waves. The entire project site is within the tsunami evacuation zone (Hawai'i State Civil Defense, n.d.).

Seismic Activity

Per the 2006 International Building Code (IBC) seismic design maps, the entire City and County of Honolulu could experience seismic activity around 0.15 of the earth's gravitational acceleration (g-force) under a 1.0 second spectral response acceleration event. In comparison, the County of Hawai'i, with its ongoing volcanic activity, could experience ground motion anywhere from 0.30 up to 1.23 of the earth's g-force, demonstrating that the island of Hawai'i could experience severe seismic activity.

Hurricanes and Storm Events

In Hawai'i, northeast trade winds predominate throughout most of the year blowing at about 70% of the time. These winds generally range in velocity between 10 and 25 miles per hour (mph) with trade winds of 40-50 mph periodically occurring. Monthly counts of high wind events that have impacted the County over a 10-year period indicate that winter months are the most active. The overall average for high wind events on Hawai'i Island is 0.2 events per month which doubles to 0.4 events per month during the winter months (December- April). Windstorms can cause damage to utilities, potential disruption of energy resources, and disrupted services as a result of downed Debris. High winds can also contribute to strong surf and coastal erosion (HCCMAC, 2017).

Tropical cyclones are among Hawai'i's most destructive natural events, with hurricanes causing the greatest damage. The Central Pacific experiences four to five tropical cyclones annually between June and November, peaking in August and September—Hawai'i's hurricane season. Cyclones are classified by wind speed: tropical depressions (<38 mph), tropical storms (39–73 mph), and hurricanes (>74 mph). All can generate storm surge exceeding 15 feet, responsible for nearly 90 percent of hurricane-related deaths and injuries. Cyclones also produce damaging winds that topple trees, power lines, and structures; create flying debris; and may spawn microbursts or small tornadoes exceeding 200 mph. Heavy rainfall from these systems can last several days, causing widespread flooding even after the storm passes. Typical storm durations range from 12 to 18 hours, with slow-moving systems lasting up to 24 hours. Hurricanes are categorized by sustained wind speeds: Category 1 (74–95 mph), Category 2 (96–110 mph), Category 3 major (111–129 mph), Category 4 major (130–156 mph), and Category 5 (>157 mph). Even Category 1–2 storms can cause significant damage and warrant precautionary measures (HCCDA, 2020).

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

It is difficult to predict when these natural events may occur, but it is reasonable to expect that future events will occur and may be increasing in frequency due to global climate change. The entire State of Hawai'i is vulnerable to the damaging impacts of hurricanes. The coastal areas of the State are more susceptible to damage caused by a combination of high winds and tidal surge. Inland areas, especially those in the 1% and 0.2% annual chance flood areas designated by FEMA are at risk due to heavy rains and flooding caused by storms. The Project area is, however, no more or less vulnerable than the rest of O'ahu to the destructive winds and torrential rains associated with hurricanes (HCCDA, 2020).

Anticipated Impacts and Mitigation Measures

Unfortunately, the threat to health, safety, and property from unpredictable natural events will always be present. Proposed activities at the project site would not affect the occurrence of naturally occurring hazards. The project site is a regional recreation area that may be closed to the public due to safety concerns prior to the onset of approaching hazard events (e.g., high winds, flooding and strong surf from tsunamis and severe storms). DLNR may also close the park to ensure the safety of park users during maintenance and/or mitigation activities (e.g., tree trimming activities and the selective clearing of dangerous trees).

3.5 Biological Resources

Existing Conditions

As part of this Environmental Assessment report, AECOS conducted a flora and fauna survey of the project area on October 15, 2025. Results of the survey are summarized in the discussion below and the full AECOS report of findings is included as Appendix A.

Flora

Most of the survey area is maintained and open lawn, a few areas are in open forest while the other areas are developed (parking lots, paved paths, existing structures). Generally, identified plants tend to be trees and herbaceous plants along lawn and roadway margins. Forty-four (44) plant species were identified. Of these, only two native indigenous species and two Early Polynesian introductions were observed. These four native indigenous and Early Polynesian introduction species are included in Table 3-1.

Table 3-1 Indigenous and Polynesian Introduced Plants Observed in the Project Area				
Family	Species	Hawallan Name	Status	Abundance
ARECACEAE	<i>Cocos nucifera L.</i>	niu	Pol	U
AIZOACEAE	<i>Sesuvium portulacastrum (L.) L.</i>	'ākulikuli	Ind	R
RUBIACEAE	<i>Morinda citrifolia L.</i>	noni	Pol	U
SOLANACEAE	<i>Solanum americanum Mill.</i>	pōpolo	Ind	R

Table 3-1 acronyms:

Pol=Polynesian introduced before 1778.

Ind=Indigenous; native to Hawai'i, but not unique to the Hawaiian Islands

U=Uncommon, seen at most in several locations

R=Rare, seen in only one or perhaps two or three times.

The *Cocos nucifera* L. (niu) occur just outside the survey area. The number of species is small, and the native species count is low. Most of the survey area is maintained as parking and park use, with minimal landscaping beyond the scattered trees.

Avian Fauna

The presence of avifauna was evaluated by a qualified wildlife biologist, who observed bird species in the project area on October 15, 2025. Birds were identified by visual observation, aided by binoculars, and by listening for vocalizations. Species observed were recorded as incidental observations rather than species counts.

A total of fourteen bird species were recorded during the survey. Twelve of the 14 bird species are introduced alien species not native to Hawai‘i, one bird species is an indigenous resident species that nests in Hawai‘i (Ruddy Turnstone, aka ‘akekeke), and two bird species do not nest in Hawai‘i but are indigenous migratory birds unique to Hawai‘i (Great Frigate Bird, aka ‘Iwa, and Pacific Golden Plover, aka Kōlea). Table 2-2 lists the bird species that were observed during the avifauna field survey of the project area.

Table 3-2 Avian Species Observed in the Project Area			
Family	Species	Common Name	Status
ANATIDAE	<i>Anas wyvilliana</i> × <i>A. platyrhynchos</i>	Hawaiian Duck × Mallard hybrid	A
PHASIANIDAE	<i>Gallus gallus</i>	Red Junglefowl	A
COLUMBIDAE	<i>Spilopelia chinensis</i>	Spotted Dove	A
COLUMBIDAE	<i>Geopelia striata</i>	Zebra Dove	A
CHARADRIIDAE	<i>Pluvialis fulva</i>	Pacific Golden-Plover	IM
CHARADRIIDAE	<i>Arenaria interpres</i>	Ruddy Turnstone	IM
FREGATIDAE	<i>Fregata minor</i>	Great Frigatebird	IR
PYCNONOTIDAE	<i>Pycnonotus cafer</i>	Red-vented Bulbul	A
STURNIDAE	<i>Acridotheres tristis</i>	Common Myna	A
ESTRILDIDAE	<i>Lonchura oryzivora</i>	Java Sparrow	A
ESTRILDIDAE	<i>Estrilda astrild</i>	Common Waxbill	A
PASSERIDAE	<i>Passer domesticus</i>	House Sparrow	A
FRINGILLIDAE	<i>Haemorhous mexicanus</i>	House Finch	A
THRAUPIDAE	<i>Paroaria coronata</i>	Red-crested Cardinal	A
THRAUPIDAE	<i>Sicalis flaveola</i>	Saffron Finch	A

Terrestrial Mammals

Small Asian mongoose (*Urva auropunctatus*) and domestic dog (*Canis lupus familiaris*) were observed during the survey. Feral cats (*Felis catus*) were not observed during the biological survey. However, cats may be present.

Anticipated Impacts and Mitigation Measures

Flora

None of the vegetation within the project area is anticipated to contain Federal or State threatened or endangered or candidate species. Construction of the project is not expected to result in significant adverse impacts to threatened or endangered plant species, as the Project will be located within the existing camp areas that are unlikely to contain species listed by the USFWS under the Endangered Species Act. The native and Early Polynesian plants are common across the state. The coconut tree observed shows signs of significant damage by coconut rhinoceros beetles and will likely need to be removed in the future.

Project actions may involve the necessary removal of on-site vegetation consisting of introduced, non-native floral species in select areas. Existing stands of mature trees and areas of dense vegetation within the project site are expected to remain as vegetated buffers. Mature non-native trees will be evaluated by an arborist to identify select trees for thinning if these trees are identified as a hazard. New shade trees may also be planted with a preference for native and / or canoe plants. The project may also include landscaping in areas around new and replacement structures with native plant species.

Fauna

While no observations were made of the Hawaiian Hoary Bat within the project area during the biological survey that was conducted as part of this EA, the Hawaiian Hoary Bat may nest in the forested sections of the park. As a precautionary measure to prevent negative impacts to the Hawaiian Hoary Bat, woody plants greater than 15 feet tall should not be disturbed, removed or trimmed during the bat birthing and pup rearing season (June 1 through September 15). Site clearing should be timed to avoid disturbance to Hawaiian hoary bats in the project area.

Seabirds

To minimize adverse effects on seabird populations, outdoor lighting associated with the project shall be shielded to the maximum practicable extent. Night-time construction activities shall be prohibited, and project personnel and residents shall be provided with educational materials regarding seabird fallout. All luminaires, including streetlights, shall be shielded such that the light source is visible only from below, and the lowest feasible wattage shall be utilized.

A comprehensive lighting plan shall be prepared and incorporated into the project description to ensure the avoidance and minimization of artificial lighting impacts. This plan shall include provisions for staff and park user education on seabird fallout. Where lighting is required for safety or security purposes, fixtures shall be installed at low mounting heights, equipped with motion sensors, and fully shielded or designed with full cut-off features. Effective light shields shall be opaque, of sufficient dimension, and configured to ensure that light sources are visible only from below and not from the beach. Construction activities shall be limited to daylight hours.

Marine Species

Critical habitat for the green sea turtle (*Chelonia mydas*) begins approximately 250 feet from the project area along the park's beach. Negative impact to the green sea turtle's critical habitat can be avoided by ensuring proposed improvements are sited within the project site and away from the near-shore area.

DLNR’s Division of Aquatic Resources (DAR) has previously observed ‘opae ‘ula in the wetlands near Kahawainui Stream. Anticipated impacts to opae ula are expected to be minimal as the project will be located well away from the Kahawainui Stream and wetland area where ‘opae ‘ula were observed.

Yellow-faced Bees

Seven species of yellow-faced bees (*Hylaeuss* pp.; *nalo meli maoli*) in Hawai‘i are listed as endangered under the U.S. Endangered Species Act (USFWS, 2016). AECOS biologists observed plant resources that support yellow-faced bees, including tree heliotrope and naupaka just out of the project area. If one or more of these federally-protected species are present, negative impacts are not anticipated because the Project will be sited within the existing camping areas and avoid the plant resources that support yellow-faced bees. Additionally, the DLNR Division of Forestry and Wildlife (DOFAW) initiated a yellow-faced bee habitat project in the Kalanai Section with installation of symbolic fencing, nesting stands, and outplanting (Figure 3-5).



Figure 3-5

Symbolic Fencing at Kalanai Section

3.6 Water Resources

The Mālaekahana SRA Kalanai Section is within the Ko'olauloa Aquifer System Area (ASYA) that is part of the Windward Aquifer Sector Area on the island of O'ahu. The Commission on Water Resource Management's Water Resource Protection Plan estimates that the Ko'olauloa ASYA sustainable yield is 36 million gallons per day (MGD). According to the 2009 Ko'olauloa Watershed Management Plan BWS has been permitted by CWRM to pump up to 22 MGD, below the sustainable yield of 36 MGD. In the BWS Watershed Management Plan, the district of Ko'olauloa is anticipated to have minimal increase in water use based upon population projections and land use policies for the region (City and County of Honolulu, 2020).

The Underground Injection Control (UIC) line as determined by the HDOH Safe Drinking Water Branch determines the boundary and associated regulations that apply to areas with non-drinking water aquifers or underground sources of drinking water. Injection well activity is more regulated in areas above the UIC line to protect groundwater from contaminants such as chemical, physical, radioactive, and biological contamination. The areas below the UIC line were identified by the HDOH as areas that do not overly aquifers that are utilized as drinking water sources. The project site is makai of the UIC line and a where a wider variety of wells are allowed with a UIC permit or permit exemption issued by the DOH Safe Drinking Water Branch.

The shoreline portion of the project site is along Mālaekahana Bay, which has a marine water quality classification of Class A. The protection of Class A waters is primarily to ensure their continued use for recreational purposes and aesthetic enjoyment. Nonpoint source pollution from urban activities including sediment-laden runoff and seepage from the many cesspools within the Ko'olauloa region are known threats to marine water quality and coastal ecosystems.



Figure 3-6

Streams in the Vicinity of the Project Area

The Kahawainui Stream mouth is adjacent to the project area on the South side of Kalanai Section of Mālaekahana SRA (Figure 3-6). However, this perennial stream channel is outside of the project area. The Kahawainui Stream receives flow from surrounding tributaries including the Lā'iewai Stream and its channel features have been altered in certain locations primarily for flood control reasons. Kahawainui Stream is a vital waterway for both environmental health and flood control as it supports a diverse range of species (DLNR-DAR, 2008). To mitigate flood hazards, City and County of Honolulu maintenance crews periodically remove blockages of the stream mouth caused by debris and sand berms.

The Kahawainui Stream is currently listed on the Hawaii Clean Water Act Section 303(d) list of impaired waters. Most likely causes of the stream's impaired water quality include sediment runoff in the mauka areas of the stream's extent as well as from nutrient runoff from nearby farms and agriculture land uses.

Anticipated Impacts and Mitigation Measures

It is anticipated that the Improvements to the MālaekahanaSRA– Kalanai Section are not anticipated to significantly impact water resources in the surrounding area of the project. Potable water for the project would be supplied by the private water system owned and operated by the Laie Water Company (LWC). The projected future water use for the Kalanai Section is expected to remain comparable to current consumption levels and would fall within the withdrawal limits permitted by the State Water Commission (CWRM) for the Ko'olauloa Aquifer System Area (ASYA).

Wastewater generated from park use will be managed by an IWS as described in Section 2.3 Proposed Park Improvements. The multiple ATUs are expected to safely treat wastewater to acceptable HDOH water quality standards. The improvements associated with the proposed IWS also include an elevation mound of about 3 feet to avoid interference with seasonal high groundwater levels. Further, The Project does not include the development of injection wells for disposal of liquids.

The Project will not have a significant impact on the Kahawainui Stream or on-going stream maintenance activities. It is anticipated that the Project will have minimal long-term contribution to sediment run-off into the stream. Temporary impacts that may be caused by ground disturbing activities associated with Project construction will be mitigated by requiring the construction contractor to develop a stormwater management plan that will identify runoff and erosion control measures intended to prevent soil runoff caused by construction activities. Construction areas will be re-planted with appropriate landscaping to reduce areas of bare soil and minimize future occurrence of soil run-off activities.

Depending upon the size of the construction area, a National Pollutant Discharge Elimination System (NPDES) permit may be required for the proposed Project. Per HAR Title 11, Chapter 55, if the construction area is one-acre or more in size an NPDES permit will be required. Should an NPDES permit be required, all permit requirements will be complied with during the construction phase of the project.

3.7 Noise Conditions

Existing Conditions

There is low background noise in the vicinity of the project site. The surrounding rural community consists of residential and agricultural uses. Louder noises are most often caused by vehicle traffic along the roadways, equipment used for yard maintenance, and the occasional use of heavy equipment for agriculture or construction activities. Park users may use audio equipment to amplify music during their park use.

Anticipated Impacts and Mitigation Measures

There will be short-term noise generated during the construction. However, noise levels are not expected to adversely affect residents near the project site. Construction activities will comply with the provisions of the regulations for HAR Title 11, Chapter 46, “Community Noise Control.” The contractor will be required to obtain a noise permit in compliance with the provisions of HAR Title 11, Chapter 46, if the noise levels from construction activities are expected to exceed allowable levels identified in HAR 11-46. Heavy vehicles traveling to and from project sites will comply with the State’s administrative rules for vehicular noise control. Potential noise impacts can also be mitigated by scheduling construction activities during daytime hours to avoid noise nuisances to nearby residents during the evenings.

There will be no change in the type of park activities or permitted uses. As such, the noise levels by future park users are anticipated to be relatively the same as current conditions.

3.8 Utilities and Infrastructure

Existing Conditions

Potable Water

The project site receives water service from a privately owned potable water system. The Laie Water Company currently owns and operates the water system. The system services approximately 700 customers in the Lā‘ie community and delivers on average 1.2 million gallons per day (MGD). In September of 2025, the Laie Water Company entered into a purchase agreement with Aqua Engineers, Inc. for the sale of the water system (Hawaii Reserves, Inc. 2025). At this time Aqua Engineers, Inc. is conducting due diligence studies of the system prior to finalizing the transaction to acquire the system. Final approval of the sale of the system from the Laie Water Company to Aqua Engineers, Inc. must be obtained by the State Public Utilities Commission (PUC).

The system is supplied by groundwater from the underlying Ko‘olauloa Aquifer System Area. Potable water is conveyed to the project site via a 12-inch water main on Kamehameha Highway.

Wastewater Disposal

The Kalanai Section of the Mālaekahana SRA is not within the vicinity of the City and County of Honolulu’s public sewer system. The Kalanai Section is currently serviced by two individual wastewater systems, (IWS) each servicing one of the two existing comfort stations. These existing IWS systems were constructed in 1990. Both IWS systems have identical features. Wastewater generated by the use of each comfort station flows into an approximately 6,700 gallon concrete septic tank located

adjacent to the respective comfort station. Each septic tank is equipped with a 4-inch overflow line that discharges to three seepage pits (8-foot diameter and 8-foot deep). The subsurface leach field disposal systems are located inland within the grass field located mauka of the campground and parking lot. There are four 90 foot by 90 foot leach fields. Each septic tank flows into two leach fields, one serving as a primary absorption bed and the second leach field serving as a back-up. Each of the four leach fields were constructed with perforated pipe invert elevations at approximately 3 foot median sea level (MSL) with bottom of the gravel layer around 2 foot MSL. For both IWS systems, the 4-inch gravity flow sewerlines connecting the septic tank to the leach fields have a very shallow slope of approximately 0.3%.

DLNR reports that the two existing IWS systems require frequent pumping. During the busy summer season (June thru September) the IWSs are pumped once a month, and are pumped once every two months during other months. The frequent pumping suggests the systems are operating near or beyond their hydraulic capacity. Potential contributing factors include limited septic tank volume, root intrusion, or partial blockage within the sewer or leach field piping / gravel. Additionally State Park staff have reported that backups and overflows occasionally occur during cleaning activities, indicating the systems are unable to accommodate peak flow.

Peak flow at Comfort Station A is estimated to be between 4,287 GPD and 6,480 GPD and the peak flow at Comfort Station B is estimated to be between 3,116 GPD and 5,643 GPD. HDOH standards were used to calculate the lower range of peak flow estimates and the City and County of Honolulu Parks IWS standards were used to calculate the higher range of peak flow estimates at both comfort stations. The *IWS Assessment Report for Mālaekahana State Recreation Area Comfort Station and Site Improvements* located in Appendix B, provides detailed information on the methodology utilized to estimate peak flows at the two existing comfort stations.

Power and Telecommunications

Electrical power in the project area is provided by Hawaiian Electric Company, Inc. (HECO) via overhead lines along Kamehameha Highway. Telecommunications service in the project area is also provided via overhead lines along Kamehameha Highway by Hawaiian Telcom or Spectrum Cable. The project site receives power and communications service along Kamehameha Highway; overhead utility distribution lines are routed on wood poles within the project site. The overhead utility lines, poles, pole-top transformers, and associated appurtenances are owned, operated, and maintained by the respective service providers.

Anticipated Impacts and Mitigation Measures

The Project's anticipated potable water demand is not anticipated to have a significant impact on the Laie Water Company's private water system that services the Kalanai Section and the surrounding Lā'ie community. The proposed improvements will not significantly increase future water demand and water use. State Parks may choose to also provide signage reminding park users to conserve water and to use only the water that is needed.

The Kalanai Section's two existing IWS's are at the end of its useable life and need to be replaced. The proposed improvements to the IWS, as described in Section 2.3 Proposed Park Improvements, will increase the capacity of the park to safely collect, treat, and dispose of wastewater. Based on estimated peak flows at each comfort station, the new IWS will be designed to effectively treat and safely dispose of peak wastewater flows of 6,500 GPD at Comfort Station A and 5,700 GPD at Comfort Station B. The higher capacity design will also be able to accommodate wastewater from the new pavilions and pot-washing stations. The capacity of the new IWS better serve park users during peak

periods and more effectively mitigate impacts to the surrounding environment from wastewater generated by park use.

While the proposed design of the new IWS will include wastewater pumps which will increase operational and maintenance costs, the design will locate the ATUs and leach fields further mauka and away from nearshore waters than the existing leach fields, there by further reducing potential impacts to coastal environments. Although the proposed force mains may require more trenching through the park due to the increased distance between the comfort stations and the leach fields, any disruptions to park use during construction are anticipated to be temporary and will cease once construction is completed.

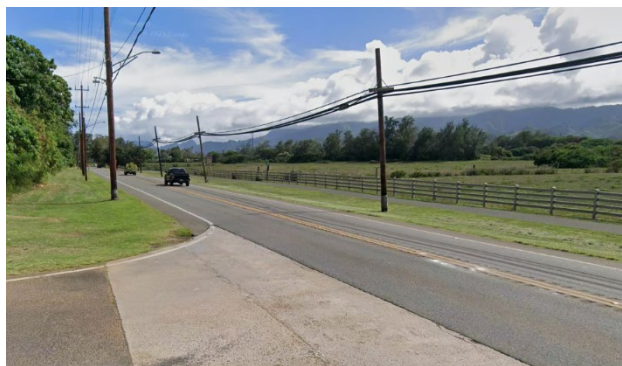
Construction may also cause brief disruptions to power and communications, but these will be short-term and managed with HECO and other providers. The proposed wastewater pump stations will increase energy consumption at the Kalanai Section. However, the increased energy demand should be within the limits of the capacity of the existing HECO system that services the Kalanai Section.

A basic level of illumination should be provided for vehicular and pedestrian movement and safety within the project site. Permanent lighting on new facilities should be fully shielded to reduce impacts on wildlife, especially seabirds, and comply with HRS 201-8.5, “Night Sky Protection Strategy.” The Project is not anticipated to significantly increase electricity demand.

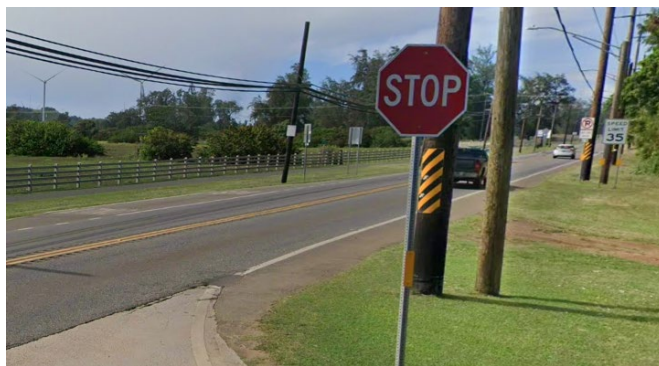
3.9 Traffic and Roadways

Existing Conditions

Vehicular access to the project site is via a single driveway along Kamehameha Highway (State Route 83). The driveway is gated and can be secured to block unauthorized entry. The posted speed limit near the site is 35 mph, and the highway is about 24 feet wide at the entrance. The entrance has sufficient stopping sight distance of over 275 feet.



Stopping sight distance (Hau'ula bound) from Mālaekahana – Kalanai Section Driveway



Stopping sight distance (Kahuku bound) from Mālaekahana – Kalanai Section Driveway

Kamehameha Highway is a two-lane main road linking North Shore communities like Hale'iwa and Pūpūkea with rural areas such as Kahuku, Lā'ie, and Hau'ula. It transitions to Kahekili Highway from Kahalu'u to the Likelike Highway (State Route 63) in Kāne'ohe. Traffic in the area can be disrupted by weather events (storms, high surf, heavy rain), special events (sports, graduations), or accidents.

There is one main driveway into the Kalanai Section. The driveway is open to public access from 7:00 am to 6:45 pm in the winter and 7:00 am to 7:45 pm in the Summer. The parking area gate is locked at 6:45 pm (winter) or 7:45 pm (summer) for security reasons to mitigate trespassing and to safeguard park facilities and the possessions of permitted overnight campers. Overnight guests are advised that they will not be able to exit the campsite until the following morning. Day users must exit the Kalanai section by 6:45 pm.

The Kalanai section driveway leads to two parking lot areas. The two parking lots are connected to each other via the main driveway.

There is a secondary entryway from Kamehameha Highway into the Kalanai section via a pedestrian trail. However, the pedestrian trail is gated and closed.

The Mākaekahana State Recreation Area can be accessed via the City and County of Honolulu's public transit service (TheBus). The Recreation Area is serviced by bus routes 60 (Kāneʻohe – Haleiwa) and 88A (Express via Kahekili). The nearest bus stop is on Kamehameha Highway and is approximately a 10 to 20 minute walk from the Kahuku Section entrance and Kalanai Section entrance.

Anticipated Impacts and Mitigation Measures

The project is not expected to affect traffic. The project is not expected to increase the population in the Koʻolauloa District and associated traffic. Park use occurs at non-peak traffic hours. No off-site improvements are required as part of the proposed project and the existing driveways for the project site are expected to remain unchanged. The transportation of equipment and material to the site along with the removal of debris and construction waste from the site may cause intermittent and temporary inconveniences to residents who live in the immediate vicinity. Appropriate traffic control devices including warning signs, lights, barricades, cones, and other safety equipment will be installed and maintained by the contractor during the construction period. Traffic control will be directed by construction personnel or by law enforcement personnel, when necessary.

The majority of construction work and the moving of heavy equipment or construction-related supplies will be scheduled during daytime hours (as opposed to night work). At night and when work is not occurring, all associated construction equipment will be secured and appropriately sited within the project site to prevent obstructions to traffic.

It will be determined during the design phase whether the operation or transportation of any oversized and/or overweight vehicles and loads will be required during construction. The transport of oversized and/or overweight materials and equipment on State highway facilities requires a permit from the State of Hawai'i Department of Transportation (DOT).

Bus routes, bus stops and paratransit operations are not expected to be impacted by project actions. The temporary increase in traffic due to vehicles and equipment accessing the project site will cease upon the completion of construction activities. DLNR personnel will continue to access the project site as part of normal operations.

3.10 Recreational Facilities

Existing Conditions

DLNR is responsible for managing state parks, historic sites, forests, reserves, fishing and boating areas, wildlife sanctuaries, and hunting grounds. The Mālaekahana SRA Kalanai Section, itself is a critical recreational facility that is frequented by residents for camping and beach use. The City's Department of Enterprise Services maintains the Kahuku Golf Course, is located within a mile north of the Mālaekahana SRA Kahuku Section.

There are other coastal recreational resources within the vicinity of the project area along the shoreline. Two managed areas include the Mālaekahana SRA Kahuku Section and privately owned and managed Hukilau Beach Park.

Wildlife sanctuaries invite visitors to enjoy quiet recreation like watching and learning about native seabirds, plants, and insects. Just over a mile northwest of the project site is the James Campbell National Wildlife Refuge, a haven for native species. About a mile southeast offshore sites Mokuauia (Goat Island), part of the Hawai'i State Seabird Sanctuary, where seabirds nest.

The privately owned Polynesian Cultural Center (PCC) is about 1.5 miles from the Kalanai Section. PCC provides its visitors with educational enrichment about various Polynesian cultures through programs and demonstrations.

Brigham Young University – Hawai'i provides recreational opportunities primarily to its students, faculty, and staff. On campus recreational facilities include a bowling alley, gyms, student center, and open space lawn areas. The University is about 1.25 miles from the Project area.

Anticipated Impacts and Mitigation Measures

The Project consists of site improvements within an existing state recreational area that would support the continuation of existing uses such as camping, lodging and day use activities. The Project is anticipated to have positive impacts on existing recreational facilities in the project area that will help to mitigate park visitor impacts to the surrounding natural environment.

3.11 Police

Existing Conditions

The Lā'ie community is served by the City and County of Honolulu Police Department (HPD) District 4 which covers the area from Kāne'ōhe to Kahuku. The Kahuku Substation is located approximately 0.75 miles from the project site.

Anticipated Impacts and Mitigation Measures

This project will not impact the Police Department's operations or ability to provide adequate services to the surrounding community. HPD states in its EA comment letter, dated November 5, 2025, that the project should not have a significant impact on its services or operations.

3.12 Fire

Existing Conditions

The Honolulu Fire Department (HFD) provides fire protection for the area. The Kahuku Fire Station is located on Kamehameha Highway next to the police substation.

HFD works with the Emergency Medical Services, who dispatch the closest available unit. During an emergency, this may be either an EMS ambulance or a fire company depending on the type of emergency and location. Since there are only 16 EMS stations on O‘ahu, fire companies are frequently the first responder.

Anticipated Impacts and Mitigation Measures

This project is not expected to impact the Fire Department’s operations or ability to provide fire protection services to the project site and the surrounding residential neighborhood. The project will comply with applicable provisions of the National Fire Protection Association fire code, in addition, building design plans will be submitted to HFD for review and approval to ensure buildings meet fire code requirements.

3.13 Emergency Medical Services

Existing Conditions

The nearest hospital to the Project is Kahuku Medical Center, located approximately 2 miles north of the Mālaekahana SRA Kalanai Section. The closest ambulance service by EMS is stationed at the Kahuku Fire Station, which transports patients to the Kahuku Medical Center.

Anticipated Impacts and Mitigation Measures

The Project will not impact the handling of EMS or medical emergencies. The Kahuku Medical Center will be accessible should there be an accident or illness affecting workers at the project site. No mitigation is proposed.

3.14 Solid Waste Management

Existing Conditions

There will be solid waste generated from demolition and construction activities associated with the Project.

Solid waste is also generated by park users during normal park operations. The volume of solid waste generated at the Kalanai Section fluctuates depending upon park use. Typically, more solid waste is generated during summer months or over the course of holiday weekends as the number of visitors is greater during those periods. Solid waste management and disposal at the Kalanai Section is provided by a private contractor. Solid waste generated at the park is regularly transported by the private contractor off-site to a municipal landfill.

Anticipated Impacts and Mitigation Measures

The solid waste generated by construction activities will be disposed of off-site at waste management facilities that are designated to accept construction and demolition waste. The generation of construction and demolition waste is anticipated to be temporary in nature and only occur during construction of the Project. DLNR will ensure that appropriate waste management and disposal practices are implemented by the construction contractor.

Solid waste from normal park operation will continue to be disposed of off-site at a municipal landfill . No significant increase in the volume of solid waste during normal park operation is anticipated to be caused by the Project.

3.15 Historic, Archaeological and Cultural Resources

3.15.1 Historic and Archaeological Resources

An Archaeological Literature Review and Field Inspection (ALRFI) was conducted by Honua Consulting LLC for the project and is included as Appendix C. The following section summarizes the major findings from the ALRFI report.

Previous Archaeological Research in the Vicinity of the Project

Previous archaeological studies in the vicinity of the project area were analyzed to develop predictive data about the types and distribution of archaeological historic properties and their component features that may be encountered during the implementation of the Project. Previous Archaeological Studies in and near the Project Area are detailed in the ALRFI report (*Appendix C*). There were a total of 20 previous archaeological studies that were conducted within the vicinity of the project area to date. Table 3-1 from Appendix C summarizes findings from previous archaeological studies conducted within the vicinity of the Project.

Reference¹	Type²	Location	Results & Comments
McAllister 1933 Thrum 1938 Sterling & Summers 1978	Earliest survey / compilations of sites on O'ahu	O'ahu Island-wide (these studies are not depicted in Figs. 14 & 15 since they are island-wide)	Several "McAllister sites" are within 0.5 miles of current project area: 273 (traditional Hawaiian house site remains), 274 (fishing shrine [ko'a] and human burial), 275 (Wai'āpuka Pūnāwai) and 276 (Waiku'uku'u Pūnāwai) (see text for a full description); 273 & 274 are in the subject parcel but not the construction footprint
Hammatt 1977	Subsurface soil analysis	Mālaekahana SRA – current project- area parcel	Documented 2 subsurface cultural layers that were not formally designated w. site #s
Olson 1979	Analysis of volcanic glass		Identified 3 flakes and 12 fragments that were intentionally produced (i.e. they had percussion features)

Table 3-3 Previous Archaeological Studies and Results within the Vicinity of the Project Area

Reference ¹	Type ²	Location	Results & Comments
Yent & Estioko-Griffin 1980	AIS*		Recorded SIHP # 02801, including 2 subsurface cultural layers identified by Hammatt (1979), the previously known ko'a (SIHP 00274) and a human burial.
Yent & Ota 1982	Subsurface testing (auger coring)		Further documentation of SIHP # 02801
Griffin and Yent 1986			Objective was to explore and define lateral limits of SIHP # 02801
Smith 1990			Nothing new identified
Carpenter 1996	AM		No historic properties identified; monitoring seepage pit installation
Carpenter 2012	AM		No historic properties identified; monitoring of IWS upgrades
Ahlo & Hommon 1981	ARS	Kahawainui Stream floodplain including south end of Mālaekahana SRA – portion of current project- area parcel	No archaeological finds reported but mentions remnant of Shinto shrine and a cemetery
Neller 1984a, b	ARS		Supplemental investigations to Ahlo and Hommon (1981) documents remains of a Japanese cemetery and Shinto shrine, plantation camp, a railroad bed, sacred stone of Hauwahine, and house ruins
Bath 1985	AIS*	Kahawainui Stream	Identified 5 site-features: 2 historic-period cemeteries, 1 rock alignment, 1 cave and 1 rock mound; 2 subsurface pre-Contact cultural layers also identified
Jensen 1989	ARS	Project area extended in a narrow swath from Kamehameha Highway back into the uplands; proposed golf course that was never built	6 sites identified in Mālaekahana, designated SIHP #s 04088-04093; sites included 3 overhang shelters/temporary habitations, 2 cave habitations, 1 plantation-era irrigation ditch and tunnel and 1 platform/mound interpreted as a possible habitation or historic-period burial
Kennedy 1990	ARS		Revisited and reevaluated sites identified by Jensen (1989)
Kennedy 1989	ARS	Another proposed golf course that was never	Identified 19 sites, including traditional Hawaiian habitation and agricultural areas,

Table 3-3 Previous Archaeological Studies and Results within the Vicinity of the Project Area			
Reference¹	Type²	Location	Results & Comments
		built (today's approximate boundaries of Gunstock Ranch)	as well as a military gun emplacement and railroad bed; no SIHP #s were assigned in this report; Monahan 2005 subsumed and included Kennedy 1989 results
Dunn et al. 1992 Halpern & Rosendahl 1995	AIS Add. AIS	Lā'ie Master Plan project; included portions of Lā'ie & Mālaekahana	Multiple sites identified; closest to current project area (see Fig. 15) were SIHP #s 04465 (human burial) and 04468 (human burial)
Monahan 2005	AIS	500-acre triangular portion of Mālaekahana Ahupua'a from highway back mauka	43 historic properties identified; most of these (n=32) were historic-period plantation sites; the other 11 date from pre-Contact to early historic period, including 2 burial sites (SIHP #s 06775 & 06783), a subsurface cultural layer w. well-preserved imu (SIHP # 06779) and a more in-depth study including subsurface testing w. a radiocarbon date of Wai'āpuka Pool (SIHP # 00275); see text for details
McElroy 2016	AIS	Dune setting just north of current project area	No historic properties identified
McElroy & Duhaylonsad 2017	AM	Kamehameha Highway	No historic properties identified

¹ Arranged chronologically but also grouped together by project area when applicable.

² Abbreviations: Add. AIS = addendum archaeological inventory survey, AIS* = archaeological work that included mapping and subsurface excavation, thus satisfying current AIS standards, AIS = archaeological inventory survey, ALRFI = archaeological literature review and field inspection, AM = archaeological monitoring, ARS = archaeological reconnaissance survey

Figure 3-7 and Figure 3-8, are maps taken from the ALRFI that summarize the approximate geographic extent of previous archaeological studies and the location of archaeological sites that were identified during those studies.

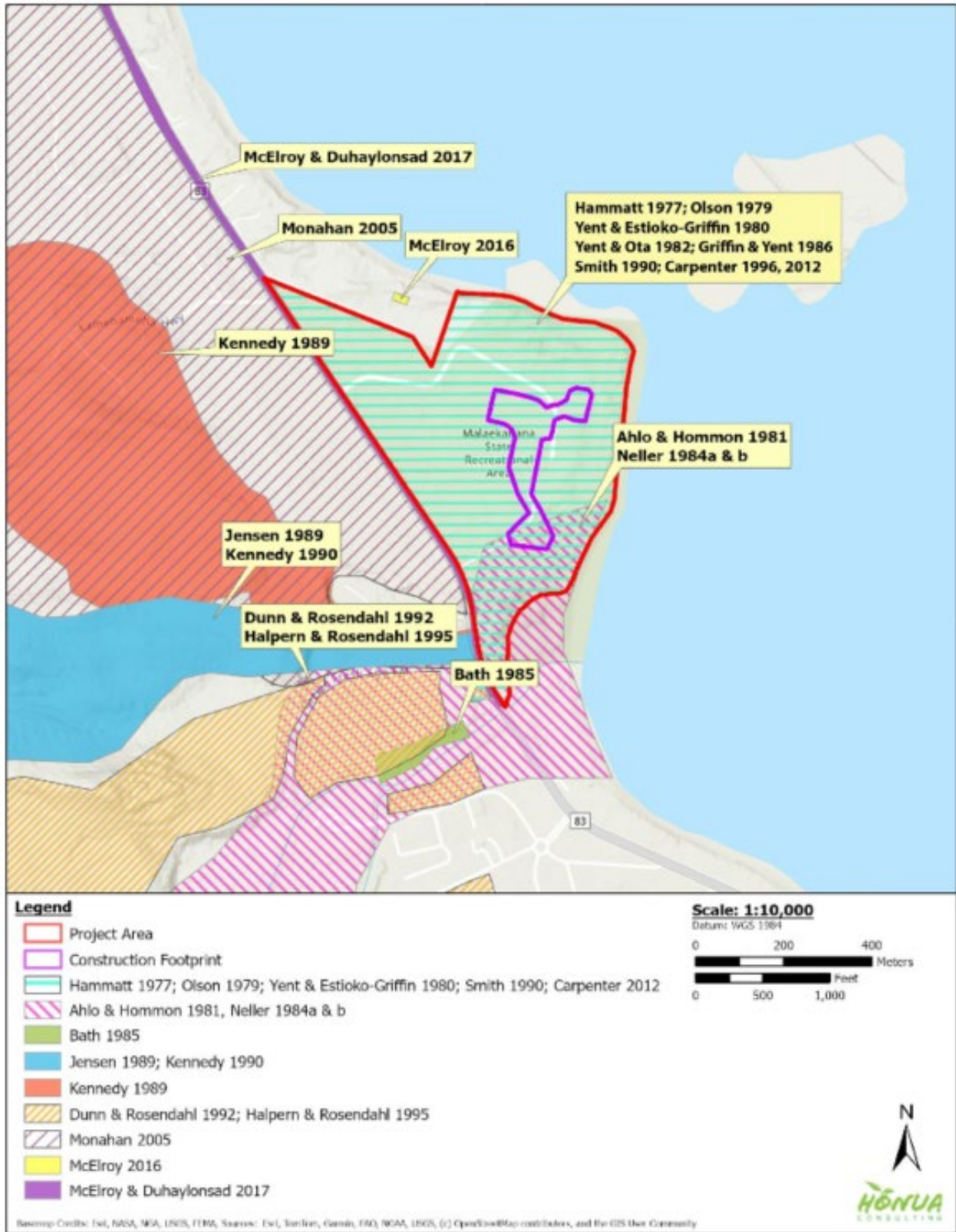


Figure 3-7

Previous Archaeological Studies Near Project Area

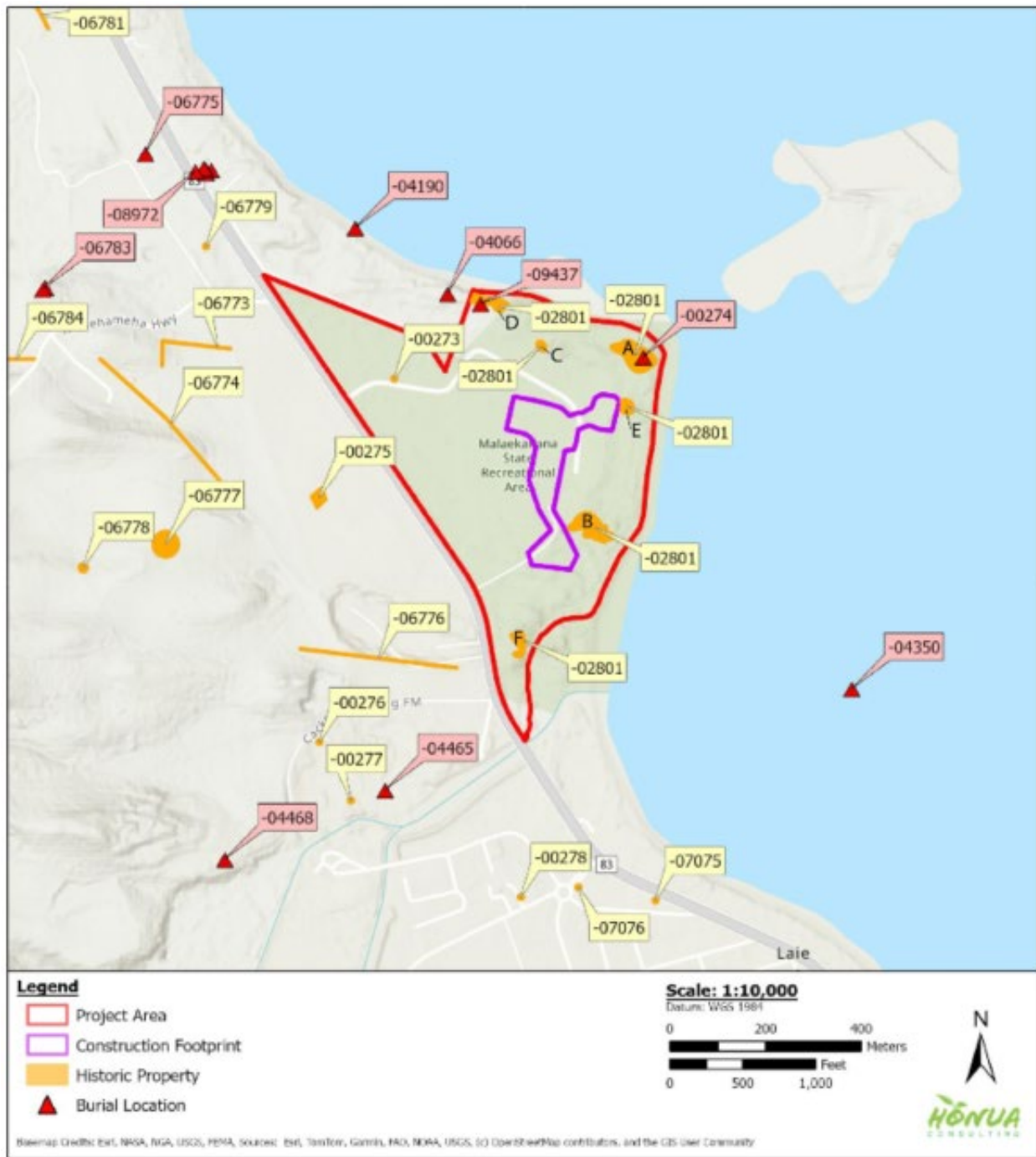


Figure 3-8 Known Archaeological Sites Near Project Area
 SIHP # 04350, in the ocean, is not a typo.
 SIHP # 0281, letters A thru F are designated areas of this subsurface cultural deposit.

The literature review of past archaeological studies of the project area and surrounding area support the following main conclusions:

- (1) Most of the subject parcel consists of stabilized sand dunes just back of the shoreline with more level, but still sandy terrain behind it, including the area where planned construction of the Project may occur.
- (2) The northwestern part of the Mālaekahana SRA Kalanai Section, but outside of the Project's construction footprint, would have been amenable to traditional Hawaiian settlement and cultivation since this area was not dominated by sand deposits. This northwestern portion was used for commercial sugarcane in the historic period.
- (3) The sand deposits, since they were suitable neither for permanent house sites nor agricultural pursuits, were commonly used by Hawaiians in pre-Contact to early historic times for human burials as well as more temporary shelters for fishermen and others accessing the shoreline for subsistence purposes. A well-known traditional Hawaiian ko'a (fishing shrine) is located at Kalanai Point (State Inventory of Historic Places (SIHP) site # 00274).
- (4) The sand-dune and level-sand areas, including the construction footprint, were not utilized in the historic period by either commercial agriculture or ranching, since these soils and physiographic setting were not ideal for either of these common economic land uses.

Lastly, the archaeological literature review identified two historic properties within the Mālaekahana SRA Kalanai Section, these include:

1. SIHP site # 00274, which includes a fishing shrine (ko'a) and human burial. SIHP is within the park area, but not within the Project's construction footprint.
2. SIHP site # 50-80-02-02801, which is a discontinuous site that spans multiple locations within the park area designated by areas A thru F in Figure 3-8. SIHP #02801 is a subsurface cultural layer in the park's sand dune deposit and includes firepits, imu, post holes, midden, and portable artifacts interpreted as fishing and domestic implements. Areas B and E of SIHP #02801 are within close proximity to the Project's construction footprint.

Results of Field Inspection

As part of its ALRFI study, Honua conducted field work on December 23, 2025. The field inspection consisted of pedestrian survey of the area of above ground features where construction work is planned for the Project. Narrowly-spaced transects oriented east to west were walked from the north end of the construction footprint to the south.

As described in the ALRFI, Appendix C, field work resulted in the following findings:

1. Except for one possible case, no historic or potential historic properties were observed on the ground surface within the proposed construction area; previous archaeological surveys and documentation since the late 1970s likewise found no site features within the planned construction footprint.
2. The one possible case that was encountered during the field inspection was a concrete structure that may represent an architectural historic property, possibly a small, military pillbox, appears to be located at or just outside of the boundary of the southeast corner of the current construction footprint. See Figure 3-7.
3. No exposed erosional features in the construction footprint were observed; thus, it is not possible to make any definitive statements about the nature of the subsurface deposits based on this field inspection.

Anticipated Impacts and Mitigation Measures

The ALRFI identified two historic properties (SIHP #00274 and 02801) and one possible historic property that could be a small military pillbox. As mentioned above, SIHP #00274 and the potential military pillbox are within the park area but outside of the Project’s anticipated construction footprint. Impact to these two resources is anticipated to be minimal as construction of the Project will be located away from and avoid these two historic resources.

However, Areas B and E of SIHP #02801 are immediately adjacent to the potential construction footprint. Consultation with SHPD on appropriate mitigation measures and implementation of all required SHPD mitigation measures will occur prior to and during construction. Mitigation measures could include and not be limited to additional subsurface testing in the precise location of planned improvements and / or archaeological monitoring during construction. Consultation with SHPD will occur as the detailed project design drawings are developed.

The area of the Project’s construction footprint consists of sand dune deposits. Deposits of this type are known to contain discontinuous (i.e. hard to predict) evidence of traditional Hawaiian cultural material as well as burials throughout the state. To minimize impacts on potential subsurface resources, new comfort stations and the IWS will be placed within the footprint of existing facilities as much as possible where previous archaeological monitoring during construction of the existing facilities found no sensitive materials (Carpenter 1996, 2012). Furthermore, if any historic properties are encountered during construction, work will stop immediately, and SHPD will be notified. In accordance with HAR 13-300-40, should inadvertent burials be discovered during construction, work will immediately cease, the location of the discovery will be secured and protected from weather, people, and equipment. Iwi will be covered and not exposed to the sun. Notice of the burial discovery will be immediately provided to HPD, City and County medical examiner, and SHPD’s Burial Sites Program.

3.15.2 Cultural Resources

A Cultural Impact Assessment (CIA) was completed for the project by Honua Consulting LLC (Appendix D). The CIA was prepared in compliance with HRS Chapter 343, Act 50 (SLH 2000), and the *Ka Pa‘akai o ka ‘Āina* framework, with the objective of identifying valued cultural, historic, and natural resources; assessing potential effects to traditional and customary Native Hawaiian practices; and recommending feasible measures to reasonably protect those practices.

Consistent with the Native Hawaiian world view that natural resources and cultural resources are one in the same, Honua Consulting utilizes the term “biocultural” in its CIA report to refer to both natural and cultural resources that may be of importance to Native Hawaiians. The CIA differs from the ALRFI report discussed in the previous section as the ALRFI primarily focused its analysis on tangible historic properties such as sites, structures, artifacts, or subsurface deposits while the CIA focused on both tangible and intangible cultural resources including beliefs, practices, and traditional Native Hawaiian rights exercised in an area. Below is a summary of major findings from the CIA report.

Existing Cultural Resources in the Project Area

The CIA inventoried cultural resources in the Mālaekahana project area, categorizing these resources into three types: (1) historic properties and sites, (2) biocultural resources, and (3) intangible elements.

The CIA identified previously documented **historic properties and cultural sites** within the Mālaekahana project area, drawing primarily from McAllister's 1933 archaeological survey of O'ahu. Key features include fishing shrines (SIHP 50-80-14-00272, 00274), habitation platforms, agricultural terraces and enclosures, and the house site of kahuna Manuahi—recognized as a significant wahi pana associated with spiritual authority. While surface visibility of these features is limited due to coastal erosion, vegetation overgrowth, and prior land modification, their recorded locations remain relevant for cultural landscape assessment and project planning. No new archaeological sites were identified during the CIA's high-level review, but the inventory confirms long-term traditional Hawaiian use of the coastal plain. These findings establish a baseline of tangible historic properties requiring consideration under HAR Chapter 13-275 and NHPA Section 106 during ground-disturbing activities.

The CIA inventoried natural resources with cultural significance (**biocultural resources**) essential to traditional Native Hawaiian practices within the Mālaekahana project area. The assessment applied a Hawaiian worldview where natural and cultural elements are inseparable, with all landscape features holding value for sustaining customary activities. These resources form the foundation for practices including gathering, fishing, medicine, and ceremonies were documented in Appendix D.

Flora and Fauna. Native and canoe plants—kalo, 'uala, niu, coastal naupaka, 'ilima, and others — provided food, medicine, cordage, dyes, and ritual materials historically and retain cultural significance even in disturbed park settings. Fauna includes reef fish, limu species, seabirds, and marine life central to subsistence economies, mo'olelo, and ceremonial protocols. Species abundance and access supported maka'āinana self-sufficiency within the ahupua'a system.

Water, Rains, and Winds. Water resources anchor the landscape: Kawaikāne Stream irrigated lo'i kalo; Waipunaea spring supplied drinking water and appears in La'ieikawai mo'olelo; nearshore reefs and historic fishponds (Loko Waipunaea) enhanced fisheries. Named Ko'olauloa rains (e.g., Lā'ie ua) and winds preserved in mele encode environmental knowledge, seasonal patterns, and navigational cues essential to traditional resource stewardship.

The CIA researched **intangible cultural resources** - 'ōlelo no'eau, mele, and associated traditions—that animate Mālaekahana's physical landscape. These living expressions transmit generational knowledge, values, and place-based relationships essential to Native Hawaiian cultural identity.

'Ōlelo No'eau. No proverbs specific to Mālaekahana were identified, but regional Ko'olau sayings reflect the area's abundance and prominence (e.g., "Nā pali hauliuli o ke Ko'olau"; "Lā'ie i ka eheu o nā manu"). These concise wisdom statements encode environmental observations, moral guidance, and community identity.

Mele. Songs and chants function as verbal maps documenting travel routes, resource locations, chiefly genealogies, and historical events. Mele preserve intimate landscape knowledge across generations, serving as cultural repositories that complement physical features and sustain traditional practices.

Ethnographic Data

Ko'olauloa benefits from BYU-Hawai'i's oral history collection documenting kūpuna knowledge from 1970-1979 interviews by scholars like Clinton Kanahele. The CIA researched two oral history interviews, a 1970 interview with William Isaac Kananui and Malaea Lahela Kananui and a second 1979 oral interview with Bella Linkee and Ruby Enos. In summary, these oral histories captured place-based memory, genealogy, and lived experiences in Hawaiian and English, focusing on daily interactions with 'āina through subsistence, travel, labor, and worship rather than modern boundaries. Interviewees emphasized intergenerational relationships, landscape movement, and functional coastal-inland connectivity. Mālaekahana appears within this broader cultural landscape tied to Lā'ie via transportation corridors and shoreline access, not as an isolated site. Narratives reveal intergenerational place-based relationships sustained through movement across coastal-inland corridors.

In addition to accessing prior oral history records, contemporary interviews were conducted with three cultural informants, Tau Hanneman, Keali'i Bush, and Matthew Sproat. In summary, these interviewees affirmed ongoing surfing, camping, fishing, and stewardship in the surrounding area of the project site, while expressing concerns about overuse, resource degradation, and maintaining rural character. All emphasized the critical importance of public beach access, family traditions, and ecological integrity for cultural continuity.

Traditional or Customary Practices in Mālaekahana and Surrounding Area

The CIA report documented traditional customary practices that may have occurred near the Project and surrounding area based on the above research and data sources. Note, the practices listed in the CIA were not meant to be a comprehensive list of all practices that historically or contemporaneously occur in the project area. The findings are meant to show the range of traditional or customary practices that took place in the larger geographic extent of the area. Many of these practices may not have taken place within the Mālaekahana SRA Kalanai Section itself, although these practices may actively occur within the larger ahupua'a. A listing of these practices is below. A more detailed description of these practices can be found in Appendix D.

- Mo'olelo and Mo'o Traditions
- Habitation
- Travel and trail usage
- Farming
- Lā'au lapa'au
- Kilo
- Ceremonial practices
- Haku mele, haku oli, and hula
- Ranching and paniolo culture
- Surfing
- Fishing, spearfishing, and limu picking
- Beach access

Anticipated Impacts and Mitigation Measures

Based on the above research conducted during the CIA and the description of the Project, overall impacts to cultural resources or practices anticipated from the Project are anticipated to be minimal. Impacts to flora at Mālaekahana are expected to be minimal and unlikely, as proposed improvements are largely confined to previously disturbed areas. Potential impacts may include short-term vegetation disturbance during construction activities. Coastal and inland plant communities remain culturally and ecologically important and should be protected. Potential impacts to fauna at Mālaekahana are expected to be minimal, as project activities are limited in scope and primarily located within previously

disturbed areas. Temporary disturbance to terrestrial and marine fauna may occur during construction due to noise, human presence, or short-term changes in access. To ensure impacts remain minimal, all work should follow the recommendations related to biological resources outlined in Section 3.5 Biological Resources.

Potential impacts to historic sites at Mālaekahana are expected to be minimal and unlikely due to the scope of the Project will largely be located within the footprint of existing structures and away from known tangible historic properties and sites (as discussed in Section 3.15.1, Historic and Archaeological Resources). Interviewees nonetheless expressed concerns regarding the potential presence of iwi kūpuna, noting the long history of Hawaiian use of the area and the sensitivity of coastal sandy environments. While no adverse impacts are anticipated, all project activities should adhere to the mitigation recommendations and protocols outlined in the ALRFI and summarized in Section 3.15.1 Historic and Archaeological Resources, including having an archaeological monitor present during all phases of ground disturbing work.

Potential impacts to intangible cultural heritage at Mālaekahana are not anticipated. The proposed work is limited in scope and is not expected to affect the meanings, memories, stories, and spiritual associations attached to the place. Mālaekahana's cultural identity, sense of continuity, and role in community history are expected to remain intact, with no adverse effects on the intangible heritage values associated with the landscape.

Potential impacts to cultural practices at Mālaekahana are expected to be limited; however, interviewees expressed concerns that construction activities could temporarily disrupt ongoing customary and community uses of the park and shoreline. Practices such as fishing, surfing, gathering, reflection, and informal ceremonial activities rely on continued access, openness, and a sense of refuge. Even short-term construction, noise, or restricted areas may discourage some practitioners if not carefully managed. To minimize potential impacts, beach and park access should be preserved to the greatest extent possible throughout construction, with work areas clearly defined and limited in footprint. Advance public notices and regular updates are strongly advised to keep the community informed of construction schedules and temporary closures, allowing families and practitioners to plan accordingly.

Interviewees also emphasized the importance of sensitivity around the memorial honoring Tamayo Perry. Construction crews should be clearly instructed to avoid the memorial area, leave it undisturbed, and allow continued access for family members, lifeguards, and community members. Respectful management of these considerations will help ensure cultural practices can continue without adverse impact.

Further, it is recommended that as this project progresses towards implementation, DLNR and its project team remain in close communication with the surrounding stakeholders to remain aware of any potential unanticipated issues that may arise and immediately respond to those issues.

Lastly, as the Project is anticipated to utilize federal funds, consultation will be done in accordance with Section 106 of the National Historic Preservation Act and will provide additional opportunities for members of the public to identify important cultural resources that may be unintentionally impacted by the Project and additional mitigation measures that the Project may incorporate to minimize those impacts.

3.16 Visual and Scenic Resources

Existing Conditions

The Mālaekahana area is defined by farmland, low-density housing, churches, parks, and community facilities. From Kamehameha Highway, the shoreline is mostly hidden by thick vegetation and tall trees on the site. This greenery creates a scenic corridor along the highway while screening most human activity in the recreation area. There are views of the Koʻolau Mountain Range from the campground area.

Anticipated Impacts and Mitigation Measures

The proposed project is expected to have no impact on scenic vistas or view planes. The proposed comfort station renovations will not significantly increase the height of the comfort stations. The new pavilion and pot-washing station will also be relatively the same height as the comfort station or lower. The visual impact of these new structures is expected to be obscured by existing trees and dense vegetation within the project site. The natural character of the project site may be further emphasized by additional measures such as painting building elements to complement the natural setting and landscaping the areas around the structures. The current structures are not anticipated to block any existing view planes.

3.17 Socio-Economic Characteristics

Population

The Mālaekahana SRA Kalanai Section is in the City and County of Honolulu’s Koʻolauloa district. According to the State of Hawaiʻi Databook prepared by the State Department of Business Economic Development and Tourism (DBEDT), the Koʻolauloa community has a population approximately 16,600 people in 2020 which constitutes about 1.6 percent of the Oʻahu’s total population of 1,016,500. Comparatively, in 2010, the Koʻolauloa population was 14,150 and made-up 1.5 percent of Oʻahu’s population of 911,840 at that time. The district’s population increased by 17 percent between 2010 and 2020 while Oʻahu’s overall population increased by 11.4 percent during that same period. The percentage of Oʻahu residents that reside in Koʻolauloa remained relatively the same between 2010 and 2020.

School Enrollment

Table 3-2 summarizes the enrollment numbers for public schools that are in the Koʻolauloa District during the 2024-2025 school year.

Table 3-4: Enrollment numbers for public schools in the Koʻolauloa District, 2024-2025 school year (DOE, 2025)	
School	Enrollment
Kahuku High and Intermediate	1,433
Kahuku Elementary	331
Hauʻula Elementary	375
Kaʻaʻawa Elementary	129
Lāʻie Elementary	648

Employment and Job Centers

The Koʻolau District is a predominantly rural community with fewer commercial and industrial areas compared to the primary urban core of Honolulu. Primary employment hubs in the district include Brigham Young University – Hawaiʻi, the Polynesian Cultural Center, and Turtle Bay Resort. Other commercial centers near the project area include the approximate 64,000 square foot Lāʻie Shopping Center and the 53,300 square foot Hauʻula Shopping Center.

Anticipated Impacts and Mitigation Measures

The proposed improvements to the Mālaekahana SRA Kalanai Section will not impact population growth or increase the demand for housing and schools. Employment and economic opportunities are also not anticipated to be affected by the project. Construction phases will generate short-term employment. Park users may also frequent nearby shopping centers for food and supplies. No mitigation measures are necessary.

3.18 Potential Cumulative, Indirect, and Secondary Impacts

Per HAR §11-200.1-2, cumulative impacts result from an action's incremental effects when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individual minor actions that become collectively significant over time. Indirect or secondary impacts are associated with but do not result directly from an action. They are reasonably foreseeable impacts that are caused by the action but are distanced by time and space from the Site. Indirect impacts may include growth-inducing effects and other effects related to changes in land use patterns, population density, and related effects on air, water, and other natural resources.

The DLNR State Parks Division also planned and implemented improvements at the Mālaekahana SRA Kahuku Section and prepared a HRS 343 Environmental Assessment in 2016 for the Kahuku Section improvements (Limitaco, 2016). Taken together, the Kahuku Section improvements and the proposed Kalanai Section improvements are not anticipated to have a significant cumulative impact on the surrounding area or community. Improvements at both Mālaekahana SRA Sections are intended to support existing park uses and will not introduce new types of uses or impacts to these recreation areas. Furthermore, improvements made at both SRA sections will mitigate the impacts of park visitors to the surrounding environment and allow continued safe and healthy access to these areas in the future. Best management practices during construction phases were implemented at the Kahuku Section and will also be implemented at the Kalanai Section to mitigate construction related impacts.

No significant secondary effects, including population changes, are expected from the proposed Mālaekahana Kalanai Section, which will continue the park's existing uses. The planned improvements will support and enhance the site's ongoing availability for public use.

This page left intentionally blank.

Alternatives to the Proposed Project

Chapter 4

Alternatives to the Proposed Project

The following presents an analysis of the alternatives to the proposed project. Of note, Alternative B (Rehabilitate Existing IWS), Alternative C (Install Two New IWS Located at Each Comfort Station), and Alternative D (Preferred Alternative) were developed and evaluated by Island Enginuity and are detailed in the IWS Assessment Report in Appendix B.

4.1 Alternative A – No-Action Alternative

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

The No-Action Alternative would mean not implementing the park improvements described in Section 2.3 Proposed Park Improvements of this EA. The proposed improvements at Mālaekahana SRA Kalanai Section seek to upgrade aging facilities to better serve current and future users while reducing environmental impacts from ongoing park use and to provide additional recreational amenities and opportunities at the Kalanai Section for members of the public.

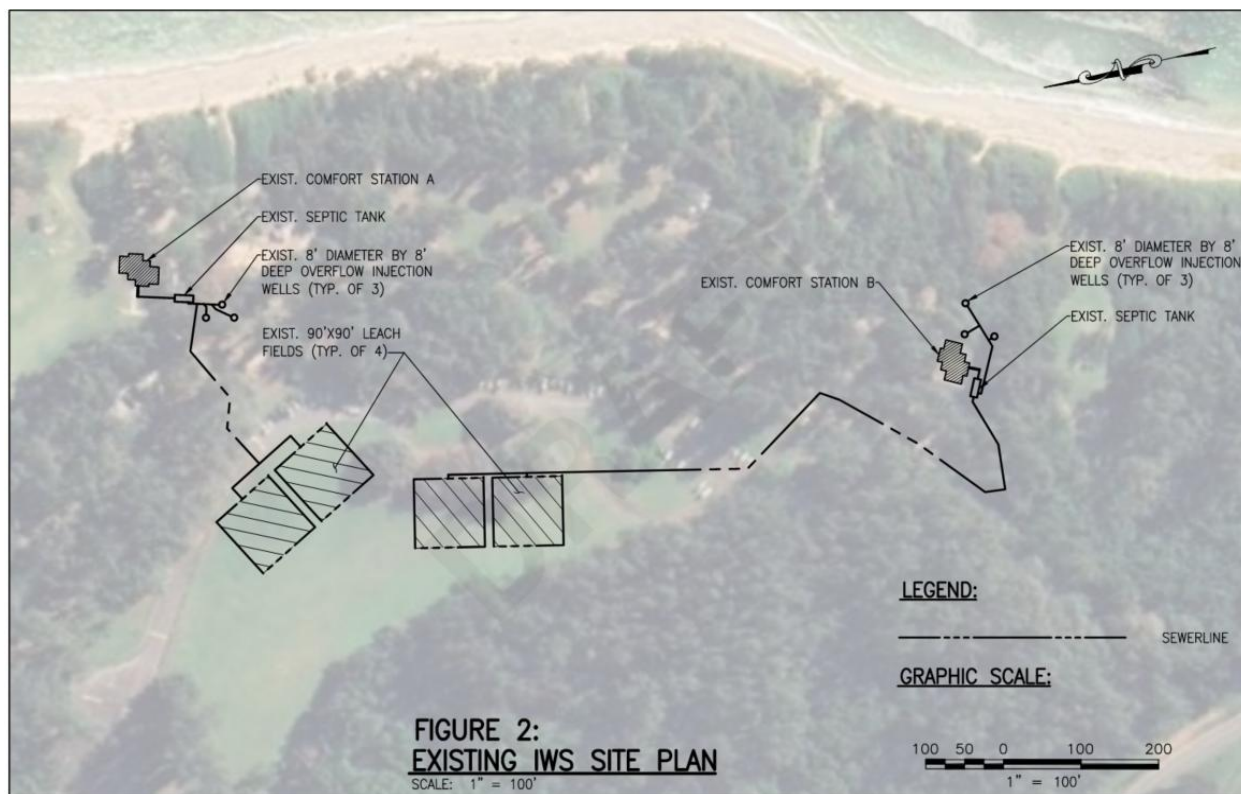


Figure 4-1

Existing IWS System – No Action Alternative

Failure to implement facility upgrades at the Kalanai Section, including the installation of new comfort stations and an improved wastewater system (IWS), would likely result in unsanitary conditions, creating potential health and safety concerns for park users and environmental degradation associated with inadequate wastewater management. Continued inaction could result in permanent closure of the park and would not meet the identified recreational needs of the public or reduce the existing demand for recreational opportunities within the Kalanai Section.

4.2 Alternative B – Rehabilitate Existing IWS

This alternative would require a detailed study to identify parts of the existing IWS that are not functioning properly and in need of repair to restore capacity. Under this alternative the Department of Health’s Wastewater Branch (DOH WWB) may also require upgrades to meet current standards. However, this may not be feasible since the absorption beds are likely within 3 feet of the seasonal high groundwater level, which would require replacing the system with an Aerobic Treatment Unit (ATU).

Other parts of the existing system may also be inadequate to support future use, including the proposed 100-person group camping area. The septic tanks are too small to handle the increased number of campers and visitors, resulting in reduced treatment performance and the need for replacement. In addition, much of the existing sewer piping do not meet current standards; the low slope (0.3%) limits gravity flow and increases the risk of blockages or backups. To ensure reliable wastewater conveyance, pump stations and electrical utilities may also need to be installed at each comfort station.

Overall, substantial upgrades to the wastewater system would be required to support projected future increases in park visitation numbers. Further, Alternative B is not practical due to the number of system deficiencies, required replacements, and likely upgrade mandates from DOH WWB. The work needed would be nearly equivalent to building a new system, providing minimal practical or cost advantage.

4.3 Alternative C – Install Two New IWS Located at Each Comfort Station

Alternative C would install two new IWS units near each comfort station, each with its own pre-loader, ATU, and absorption bed. All components would meet State DOH WWB IWS Standards and handle the increased flow from the proposed 100-person camping area. Higher ground elevations may provide enough separation from groundwater for gravity flow, though further design work is needed to confirm this.

The challenges of this alternative involve site constraints. Additional studies are required to verify if suitable locations meet siting and separation standards. Because both comfort stations are close to the shoreline, construction could affect archaeological or cultural resources. Comfort Station A is within proximity to a known cultural deposit (Site E of SIHP #02801, See Figure 3-8). Locating a new IWS near Comfort Station A may unintentionally impact SIHP #02801. The area is densely vegetated, as such building new systems may require removing mature trees, raising environmental and permitting concerns. These issues could limit design flexibility or make this option infeasible.

Placing the new systems near the comfort stations would simplify operations and reduce piping needs but may increase potential impacts to natural and cultural resources. This alternative would likely

require tree removal that would lead to unintentional consequences for species like the Hawaiian Hoary Bat that may use trees in the park to roost. The proposed location of these IWS improvements under this alternative would also place the leach field closer to the shoreline from its current location making the IWS more susceptible to impacts from potential future sea level rise.

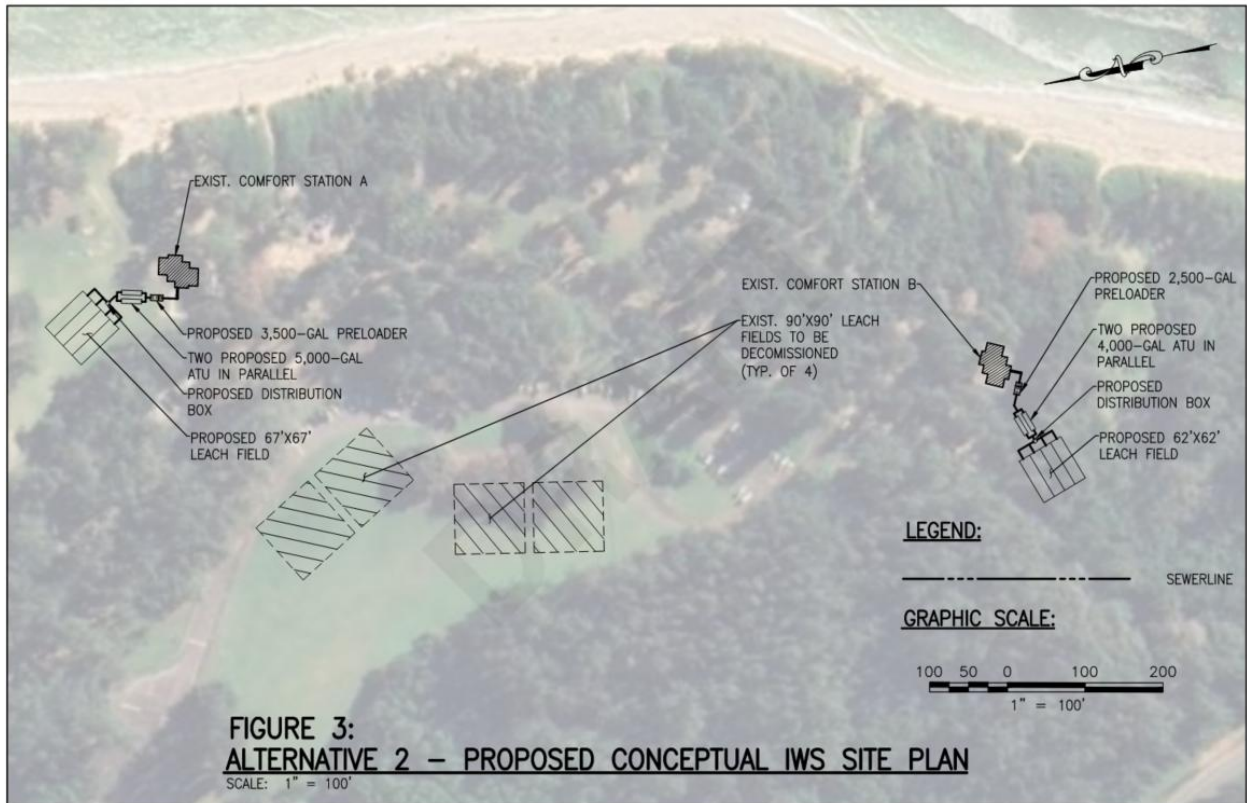


Figure 4-2

Alternative C – Install Two New IWS Located at Each Comfort Station

4.4 Alternative D (Preferred Alternative) – Install One New Centralized IWS Located at the Northeast Corner of Grass Field

This alternative would construct a single, centralized IWS at the northwest corner of the grass field mauka of the driveway and parking lot. The system would include multiple ATUs discharging to a disposal system, likely raised several feet to maintain adequate groundwater clearance and avoid buoyancy issues. The facility would be fenced for safety and equipment protection.

Because the site has limited elevation difference from the comfort stations, wastewater pump stations would be needed. These would allow flexible, shallow pipe installation to reduce environmental and cultural impacts. Pre-loader tanks at each comfort station would remove solids, oils, and grease before pumping them into the treatment system.

Alternative D increases system complexity, maintenance needs, and power requirements, and the necessary trenching for pipelines could temporarily disrupt recreational areas during construction.

While this alternative will be more costly both in terms of the short-term construction costs and long-term operational and maintenance costs associated with pumping, it is the preferred IWS alternative. This option offers a large, open site with few mature trees and a lower likelihood of disturbing cultural resources. The ALRFI report completed by Honua Consulting LLC (discussed in Section 3.15.1) did not identify any known or above-surface historic properties in the proposed location of the new disposal system. Furthermore, the location of the disposal system would be sited more inland and further away from the ocean compared to the current location of the existing leach fields. The new location would help to mitigate the impacts of sea-level rise on the IWS. Centralizing treatment and disposal would also improve long-term access and operations, with components designed to meet State IWS Standards and future demands, including a 100-person group camping area.

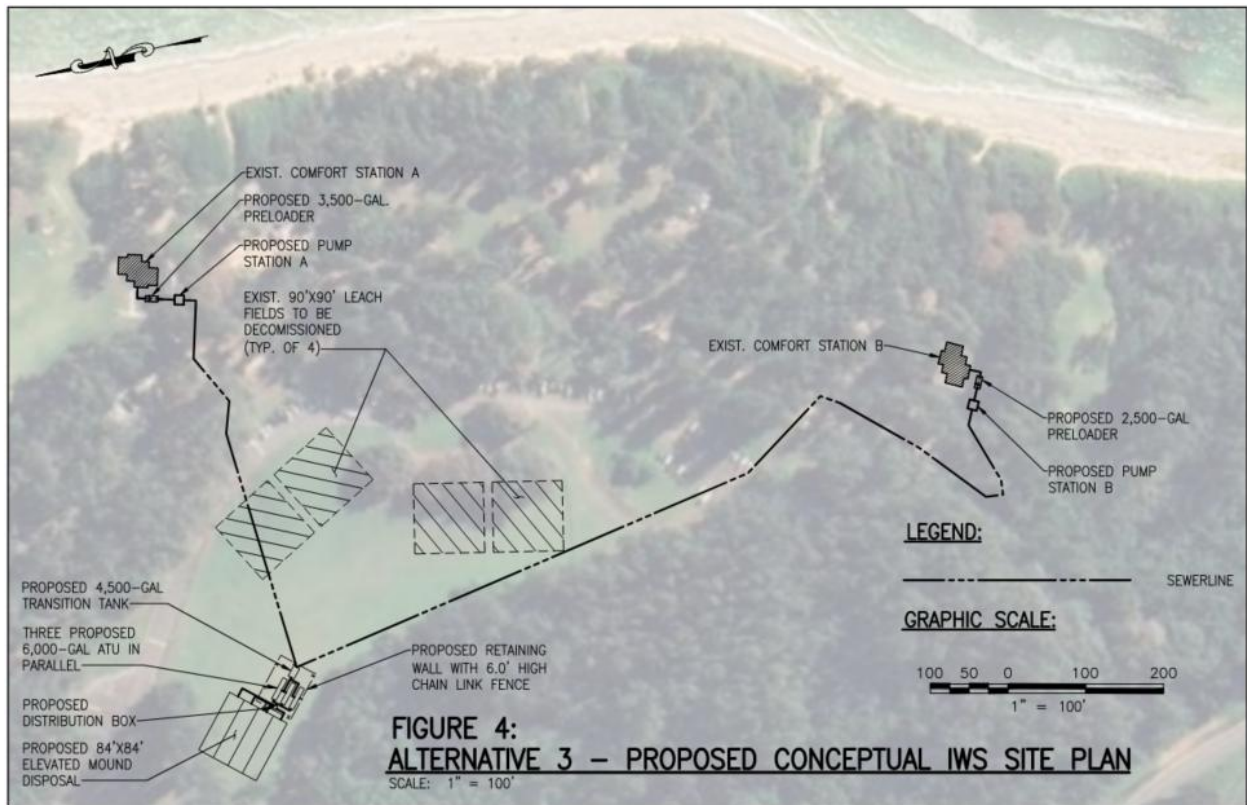


Figure 4-3

Alternative D (Preferred Alternative – Install One New Centralized IWS Located at the Northeast Corner of Grass Field)

This page left blank intentionally.

Chapter 5

Plans and Policies

Chapter 5

Plans and Policies

In this chapter, the project's consistency with applicable land use plans, policies, guidelines, or statutes set forth by Federal, State, or County jurisdictions are discussed.

5.1 Americans with Disabilities Act of 1991

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

In 2017, DCAB adopted the Hawai'i Outdoor Developed Areas Accessibility Guidelines. These guidelines provide specific accessibility requirements for outdoor spaces such as trails, camping, and picnic facilities, viewing areas, and beach access routes at public facilities in Hawai'i. The Hawai'i Outdoor Developed Areas Accessibility Guidelines' purpose is to ensure that these outdoor areas are usable and accessible for people with disabilities and are supplemental the ADA Accessibility Guidelines in 36 CFR 1191.

The outdoor guidelines encompass the following key requirements:

- **Accessible Routes:** Continuous, unobstructed paths (accessible routes or Outdoor Recreation Access Routes, ORARs) must connect all accessible elements within a site, such as parking, camping, and common areas.
- **Camping Facilities:** A percentage of campsites (determined by the total number provided) must be accessible and connected by an accessible route, with accessible picnic tables, grills, and other features.
- **Picnic Facilities:** Similar to camping areas, a portion of picnic units must meet accessibility standards for surface, space, and amenities.
- **Viewing Areas:** Viewing platforms or areas must provide at least one accessible route from parking or arrival points and ensure that viewing opportunities are available from ground or platform level.
- **Trails:** Trails built or altered must be accessible where possible, with various exceptions allowed based on terrain, environmental protection, or significant difficulty.
- **Beach Access:** Where provided, at least one firm and stable route is required to beach areas; accessible paths must also meet minimum width and grade criteria.

Discussion: The Project will include improvements to comfort stations, outdoor shower, pavilion, and pot-washing station. These improvements will be designed to comply with ADAAG and DCAB Outdoor Areas Accessibility Guidelines.

5.2 DLNR State Parks Administrative Rules

DLNR has jurisdiction over State parks and management of the parks is via the DLNR Division of State Parks. The policies that apply to State parks and recreation areas are codified in (Chapter 184, HRS). The excerpts below are pertinent to DLNR's management duties.

§184-6 Duties of department. The department of land and natural resources shall preserve the parks and parkways in the state park system in their natural condition so far as may be consistent with their use and safety, and improve them in such manner as to retain to a maximum extent their natural scenic, historic, and wildlife values for the use and enjoyment of the public.

The administrative rules (Title 13, Subtitle 6, Chapter 146, HAR) that govern the use and protection of all lands, and historical and natural resources within the state park system are available from DLNR's Division Offices or online from the State Parks website (<http://dlnr.hawaii.gov/dsp/administrative-rules/>).

Discussion: The proposed improvements at the Mālaekahana SRA - Kalanai Section will help to ensure that the site and its resources continue to be available to residents and visitors of the State of Hawai'i. DLNR's proposed park facility improvements will not conflict with existing policies and administrative rules pertaining to State parks and recreation areas.

5.3 DLNR State Comprehensive Outdoor Recreation Plan Update 2021

The Hawai'i State Comprehensive Outdoor Recreation Plan (SCORP) Update was prepared in conformance with a basic requirement to qualify for continuous receipt of federal grants for outdoor recreation projects under the Land and Water Conservation Fund (LWCF) Act, Public Law 88-758, as amended. The SCORP 2021 update meets the federal requirement and is intended to guide federal, state, county and private agencies in Hawai'i in the planning, development, and management of Hawai'i's outdoor recreation resources. (DLNR, 2021)

The SCORP focuses on identifying and addressing the needs and challenges of outdoor recreation in Hawai'i. It further emphasizes the importance of preserving and improving public outdoor recreation resources for enhancing State residents' quality of life and the future of Hawai'i's economy. Purposes of the SCORP include: (1) identifying public and agency preferences and priorities for the acquisition and development of outdoor recreation facilities, which will guide the use of LWCF funds by State and County recreation agencies; (2) identifying outdoor recreation issues of statewide importance; and (3) setting forth an action plan in the form of goals, objectives, and strategies to address public agency priorities and recreation issues of statewide importance. (DLNR, 2021)

The SCORP identified the following goals and objectives related to addressing long-term recreational needs and issues of the State:

Goal 1: Increase outdoor recreation opportunities for all.

Objective 1-1: Expand the number of outdoor recreation facilities that support high-demand activities.

Objective 1-2: Expand the number of accessible outdoor recreation facilities and features within facilities.

Objective 1-3: Ensure equitable distribution of outdoor recreation facilities.

Goal 2: Improve the outdoor recreation experience.

Objective 2-1: Increase facilities maintenance activities.

Objective 2-2: Modernize outdoor recreational facilities.

Objective 2-3: Improve visitor management at popular outdoor recreation venues.

Objective 2-4: Facilitate safe outdoor recreation experiences.

Objective 2-5: Encourage public-private partnerships to provide enhanced or innovative improvements and services.

Objective 2-6: Enhance communication between recreation providers and participants through more thorough, relevant, and easier-to-access sources of information.

Goal 3: Perpetuate cultural and natural resources that support outdoor recreation.

Objective 3-1: Increase natural and cultural resource stewardship.

Objective 3-2: Strive to eliminate impacts to natural or cultural resources from outdoor recreation activities.

Objective 3-3: Take proactive measures to support enforcement so that limited resources can be utilized more efficiently and effectively.

Goal 4: Support agency initiatives that promote community wellness.

Objective 4-1: Make outdoor recreation expenditures that contribute or enhance other state and county wellness programs.

Objective 4-2: Use outdoor recreation activities and areas as an essential tool in increasing physical fitness in Hawai'i.

Goal 5: Participate in inter-agency planning initiatives that support sustainable and resilient outdoor recreation programs and places.

Objective 5-1: Increase inter-agency engagement among Hawai'i's outdoor recreation providers.

Objective 5-2: Work to expand funding for outdoor recreation facilities and programs.

Objective 5-3: Encourage outdoor recreation planning and development that considers the effects of climate change and sea-level rise

The SCORP utilizes the Open Project Selection Process (OPSP) developed as part of the SCORP planning to select outdoor recreation projects for LWCF funding assistance. The OPSP is meant to comply with Chapter 2 of the LWCF Financial Federal Assistance Manual (2021) and sets forth procedures to assure equal opportunity for all eligible project sponsors and all sectors of the general

public to participate in the benefits on the program, and to meet priority outdoor recreation needs of the State. Through the OPSP, a priority rating system for selecting projects for LWCF funding was created to rank and prioritize the various recreational projects across the State based on the goals and objectives identified above.

Discussion: LWCF assistance was used in the early 1980s when the State acquired both the Kalanai and Kahuku Sections of Mālaekahana SRA. This placed both SRA sections under LWCF protection with the intent to retain them in public outdoor recreation in perpetuity. More recent LWCF grants have assisted with park development in both SRA sections. This current project has been identified for possible future LWCF funding assistance, subject to a project application, OPSP ranking relative to other project applications, and available funding. DLNR intends to submit a LWCF application for funding assistance when project designs are developed. The SCORP also recognized the Mālaekahana SRA for its water-related (ocean) and land-based nature recreational value to the public. The proposed improvements to the Mālaekahana SRA Kalanai Section are consistent with the goals of the SCORP. The Project will ensure the continued public enjoyment and use of outdoor recreation opportunities at the Mālaekahana SRA Kalanai Section while preserving the natural resources of the surrounding environment.

5.4 Hawai‘i State Plan

The Hawai‘i State Plan (Chapter 226, HRS) outlines broad goals, policies and objectives to serve as guidelines for the future growth and development of the State. The excerpts below are pertinent Hawai‘i State Plan objectives, policies, and priority guidelines related to the proposed project. The proposed park improvements will enhance the recreation area for camping and day use activities to ensure its continued use by park users and will fulfill the following objectives and policies of the Hawai‘i State Plan.

§226-11 Objectives and policies for the physical environment—land-based, shoreline, and marine resources.

- (a) Planning for the State’s physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:
 - (1) Prudent use of Hawai‘i’s land-based, shoreline, and marine resources.
 - (2) Effective protection of Hawai‘i’s unique and fragile environmental resources.
- (b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:
 - (3) Take into account the physical attributes of areas when planning and designing activities and facilities.
 - (8) Pursue compatible relationships among activities, facilities, and natural resources.
 - (9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.

Discussion: The Project will not prevent access to the shoreline areas of the Mālaekahana SRA Kalanai Section. Rather, the Project will facilitate access to shoreline and coastal resources for park goers by providing facilities that support visitation and help to mitigate impact from visitor uses. The improvements are designed to be compatible with the natural resources of the area and will have similar attributes in terms of footprint and height to existing facilities. The proposed improvements are sited outside of the immediate shoreline area.

§226-13 Objectives and policies for the physical environment—land, air, and water quality.

- (a) Planning for the State’s physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:
 - (1) Maintenance and pursuit of improved quality in Hawai‘i’s land, air, and water resources.
- (b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:
 - (2) Promote the proper management of Hawai‘i’s land and water resources.
 - (3) Promote effective measures to achieve desired quality in Hawai‘i’s surface, ground, and coastal waters.
 - (4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai‘i’s people.
 - (5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or manmade induced hazards and disasters.

Discussion: As discussed in Section 3, Description of the Environmental Setting, Potential Impacts, and Mitigation Measures, the proposed improvements to park facilities are not expected to result in significant impacts to land, air, and water resources. The proposed improvements will not significantly increase threats to life or property due to natural disasters or manmade hazards. The improvements are sited well away from residential areas and neighboring properties. Also, as noted in Section 3.4 Natural and Manmade Hazards, the Mālaekahana SRA Kalanai Section will be closed to the public during times of severe weather events.

§226-14 Objectives and policies for facility systems—in general.

- (a) Planning for the State’s facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.
- (b) To achieve the general facility systems objective, it shall be the policy of this State to:
 - (3) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.
 - (4) Pursue alternative methods of financing programs and projects and cost saving techniques in the planning, construction, and maintenance of facility systems.

Discussion: The proposed improvements to park facilities will be designed to meet current and estimated future visitor demands for the Kalanai Section. DLNR is also pursuing alternative methods of financing through applying for federal LWCF funding to finance the construction of these improvements.

§226-15 Objectives and policies for facility systems—solid and liquid wastes.

- (a) Planning for the State’s facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:
 - (1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.
- (b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:

- (1) Encourage the adequate development of sewerage facilities that complement planned growth.

Discussion: The Project will meet sanitation standards and continue to maintain the park grounds. As discussed in Section 2.3 Proposed Park Improvements and Section 3.8 Utilities and Infrastructure, the IWS will be upgraded and improved and will be able to accommodate wastewater generated by regular park use for years to come.

§226-23 Objectives and policies for socio-cultural advancement–leisure.

- (a) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.
- (b) To achieve the leisure objective, it shall be the policy of this State to:
 - (2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.
 - (3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.
 - (4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.
 - (5) Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.
 - (6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.
 - (10) Assure adequate access to significant natural and cultural resources in public ownership.

§226-25 Objectives and policies for socio cultural advancement–culture.

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

§226-26 Objectives and policies for socio cultural advancement – public safety.

- (a) Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:
 - (1) Assurance of public safety and adequate protection of life and property for all people.

§226-27 Objectives and policies for socio cultural advancement – government.

- (a) Planning the State’s socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:
 - (1) Efficient, effective, and responsive government services at all levels in the State.
- (b) To achieve the government objectives, it shall be the policy of this State to:
 - (1) Provide for necessary public goods and services not assumed by the private sector.
 - (5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.

Discussion: The Project will promote the objectives and policies of the Hawai’i State Plan related to protection of the physical environment, as well as those related to social-cultural advancement. The Project will support continued park use that allows members of the public to experience the area’s natural environment and scenic qualities while minimizing and mitigating adverse impacts on the surrounding natural resources.

5.5 State Land Use District

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

The Mālaekahana SRA Kalanai Section is located in both the State Urban District and Agriculture District (See Figure 1-3 State Land Use District Map). The Urban District generally includes lands characterized by “city-like” concentrations of people, structures and services. This District also includes vacant areas for future development. Jurisdiction of this district lies primarily with the respective counties. Generally, lot sizes and uses permitted in the district area are established by the respective County through ordinances or rules. Park and recreation uses are permitted in the Urban district.

Permitted uses in the State Agriculture District are mostly related to supporting agricultural endeavors such as the cultivation of crops, livestock, and construction of accessory facilities for agricultural operations including farm dwellings and buildings that support agricultural practices. Open areas that allow for recreational uses such as day camps, picnic grounds, parks, and riding stables are permitted. Overnight camping is not permitted in the State Agriculture District.

Discussion: The Mālaekahana SRA Kalanai Section is located within both the State Urban and Agricultural Districts. However, the campgrounds where the proposed park facility improvements will be sited are located entirely within the portion of the Kalanai Section that is within the Urban District. The portion of the Kalanai Section that is within the State Agriculture District consists mostly of unimproved lands with thick vegetation including trees and shrubs. No camping is permitted in these areas of the Mālaekahana SRA Kalanai Section.

The proposed improvements are consistent with permitted uses within the State Urban District, and no park improvements will be within the State Agriculture District, therefore, the project will not conflict with any land use restrictions.

5.6 Ka Pa‘akai v. Land Use Commission

The Cultural Impact Assessment completed by Honua Consulting (Appendix D) was conducted in accordance with applicable statutory and case law related to the case Ka Pa‘akai v. Land Use Commission, 94 Hawai‘i 31, 74, 7 P.3d 1068, 1084 (2000). The following is an excerpt of the Ka Pa‘akai Analysis (Appendix D) conducted during the preparation of the CIA report for this EA.

Based on the guidelines set forth in Ka Pa‘akai, the Hawai‘i Supreme Court provided government agencies an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development, or other, interests. The Court has stated: “that in order to fulfill its duty to preserve and protect customary and traditional Native Hawaiian rights to the extent feasible, as required by Article XII, Section 7 of the Hawai‘i Constitution, an administrative agency must, at minimum, make specific findings of fact and conclusions of law as to the following:

- 1) The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area.
- 2) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
- 3) The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.

Discussion

Part I: Identification of resources and access.

The first test is split into two elements:

- a. Identification and existence of valued cultural, historical, and natural resources;
- b. How those resources are accessed and used in traditional and customary practices.

As discussed in Section 3.15 Historical, Archaeological, and Cultural Resources, tangible resources include historic sites, sacred places, culturally significant plants, biological resources, and areas used for cultural practices, within or adjacent to the project area. These resources were identified through the CIA (Appendix D) and the ALRFI (Appendix C), which together identified that there are potential resources within the Project area, including historic sites, biological resources and areas used for cultural practices. The CIA also identified potential cultural practices that may occur at or near the Mālaekahana SRA Kalanai section.

The access element requires both the existence of a resource and the ability to physically access it, including routes, paths, and cultural protocols (such as timing of access, e.g., practices like Makahiki that occur at certain times of year). The ALRFI and CIA did not identify traditional trails or routes within the park used by Native Hawaiians to access resources for traditional customary practices.

Part II. Extent of effects or impairment to resources and access caused by the Project

The second test also has two elements:

- a. Whether the proposed action or its alternatives adversely affects the existence of resources;
- b. Whether the action affects traditional and customary access to those resources, even if the resource itself is not harmed.

As discussed in Section 3.15 Historic, Archaeological, and Cultural Resources, the Project is not anticipated to cause adverse effects to existing resources that may be utilized for traditional cultural practices. Many of the Project elements will be located in areas where existing park improvements are currently sited and not in undisturbed areas. However, the area of the Project's construction footprint consists of sand dune deposits. Deposits of this type are known to contain discontinuous (i.e. hard to predict) evidence of traditional Hawaiian cultural material as well as burials throughout the state.

The Project is not anticipated to have a long-term impact on access to cultural resources. The Project is in a publicly accessible state park with routine and regular hours of public access. However, during the construction period, certain sections of the park may be closed to the public which may have a temporary impact on Native Hawaiian access to cultural resources.

Part III. Feasible protective actions to address potential effects or impairment to resources and access

The third and final part of the Ka Pa'akai Analysis is to identify feasible protective actions to address potential effects or impairments to resources and access that were identified in the second part of the analysis.

As mentioned above, the Project's construction area lies on sand dune deposits, which throughout Hawai'i are known to contain unpredictable traces of traditional Hawaiian cultural materials including potential burials. Section 3.15 Historic, Archaeological, and Cultural Resources identified mitigation measures to address impacts. These protective actions include locating future improvements and facilities within the footprint of existing park facilities as much as possible. Secondly, archaeological monitoring will occur during construction and if any historic properties are encountered during construction, work will stop immediately, and SHPD will be notified. In accordance with HAR 13-300-40, should inadvertent burials be discovered during construction, work will immediately cease, the location of the discovery will be secured and protected from weather, people, and equipment. Iwi will be covered and not exposed to the sun. Notice of the burial discovery will be immediately provided to HPD, City and County medical examiner, and SHPD's Burial Sites Program. Other archaeological testing or mitigation measures identified in consultation with SHPD will be followed.

The Project could temporarily limit access to cultural resources in the park due to safety-related construction closures. However, these short-term impacts could be minimized by clearly defining construction work areas and minimizing closures to those areas only allowing access to other park sections. Further, advance public notices and regular updates are strongly advised to keep the community informed of construction schedules and temporary closures, allowing families and practitioners to plan accordingly.

5.7 Hawai'i Coastal Zone Management Program

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

Each county is responsible for designating a Special Management Area (SMA) that extends inland from the shoreline. Development within this SMA is subject to City and County of Honolulu approval to ensure the proposal is consistent with the policies and objectives of the Hawai'i CZM Program. As illustrated in Figure 1-4 Special Management Area Boundary, the entire Project site is within the SMA as delineated by the City and County of Honolulu and as such, requires an additional review under State CZM and County SMA rules. It is anticipated that the proposed improvements will need a SMA Use Permit (Major), which applies to development with a valuation equal to or exceeding \$500,000, is expected to be required.

The following subsections examine the objectives of the Hawai'i CZM Program and the Project's impacts relative to the State CZM objectives and policies. Specific City and County of Honolulu SMA policies are also discussed in Section 5.11 Special Management Area.

RECREATIONAL RESOURCES

Objective: Provide Coastal Recreational Opportunities Accessible to the Public.

- (A) Improve coordination and funding of coastal recreation planning and management.
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
 - Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches, when such resources will be unavoidable damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;
 - Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - Encouraging expanded public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value;
 - Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;

- Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, artificial reefs for surfing and fishing; and
- Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use Commissions, board of land and natural resources, county planning commissions, and crediting such dedication against the requirements of Section 46-6.

Discussion: The project will support improved coordination and funding of coastal recreation planning and management. The proposed project involves park improvements at an established public recreation area that is utilized for camping and day use activities. While in the City and County of Honolulu’s SMA boundary, the new and replacement structures will be sited outside of the immediate shoreline area. The Project is expected to enhance established public recreational opportunities at the Mālaekahana SRA- Kalanai Section and will positively impact access to coastal recreational opportunities. Construction will be in accordance with State and federal water quality regulations.

HISTORIC RESOURCES

Objective: Protect, preserve and, where desirable, restore those natural and man-made historic and pre-historic resources in the coastal zone management area that are significant in Hawai’i and American history and culture.

- (A) Identify and analyze significant archaeological resources;
- (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- (C) Support state goals for protection, restoration, interpretation and display of historic resources.

Discussion: An ALRFI Report by Honua Consulting LLC was conducted for the project area to identify potential historical features that may exist within the project area (Section 3.15.1 Historic and Archaeological Resources). The ALRFI identified two historic properties (SIHP #00274 and 02801) and one possible historic property that could be a small military pillbox. The SIHP #00274 and potential military pillbox are located within the park area but outside of the anticipated construction footprint of the proposed park improvements. Impacts on these resources are anticipated to be minimal as construction of the Project will be located well away from and avoid these two historic resources.

However, the Project’s construction area lies on sand dune deposits, which throughout Hawai’i are known to contain unpredictable traces of traditional Hawaiian cultural materials including potential burials. Archaeological monitoring will occur during construction and if any historic properties are encountered during construction, work will stop immediately, and SHPD will be notified. In accordance with HAR 13-300-40, should inadvertent burials be discovered during construction, work will immediately cease, the location of the discovery will be secured and protected from weather, people, and equipment. Iwi will be covered and not exposed to the sun. Notice of the burial discovery will be immediately provided to HPD, City and County medical examiner, and SHPD’s Burial Sites Program. Consultation with SHPD regarding appropriate mitigation measures will occur prior to and during construction of the project. Mitigation measures could include additional subsurface testing in the precise location of planned improvements and/or archaeological monitoring during construction.

SCENIC AND OPEN SPACE RESOURCES

Objective: Protect, preserve and where desirable, restore or improve the quality of coastal scenic and open space resources.

- (A) Identify valued scenic resources in the coastal zone management area;
- (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- (C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
- (D) Encourage those developments which are not coastal dependent to locate in inland areas.

Discussion: As described in Section 3.16 Visual and Scenic Resources, the project will not adversely affect vistas or scenic resources. The project is consistent with the City and County of Honolulu General Plan, Ko‘olauloa Sustainable Communities Plan, and Zoning regulations.

COASTAL ECOSYSTEMS

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

- (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (B) Improve the technical basis for natural resource management;
- (C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- (E) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

Discussion: The Project is not expected to significantly affect the coastline, as improvements are outside the nearshore area. Best management practices will minimize construction-related erosion, and regular park activities are not expected to contribute to it. Wastewater will be handled by new systems designed in compliance with DOH standards.

ECONOMIC USES

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

- (A) Concentrate coastal dependent development in appropriate areas;
- (B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

- (C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
- (i) Use of presently designated locations is not feasible;
 - (ii) Adverse environmental effects are minimized; and
 - (iii) The development is important to the State's economy.

Discussion: The Project will provide public facilities that are located in an existing State Park area that has been designated for recreational use. The Kalanai Section is sited in a location that will not negatively impact social, visual, and environmental impacts to the CZM area, as discussed in Section 3 Description of the Environmental Setting, Potential Impacts, and Mitigation Measures. The project is consistent with State and County plans and land regulations, and will be seeking a Special Management Area permit from the City and County of Honolulu.

COASTAL HAZARDS

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

- (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
- (B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;
- (C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and
- (D) Prevent coastal flooding from inland projects.

Discussion: The project will not significantly increase risk of hazards to life and property. Proposed park improvements will not exacerbate existing flood hazards to the surrounding area or create significant non-point source pollution. During severe hazard events that allow advanced warnings such as tsunami, hurricane, or tropical storm, the Mālaekahana SRA Kalanai section will be evacuated and closed to visitors.

MANAGING DEVELOPMENT

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

- (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
- (B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and
- (C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion: The Project supports the objectives and policies with regards to managing development in coastal areas. The EA complies with the requirements for assessing and communicating the potential

short and long-term impacts of the project on the Coastal Zone Management Area. The Project improvements will require a SMA permit major from the City and County of Honolulu. The permitting process requires a public hearing which will allow additional opportunities for communication and public participation in the proposed park improvement project.

PUBLIC PARTICIPATION

Objective: Stimulate public awareness, education, and participation in coastal management.

- (A) Promote public involvement in coastal zone management processes;
- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
- (C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion: Public participation is conducted as part of the HRS Chapter 343 environmental review process. The State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP) serves as the governing agency for EA publications and makes available all EAs for public review and comment. The public is provided 30 days to submit comments on the EA. Information regarding the coastal issues and processes is included in the EA, along with proposed mitigation measures. Consulted parties are also encouraged to provide input on the project during the Draft EA review.

As noted above, the project will also require an SMA major permit. As part of this application process, a public hearing will be conducted to will allow individuals to provide comments on the proposed project.

BEACH AND COASTAL DUNE PROTECTION

Objective: (A) Protect beaches and coastal dunes for (i) public use and recreation, (ii) the benefit of coastal ecosystems and (iii) use as natural buffers against coastal hazards, (B) Coordinate and fund beach management and protection.

Policies established to accomplish the above objectives include:

- (A) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;
- (B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities;
- (C) Minimize the construction of public erosion-protection structures seaward of the shoreline;
- (D) Minimize grading of and damage to coastal dunes;
- (E) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and
- (F) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.

Discussion: The Project will be located inland of the existing shoreline and will not obstruct public access to the shoreline for public use and recreational purposes. As previously mentioned, the Project will support public use and recreation of the shoreline area.

MARINE RESOURCES

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

- (A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- (B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
- (C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
- (D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
- (E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The Project will not directly affect marine resources. The Project will better mitigate visitor impacts to surrounding environment including nearby marine sources and will increase the capacity of existing infrastructure to safely contain and properly dispose of waste generated by park users.

5.8 City and County of Honolulu General Plan

The City and County of Honolulu General Plan, referred to as the O‘ahu General Plan, outlines the city’s long-range objectives and policies for development across the island. The most recent comprehensive update was adopted by the City Council in December 2021 and signed by the Mayor in January 2022. This plan is organized into 11 key focus areas, addressing social, economic, environmental, and design objectives to guide O‘ahu’s future growth and prosperity. The excerpts below are pertinent O‘ahu General Plan objectives, policies, and priority guidelines related to the proposed project.

III. Natural Environment and Resource Stewardship

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 2. Seek the restoration of environmentally damaged areas and natural resources.
- Policy 4. Require development projects to give due consideration to natural features and hazards such as slope, inland and coastal erosion, flood hazards, water-recharge areas, and existing vegetation, as well as to plan for coastal hazards that threaten life and property.
- Policy 5. Require sufficient setbacks from Oahu’s shorelines to protect life and property, preserve natural shoreline areas and sandy beaches, and minimize the future need for protective structures or relocation of structures.

Policy 7. Protect the natural environment from damaging levels of air, water, carbon, and noise pollution.

Policy 8. Protect plants, birds, and other animals that are unique to the State of Hawaii and Oahu, and protect their habitats.

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.

Discussion: The Project will be located in the existing state park camping ground areas and will not be located in sensitive natural environments including shoreline areas, wetlands, watersheds, or forest reserves. The proposed improvements seek to mitigate visitor impacts to the natural environment while allowing visitors to enjoy the outdoors, thereby increasing public awareness, appreciation, and protection of O‘ahu’s land, air, and water resources.

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.

Policy 2. Protect O‘ahu’s scenic views, especially those seen from highly developed and heavily traveled areas.

Policy 3. Locate and design public facilities, infrastructure and utilities to minimize the obstruction of scenic views.

Policy 4. Protect and expand public access to the natural and coastal environment for recreational, educational, and cultural purposes, and maintain access in a way that does not damage natural, historic, or cultural resources.

Discussion: The Project is appropriately scaled and will maintain Hawai‘i’s natural and scenic resources. The Project is not anticipated to adversely affect coastal resources. Protective measures will be carried out to address potential impacts to the physical environment (land, air, and water) that may occur as a result of the project. The Project seeks to mitigate visitor impacts to the natural environment while protecting public access to the natural and coastal environment for recreational, educational, and cultural purposes.

V. Transportation and Utilities

Objective B – Provide an adequate supply of water and environmentally sound systems of waste disposal for Oahu’s existing population and for future generations, and support a one water approach that uses and manages freshwater, wastewater, and stormwater resources in an integrated manner.

Policy 3 – Use technologies that provide water, waste disposal, and recycling services at a reasonable cost and in a manner that addresses environmental and community impacts.

Discussion: The Project will enhance existing facilities and improve their ability to mitigate the environmental impact of park visitors. Further, wastewater will be processed through aerobic units

producing higher quality of treated influent that will be filtered into the ground through the leach field system.

Objective C – To ensure reliable, cost-effective, and responsive service for all utilities with equitable access for residents.

Policy 1 – Maintain and upgrade utility systems in order to avoid major breakdowns and service interruptions.

Policy 3 – Facilitate timely and orderly upgrades and expansions of utility systems.

Policy 4 – Increase the efficiency of public-serving utilities by encouraging a mixture of uses with peak periods of demand aligning with the availability of resources.

Discussion: The Project will reduce visitor impacts on the environment and replace aging infrastructure nearing the end of its service life. The improvements will support continued public use of the park while enhancing utility efficiency. During peak summer seasons, septic systems will receive more frequent maintenance, including twice-as-often if necessary, tank pumping, to ensure reliable operation and minimize impacts from higher visitor use.

Objective D – To maintain transportation and utility systems which support O‘ahu as a desirable place to live and visit.

Policy 1 – Provide adequate resources to ensure the maintenance and improvement of transportation systems and utilities.

Policy 2 – Evaluate the social, cultural, economic, and environmental impact of additions to the transportation and utility systems before they are constructed.

Policy 5 – Evaluate impacts of sea level rise on existing public infrastructure, especially sewage treatment plants, roads, and other public and private utilities located along or near O‘ahu’s coastal areas, and avoid the placement of future public infrastructure in threatened areas.

Discussion: As discussed in Section 3.9 Traffic and Roadways, the Project is not anticipated to impact regional transportation systems. Impacts of sea-level rise were evaluated in Section 3.4 Natural and Manmade Hazards. The effects of sea level rise will be primarily concentrated along the coastline and shoreline area. Project improvements will be sited near existing structures that are outside of the immediate shoreline area to mitigate potential sea level rise impacts.

X. Culture and Recreation

Objective D – To provide a wide range of recreational facilities and services that are readily available to residents and visitors alike, and to balance access to natural areas with the protection of those areas.

Policy 1 – Develop, maintain, and expand a community-based park system to meet the needs of the diverse communities on O‘ahu.

Policy 2 – Develop, maintain, and expand a system of regional parks and specialized recreation facilities, based on the cumulative demand of residents and visitors.

Policy 5 – Encourage the State to develop, improve, and maintain a system of natural resource based parks, such as beach, shoreline, and mountain parks.

Policy 6 – Ensure that public recreational facilities balance the demand for facilities against capital and operating cost constraints so that they are adequately sized and properly maintained.

Policy 7 – Ensure and maintain convenient and safe access to beaches, ocean environments and mauka recreation areas in a manner that protects natural and cultural resources.

Policy 8 – Encourage ocean and water-oriented recreation activities that do not adversely impact the natural environment and cultural assets, or result in overcrowding or overuse of beaches, shoreline areas and the ocean.

Policy 10 – Utilize our unique natural environment in a responsible way to promote cultural events and activities, and maintain cultural practices.

Policy 12 – Provide for safe and secure use of public parks, beaches, and recreation facilities.

Policy 13 – Create and promote recreational venues for kupuna and keiki and for kama‘āina and malihini.

Discussion: As reviewed in Section 3.15 Historic, Archaeological, and Cultural Resources and 3.16 Visual and Scenic Resources, the Project will not significantly impact existing scenic assets or cultural/historical resources at the project site. Mitigation measures to minimize impact on cultural resources, as discussed in Section 3.15 Historic, Archaeological, and Cultural Resources, will be implemented. The Project will allow continued access to the Mālaekahana SRA Kalanai Section for recreational purposes.

5.9 City and County of Honolulu Land Use Ordinance Guidelines

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

As illustrated in Figure 1-6 The subject property is designated as P-2 or General Preservation by the City and County of Honolulu’s LUO. The purpose and intent of the General Preservation zoning district is to preserve and manage major open space, recreation lands, and areas with scenic or natural resource value and applies to lands that would: provide visual relief and contrast to Honolulu’s urban environment; serve as outdoor spaces for public use and enjoyment; and are unsuitable for other uses due to topography or concerns related to public health, safety, or welfare.

Discussion: The Project will allow the continued use of the Mālaekahana SRA Kalanai Section and is consistent with the permitted uses of the General Preservation City and County Zoning.

5.10 City and County of Honolulu Ko‘olaupia Sustainable Communities Plan (2020)

The City and County of Honolulu implements its island-wide policies through eight plans specific to each City district. Six of these plans are designated as Sustainable Community Plans (SCP) for the island districts in which major development and population growth are not anticipated. Two districts (Urban Honolulu and Ewa) are guided by City and County of Honolulu Development Plans as development and population growth are anticipated in these two areas.

The Mālaekahana SRA – Kalanai Section is located in the region encompassed by the Ko‘olauloa SCP (Figure 1-6). The Ko‘olauloa SCP was last updated in 2020.

The 2020 Ko‘olauloa SCP’s vision seeks to preserve the region’s rural character and its natural, cultural, scenic, and agricultural resources. The Ko‘olauloa SCP states that the community envisions a safe and healthy environment based on strong family values, where residents have access to quality jobs, affordable housing, and ample recreational opportunities within the region and would like the district to remain country, characterized by small towns and villages with distinctive identities that exist in harmony with the natural settings, defined by the mountain ridges and scenic open spaces which help give Ko‘olauloa its unique form of organization.

Section 2.4 of the Ko‘olauloa SCP articulates the plan’s vision element specific to recreational areas in the district. The section states:

“The region contains numerous beach parks along its coastline and State parks such as Kaluanui and *Mālaekahana* and Ahupua‘a O Kahana. These resource areas are recognized as important open space and recreation assets. The existing parks and recreation areas are maintained and have been enhanced to utilize the region’s abundance of natural and scenic resources for the enjoyment of residents and visitors.”

The excerpts below are pertinent Ko‘olauloa SCP policies related to the Mālaekahana SRA Kalanai Section improvements:

3.3.1 (Parks and Recreation) Policies

- Maintain, expand and enhance existing park resources and recreational areas to provide high quality recreational experiences for residents and visitors. Such improvements should occur in a timely manner. Parks and recreation areas are a critical component of the region’s abundance of natural and scenic resources and contribute to the attractiveness and accessibility of Ko‘olauloa’s coastline and mauka areas for both residents and visitors.
- Ensure that the development of park facilities avoids adverse impacts on natural resources or processes in the coastal zone or any other environmentally sensitive area.
- Ensure that park facilities, recreational resources and recreational activities are compatible with surrounding land uses and rural character.
- Provide safe and convenient access to parks and recreation areas.
- Protect existing recreational resources from overuse and incompatible uses.
- Ensure that physical improvements and landscaping features contribute to the aesthetic, cultural and / or environmental value of these open space elements.

Discussion: The proposed Park facility improvements are consistent with the above vision and policies articulated in the Ko‘olauloa’s SCP. The Project will maintain and enhance the Mālaekahana SRA Kalanai Section by replacing aging infrastructure thereby supporting high-quality recreational experiences while ensuring timely upgrades to existing facilities. The Project will allow the continuation of park use and recreational activities compatible with the surrounding land uses and rural character of the region.

During construction of the proposed improvements, temporary impacts to Park access may occur, but those impacts are temporary in nature and will cease upon the completion of construction. The

proposed improvements will ensure that Park facilities can continue to accommodate visitors and will be designed to complement the existing aesthetic, cultural, and environmental values of the area, consistent with SCP policies regarding safe, accessible, and environmentally sensitive park development..

3.4.1 (Historic and Cultural Resources) Policies

- Encourage all activities within the Ko‘olauloa area to respect traditional and customary rights of Native Hawaiian practitioners in respective *ahupua‘a*.
- Preserve and protect, and if appropriate, restore historic and cultural resources associated with Native Hawaiian and pre-contact periods.
- Preserve and protect significant post-contact cultural and historic features, such as those established during the plantation era.
- Apply appropriate management policies and practices in the treatment of historic and cultural resources. Such practices may range from total preservation to integration with contemporary uses.
- Retain, wherever possible, significant vistas associated with archaeological features and culturally sensitive areas.

Discussion: The Project is consistent with the above policies. The Project will enhance the Mālaekahana SRA Kalanai Section by replacing aging infrastructure. The improvements will support continued public use of the park while enhancing utility efficiency.

4.3.1 (Wastewater) Policies

- Encourage coordination between public agencies and private landowners in addressing adequacy of wastewater treatment within the region.
- Provide collection systems, where practical, to eliminate individual cesspools, and to protect aquifers, streams, estuaries and nearshore waters from contamination.
- Replace existing IWS system nearing the end of its useful service life.

Discussion: The Project will include a new IWS. The Project will reduce visitor impacts on the environment and replace aging infrastructure nearing the end of its service life. The improvements will support continued public use of the park while enhancing utility efficiency.

Open Space Preservation

General Policies

- Maintain the region’s rural character, protect scenic views and provide recreational resources.

Planning Principles

- Provide Passive and Active Open Spaces. The open space system consists of areas in both active and passive uses. Active areas include community-based and State parks, golf courses and agricultural fields. Passive areas include the State Conservation District, fallow land in the State Agricultural District, drainage and utility corridors, nature preserves, and other fallow lands left undeveloped due to physical or hazard constraints. Beach parks and shoreline areas may be

either active or passive, depending on the extent to which the landscape has been modified by grading and construction of facilities and the intensity of public use.

- Promote Accessibility of Recreational Open Space. Public parks and most golf courses will be accessible for recreational use, but the open space system should also promote the accessibility of shoreline and mountain areas (as required by City Ordinance and State law). Access to mountain trails and shoreline areas should be readily available. Where required, this includes the provision of parking areas that are conducive to the environment.

Discussion: The Project will reduce visitor impacts on the environment and replace aging infrastructure nearing the end of its service life. The improvements will support continued public use of the park while enhancing utility efficiency.

Agricultural Use

General Policies

- Allow for appropriate non-agricultural uses that are compatible with open space and resource character, such as recreational or educational programs, or other uses consistent with the character of a rural agricultural area which provide supplemental income necessary to sustain the primary agricultural activity. There should be a direct connection between those activities and the maintenance of agricultural uses on the same or nearby properties.

Planning Principles

- Recognize the Contribution of Agricultural Lands to Koʻolauloa’s Rural Character. Koʻolauloa’s rural character is in large part defined by the region’s agricultural areas. Allowable uses should be appropriate to onsite or adjacent resources and open space settings. Any onsite development must be low-key, low-impact and predominately open space in character.

Discussion: A portion of the Mālaekahana SRA Kalanai Section is in the State Agriculture Land Use District (see Figure 1-3). Although most improvements are within the State Urban District, the Project aligns with the Koʻolauloa SCP’s Agricultural Land principles, as the proposed work is low-impact, suited to open space settings, and supports continued recreational use of the Kalanai Section.

5.11 City and County of Honolulu Special Management Area

As previously discussed in Section 1 Introduction and Section 3 Description of the Environmental Setting, Potential Impacts, and Mitigation Measures, the project area is located within the Special Management Area (SMA), which was established to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawai‘i. Special controls on development within the SMA are necessary to avoid permanent loss of valuable resources and foreclosure of management options.

The objectives, policies, and guidelines of Section 25-3.1 of the Revised Ordinances of Honolulu (ROH) are used by the Department of Planning and Permitting and the City Council for the review of developments proposed in the SMA. These guidelines are derived from Section 205A-2 and 205A-26-1 HRS. They are as follows:

- (a) Recreational resources. Development within the SMA should provide coastal recreational opportunities to the public. Adequate access, by dedication or other means, to beaches, coastal dunes, recreation areas, and natural reserves must be provided to the extent consistent with

- sound conservation principles. Adequate and properly located public recreation areas and wildlife preserves must be preserved.
- (b) Historic and cultural resources. Development within the SMA should protect, preserve, and restore natural or human-made historical and cultural resources.
 - (c) Scenic and open space resources. Development within the SMA should protect, preserve, and whenever desirable, restore or improve the quality of coastal scenic and open space resources. Alterations to existing land forms and vegetation, other than for the cultivation of coastal dependent crops, must be limited so they result in minimum adverse impacts on water resources, beaches, coastal dunes, and scenic or recreational amenities. Development that is not dependent on the coast is encouraged to locate mauka of the SMA.
 - (d) Coastal ecosystems. Development within the SMA should protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes from disruption, and minimize adverse impacts on all coastal ecosystems. Solid and liquid waste treatment and disposition must be managed to minimize adverse impacts on SMA resources.
 - (e) Economic uses. Development within the SMA should consist of facilities and improvements important to the State's economy, and ensure that coastal-dependent development and coastal-related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts within the SMA.
 - (f) Coastal hazards. Development within the SMA should reduce impacts of coastal hazards on life and property, and must be designed to minimize impacts from landslides, erosion, sea level rise, siltation, or failure in the event of earthquake.
 - (g) Managing development and public participation. The development review process should stimulate public awareness, education, and participation in coastal management.
 - (h) Beach and coastal dune protection. Development within the SMA should facilitate beach management and protection by safeguarding beaches and coastal dunes for public use and recreation, the benefit of ecosystems, and use as natural buffers against coastal hazards. New structures should be located mauka of the shoreline setback line to conserve open space, minimize interference with natural shoreline processes, and minimize the loss of improvements due to erosion.
 - (i) Marine and coastal resources. Development within the SMA should promote the protection of, use, and development of marine and coastal resources to ensure that these resources are ecologically and environmentally sound and economically beneficial. Impacts on water resources, beaches, coastal dunes, and scenic or recreational amenities resulting from the construction of structures must be minimized. Development within wetland areas should be limited to activities that are dependent on or enhance wetlands, or are otherwise approved by appropriate State and federal agencies. Examples include traditional Hawaiian agricultural uses such as wetland taro production, aquaculture, and fishpond management, as well as activities that clean and restore traditional wetland areas or create new wetlands in appropriate areas.
 - (j) Cumulative impact or significant effect and compelling public interest. Development within the SMA should not have any cumulative impact or significant effect, unless minimized to the extent practicable and clearly outweighed by public health, safety, or other compelling public interest.
 - (k) Consistency with plans and regulations. Development within the SMA must be consistent with the general plan, development plans, sustainable communities plans, and zoning ordinances; provided that finding of inconsistency does not preclude concurrent processing of amendments to applicable plans or a zone change.

Discussion: The Project will improve public access, modernize facilities, and expand recreation opportunities. Mitigation measures (Section 3.15 Historic, Archaeological, and Cultural Resources) will protect historic and cultural resources, and best management practices (Section 3.6 Water Resources) will limit construction runoff. Wastewater will be treated through a DOH-compliant system (Section 3.8 Utilities and Infrastructure) to protect coastal ecosystems. Most work will occur within existing footprints and outside shoreline areas to minimize coastal impacts. Facilities will meet building code standards for seismic safety, and required grading permits will address erosion control. Public participation is incorporated through the HRS 343 environmental review process and SMA permitting process. DLNR also made a presentation regarding the Project at the November 2025 Ko'olauloa Neighborhood Board. The Project is not expected to cause cumulative impacts (Section 3.18 Potential Cumulative, Indirect, and Secondary Impacts). Overall, the Project will enhance and sustain long-term recreational use for the public.

SMA permit review guidelines are stated in Section 25-4.1 of ROH. The permit guidelines are as follows:

- (a) No development may be approved unless the agency or the council has first found that the development is consistent with the objectives, policies, and guidelines set forth in this chapter and will not have any significant adverse environmental or ecological effect, except for situations in which the adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or a compelling public interest. Adverse effects include but are not limited to the potential cumulative impact of individual developments, each of which taken by itself may not have a significant adverse effect. Adverse effects may also involve development that would eliminate future planning options.
- (b) The agency or council shall seek to minimize whenever reasonable:
 - 1. Dredging, filling, or otherwise altering any bay, estuary, salt marsh, wetland, river mouth, slough, or lagoon, except for restoration purposes;
 - 2. Any development that would reduce the size of any beach, coastal dune, or other area usable for public recreation;
 - 3. Any development that would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, coastal dunes, portions of rivers and streams, and the mean high tide line where there is no beach;
 - 4. Any development that would substantially interfere with or detract from the line of sight toward the ocean from the State highway nearest the coast;
 - 5. Any development that would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, coastal ecosystems, wildlife habitats, or potential or existing agricultural uses of land; and
 - 6. Risk to development from sea level rise and other coastal hazards, which may be accomplished by siting habitable structures outside of the sea level rise exposure area if feasible, or if not feasible, adapting habitable structures within the sea level rise exposure area to accommodate sea level rise.

Discussion: As discussed in Section 3 Description of the Environmental Setting, Potential Impacts, and Mitigation Measures, the proposed project is not anticipated to result in significant adverse effects on the surrounding environment. The proposed improvements to the park facilities are also not expected to contribute to cumulative impacts, as further detailed in Section 3.18 Potential Cumulative, Indirect, and Secondary Impacts.

The proposed park improvements will be located mauka of the shoreline setback area and will not involve dredging, filling, or alteration of any bay, estuary, salt marsh, wetland, river mouth, slough, or lagoon. The improvements are situated away from wetlands, streams, and rivers, and will not diminish the size of beaches or coastal dunes. They are designed to enhance the recreational quality of the park while providing facilities that help mitigate visitor impacts on the surrounding environment. Temporary restrictions on public access may occur during construction for safety purposes, but access to tidal and submerged lands, beaches, coastal dunes, and surface waters will be fully restored upon completion.

The proposed improvements will not interfere with or detract from existing ocean views from Kamehameha Highway, as their height is comparable to existing park structures and will not obstruct sightlines. Upgrades to IWS will improve wastewater management capacity within the Kalanai Section, helping to protect water quality and coastal ecosystems. In addition, all improvements are located mauka of the 3-foot sea level rise exposure area, reducing the risk of future impacts associated with projected sea level rise.

Findings Supporting the Anticipated Determination



Chapter 6

Findings Supporting the Anticipated Determination

6.1 Anticipated Determination

Based on a review of the significance criteria outlined in Chapter 343, HRS, and Section 11-200-12, State Administrative Rules, Contents of EA, it is anticipated that the project will not result in significant adverse effects on the natural or human environment. Through the analysis undertaken in this draft environmental assessment report, an Anticipated Finding of No Significant Impact (AFONSI) is expected for the proposed project.

6.2 Reasons Supporting the Anticipated Determination

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

(1) Involve an irrevocable loss or destruction of any natural or cultural resources.

Park improvements will not cause an irrevocable loss of natural or cultural resources. As discussed in Sections 3.5 Biological Resources of the EA there are no known endangered or threatened species in the park area and vegetation consists mainly of introduced non-native plant species.

Project actions may involve the necessary removal of on-site vegetation consisting of introduced, non-native floral species in select areas. Existing stands of mature trees and areas of dense vegetation within the project site are expected to remain as vegetated buffers. The project may also include landscaping in areas around new and replacement structures with native plant species.

To mitigate unintended negative impacts on seabirds, a comprehensive lighting plan shall be prepared and incorporated into the project description to ensure the avoidance and minimization of artificial lighting impacts. This plan shall include provisions for staff and resident education on seabird fallout. Where lighting is required for safety or security purposes, fixtures shall be installed at low mounting heights, equipped with motion sensors, and fully shielded or designed with full cut-off features. Effective light shields shall be opaque, of sufficient dimension, and configured to ensure that light sources are visible only from below and not from the beach. Construction activities shall be limited to daylight hours.

Park improvements will be sited outside of the nearshore area to mitigate unintentional impacts on marine species.

As discussed in Section 3.15.1 Historic and Archaeological Resources, no known historic resources are located in the anticipated construction footprint. However, a known cultural deposit is located near the estimated project footprint. In the unfortunate event that a construction contractor encounters

sub-surface resources during the construction period, all work shall stop and contact with SHPD will be immediately made to report the findings. The contractor will work with SHPD to identify and implement appropriate mitigation measures. Work will continue only with the approval of SHPD in accordance with HRS 6E.

Furthermore, Section 3.15.2 of the EA identifies the possible cultural resources and traditional customary practices that may be present in the project area and surrounding region. Since most of the proposed improvements will occur in existing park areas and in some cases within the footprint of existing structures, no significant impact is anticipated from the proposed project to cultural resources. Proposed improvements may cause park closures during the construction period which may prevent access to Park areas with cultural resources or areas in which traditional customary practices are undertaken. However, those closures are temporary and limited. With proper public notice and communication with the surrounding community regarding construction schedules and anticipated park closure, impact to cultural practitioners can be mitigated.

Lastly, as described in Section 3.6 Water Resources, impacts to water sources are not expected to be significant. The proposed park improvements will not have a significant impact on the Kahawainui Stream or on-going stream maintenance activities. It is anticipated that the future park improvements will not affect long-term contribution to sediment run-off into the stream. The current improvements planned for the Mālaekahana State Recreation Area do not include the development of injection wells for disposal of liquids and impacts to groundwater resources are expected to be minimal.

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

The proposed park improvements to existing facilities will not obstruct or prevent beneficial use of the environment. While there may be temporary closures to certain areas of the park during construction, the proposed facility improvements will allow the long-term continuation of beneficial use of the environment within the park and nearshore area by improving existing facilities that allow park users to safely visit and experience Mālaekahana.

(3) *Conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.*

The Project does not conflict with the State's long-term environmental policies or goals and guidelines as expressed under HRS Chapter 344, State Environmental Policy including individual goals and guidelines for natural resources, cultural resources, transportation, energy, and population growth. The proposed project's minimal impact on these areas of interest have been discussed in this EA document. Further, adverse impacts associated with short-term construction activities will be mitigated through compliance with applicable regulatory guidelines and use of best management practices.

(4) *Substantially affects the economic welfare, social welfare, or cultural practices of the community and State.*

The project will result in short-term economic benefits during construction that include direct, indirect, and induced employment opportunities and multiplier effects, but not at a level that would generate long-term positive economic impacts.

As discussed in Section 3.15.2, Cultural Resources, the proposed Park improvements are not anticipated to negatively affect cultural practices that may occur within the vicinity of the project area or affect access to resources utilized in cultural practices that may exist in the park area.

(5) *Substantially affects public health.*

The project is consistent with existing land uses and is not expected to affect public health. However, there will be temporary short-term impacts to air quality from possible dust emissions and temporary increase in noise levels generated from construction equipment operation that may impact those within the immediate vicinity of the park area. The project will comply with State and County regulations during the construction period and will implement best management practices to minimize temporary impacts associated with construction activities. Once completed, the DLNR's proposed project will feature park structures and site infrastructure that meet applicable health and safety standards, including fire protection requirements, and the adherence to applicable DOH on-site wastewater system regulations.

(6) *Involves substantial secondary impacts, such as population changes or effects on public facilities.*

The project will not incur secondary impacts, such as population changes. The proposed project will have a positive impact on public facilities through the renovation of existing facilities and addition of new pavilion and pot-washing station that will enhance the user experience at the park. The proposed site improvements will support the continued public use of the area for outdoor recreation and beach access.

(7) *Involves a substantial degradation of environmental quality.*

The project will not involve a substantial degradation of environmental quality. Long-term impacts to air and water quality, noise, and natural resources are not anticipated. The use of standard construction and erosion control BMPs outlined in this EA will minimize potential short-term impacts related to construction. Furthermore, the long-term impacts associated with the use of the Park will be minimized by the proposed Park improvements as the planned improvements will replace existing facilities that are nearing the end of its operational life.

(8) *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

As discussed in Section 3.18 Potential Cumulative, Indirect, and Secondary Impacts of the EA, the proposed project demonstrates DLNR's long-term commitment to offering outdoor recreational opportunities for the public in a manner that respects the natural environment and site conditions. While the proposed improvements may be implemented in phases as necessitated by available funding, they are not connected to or part of any future supplemental action.

(9) *Substantially affects a rare, threatened or endangered species, or its habitat.*

As discussed in Section 3.5 Biological Resources of the EA, the majority of plant species observed during a botanical survey conducted for the site, observed mostly non-native plant species and bird species. No listed threatened or endangered species were observed during the survey. As such, the proposed improvements are not expected to significantly affect species listed by the U.S. Fish and Wildlife Service or protected under the Endangered Species Act. Contractors will be directed to implement the BMPs recommended by the USFWS to avoid impacts on species and minimize effects from construction activities. Tree disturbance will be conducted outside of the bat birthing and pup rearing season to avoid potential impacts to Hawaiian hoary bats. Further measures to avoid potential impacts to sea turtles and Hawaiian seabirds are identified in Section 3.5, in the unlikely event that they may nest within the project area. No significant impacts to rare, threatened, or endangered species, or habitats are anticipated by the proposed Park improvements.

(10) *Detrimentially affects air or water quality or ambient noise levels.*

General temporary impacts associated with construction are identified in Section 3.0 Description of the Environmental Setting, Potential Impacts, and Mitigation Measures. Mitigation measures which are outlined in this EA will be applied during the on-going construction activity. No detrimental long-term impacts to air, water, or acoustic quality are anticipated with the project improvements. The improvements are not anticipated to detrimentally affect air or water quality or ambient noise levels. The proposed improvements to Park facilities are not anticipated to adversely affect ambient air quality or background noise levels, as the proposed improvements will allow the long-term continuation of the site's existing uses and activities.

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

The proposed park improvements will be sited in Flood Zone X, i.e. areas that have been determined to be outside of areas with a 0.2% chance of flooding. Portions of the Mālaekahana SRA Kalanai section that are in Flood Zone AE i.e. areas subject to 1% chance of annual flooding (100-year flood) will be avoided. No improvements will be made in the immediate near shore area along the coastline.

(12) *Substantially affects scenic vistas and view-planes identified in county or state plans or studies.*

The proposed Park improvements at the Mālaekahana SRA Kalanai Section will not obstruct or affect scenic vistas and view planes. Structures will be of similar height and size to existing structures and sited in similar locations to the existing structures. Landscaping may further reduce the visual impact of envisioned structures.

(13) *Require substantial energy consumption.*

Construction of the project will not require substantial energy consumption relative to other similar sized projects. The energy consumption from the long-term operation and use of the proposed Park improvements will be minimal and involve lighting at the comfort stations, pavilion, and pathways. The future level of energy consumption at the park is not anticipated to be significantly different than current energy use.

6.3 Summary

Based on the information and findings in this EA and coordination with local, state, and federal regulatory agencies, beneficiaries, and the public, it is determined that, with the incorporation of mitigation measures, this Project will have no significant impact on the natural or human environment. Further evaluation of the Project's impacts through the preparation of an EIS is not warranted. The EA recommends mitigation measures to alleviate impacts when such impacts are identified. Based on the analysis conducted as part of this DEA for the proposed Mālaekahana SRA Kalanai-Section, an Anticipated Finding of No Significant Impact is anticipated for this project.

The proposed improvements to the Mālaekahana SRA Kalanai Section will allow continued access and enjoyment of this State park by members of the public while mitigating potential impacts to the surrounding environment that may be caused by regular park use.

Agencies, Organizations and Individuals Consulted in the EA Process

Chapter 7

Agencies, Organizations and Individuals Consulted in the EA Process

A pre-consultation Letter was sent on October 24, 2025 to initiate the environmental review process. Comment received during the Pre-Consultation Process are included in Appendix E. Where applicable, feedback received from agencies and organizations were incorporated in this Draft EA.

As part of the pre-consultation process for the EA, a presentation to the Ko'olauloa Neighborhood Board was made on November 13, 2025. The primary comments and questions raised during the meeting included clarification on proposed improvements at the Kalanai Section (project description details are disclosed in Chapter 2), questions on which community organizations were notified (list of organizations notified included in Table 7-1) and concerns with tourists and visitor impacts on the community. Meeting minutes from the November 13, 2025 Ko'olauloa Neighborhood Board are also included in Appendix E.

Table 7-1 below lists the organizations and individuals contacted during the early consultation process in preparation of the Draft EA. Of the individuals and parties that were consulted, Table 7-1 also indicates which organizations or individuals provided comments. All parties listed in Table 7-1 will be provided with the opportunity to comment on the Draft EA.

Table 7-1 Agencies, Organizations, and Individuals Consulted During Early Consultation Period		
Respondents and Distribution	Early Consultation	Early Consultation Comments Received
FEDERAL AGENCIES		
U.S. Fish and Wildlife Service	X	X
U.S. National Parks Service	X	
U.S. National Oceanic and Atmospheric Administration	X	
STATE AGENCIES		
Department of Accounting and General Services	X	X
Department of Agriculture	X	
DBEDT, Office of Planning and Sustainable Development	X	X
Department of Education, Windward District	X	
Department of Education, Planning Section, Facilities Development Branch	X	X

Table 7-1 Agencies, Organizations, and Individuals Consulted During Early Consultation Period		
Respondents and Distribution	Early Consultation	Early Consultation Comments Received
Department of Health (DOH)	X	
Department of Accounting and General Services	X	X
Department of Education, Planning Section	X	X
HDOH, Clean Air Branch	X	X
HDOH, Clean Water Branch	X	
HDOH, Indoor and Radiological Health Branch	X	
HDOH, Safe Drinking Water Branch	X	
HDOH, Solid and Hazardous Waste Branch	X	
HDOH, Surface Water Protection Branch	X	
HDOH, Wastewater Branch	X	
Department of Hawaiian Home Lands	X	
Department of Land and Natural Resources (DLNR)	X	X
DLNR, Commission on Water Resources Management	X	X
DLNR, Engineering Division	X	X
DLNR, Land Division – O’ahu District	X	
DLNR, State Historic Preservation Division	X	
DLNR, Office of Conservation and Coastal Lands	X	
DLNR, Division of Forestry and Wildlife	X	
Department of Transportation	X	X
Kahuku Public and School Library	X	
Kahuku Intermediate and High School	X	
Office of Hawaiian Affairs	X	
CITY AND COUNTY OF HONOLULU AGENCIES		
Board of Water Supply	X	X
Department of Emergency Management	X	
Department of Environmental Services	X	
Department of Land Management	X	
Department of Facility Maintenance	X	X

Table 7-1 Agencies, Organizations, and Individuals Consulted During Early Consultation Period		
Respondents and Distribution	Early Consultation	Early Consultation Comments Received
Department of Parks and Recreation	X	
Department of Planning and Permitting	X	X
Department of Transportation Services	X	
Honolulu Fire Department	X	X
Honolulu Police Department	X	X
Mayor's Office of Culture and the Arts	X	
Office of Climate Change, Sustainability, and Resiliency	X	
Ko'olauloa Neighborhood Board No. 28	X	X
ELECTED OFFICIALS		
Senator Brenton Awa – State Senate District 23	X	
Representative Sean Quinlan – State House District 47	X	
Council Member Matt Weyer – Honolulu City Council District 2	X	
NON-GOVERNMENT ORGANIZATIONS		
Bringham Young University – Hawai'i	X	
Hawai'i Reserves Inc.	X	
Hui Malama O Na Kūpuna Hawai'i Nei	X	
Hui O Hau'ula	X	
Ka'a'awa Community Association	X	
Kahuku Community Association	X	
Kahuku Village Association	X	
Ko'olauloa Hawaiian Civic Club	X	
Lā'ie Community Association	X	
Lanihuli Community Development Corporation	X	
Northshore Chamber of Commerce	X	
Polynesian Cultural Center	X	
Punalu'u Community Association	X	
Sunset Beach Community Association	X	
INDIVIDUAL PROPERTY OWNERS		

Table 7-1 Agencies, Organizations, and Individuals Consulted During Early Consultation Period		
Respondents and Distribution	Early Consultation	Early Consultation Comments Received
5-6-001-011*	X	
5-6-001-026*	X	
5-6-001-027*	X	
5-6-001-028	X	
5-6-001-029	X	
5-6-001-012	X	
5-6-001:030*	X	
5-6-001-031	X	
5-6-001:013	X	
5-6-001:032	X	
5-6-001:033	X	
5-6-001:090	X	
5-6-001:089*	X	
5-6-001:088	X	
5-6-001:087	X	
5-6-001:086*	X	
5-6-001:085*	X	
5-6-001:084	X	
5-6-001:083*	X	
5-6-001:082*	X	
5-6-001:081	X	
5-6-001:080*	X	
5-6-001:079*	X	
5-6-001-078*	X	
5-6-001:077*	X	
5-6-001:076*	X	
5-6-001:075*	X	
5-6-001:074*	X	
5-6-001:073*	X	
5-6-001:072*	X	
5-6-001:071*	X	

Table 7-1 Agencies, Organizations, and Individuals Consulted During Early Consultation Period		
Respondents and Distribution	Early Consultation	Early Consultation Comments Received
5-6-001:070*	X	
5-6-001:069*	X	
5-6-001:068*	X	
5-5-009:046	X	

* Indicates that a letter was sent to the address listed on the City and County of Honolulu Real Property Tax website for the corresponding Tax Map Key number. However, for these property Tax Map Key numbers, the letter was returned by the Postal Service because the Postal Service indicated that the letter was “not deliverable as addressed – unable to forward”.

7.1 Response to Comments Received During Early Consultation

Table 7-2: Responses to Comments Received During Early Consultation		
Stakeholder	Comment Summary	Response
U.S. Fish & Wildlife Service	Please use the Information for Planning and Consultation (IPaC) online portal https://ipac.ecosphere.fws.gov/ to obtain official species lists (threatened or endangered). Please see avoidance and minimization measures http://www.fws.gov/media/animal-avoidance-and-minimization-measures-may-2023-0	Acknowledged. The tools were utilized as part of the biological assessment report completed for this EA in addition to the flora and fauna survey that was conducted as part of this environmental assessment. (See appendix A Biological Assessment Surveys)
State Office of Planning and Sustainable Development	<p>"1. A Joint HEPA / NEPA EA may be prepared for this project on state lands that may also receive federal funding.</p> <p>2. The subject EA should include an assessment with mitigation measures, if needed as to how the proposed projects conform to each of the CZM objectives and policies set-forth in HRS 205A-2.</p> <p>3. Consult with DPP on SMA permitting and compliance</p> <p>4. EA should provide a map of 3.2 foot sea level rise and assess potential impacts from SLR</p> <p>5. CZMA section 307 requires projects with federal nexus to be conducted in a manner consistent with the state's CZM Program. Contact OPSD for federal consistency review of the project."</p>	<p>"1. Acknowledged. DLNR intends to prepare an EA document that satisfies the requirements of HEPA and NEPA.</p> <p>2. Acknowledged. See DEA Section 5.7 Hawai'i Coastal Zone Management Program</p> <p>3. Acknowledged. DLNR will consult with DPP on SMA permitting and compliance</p> <p>4. Acknowledged. See DEA Section 3.4 Natural and Manmade Hazards.</p> <p>5. Acknowledged. Will comply."</p>
State Department of Transportation	No comments.	Acknowledged.
State - Department of Health Clean Air Branch	"Please reference standard comments for land use reviews: https://health.hawaii.gov/cab/clean-air-branch/standard-comments-for-land-use-reviews/ Fugitive dust mitigation measures. "	Acknowledged and will comply. Mitigation measures to minimize dust will be implemented during construction.
State -- Department of Education	Project will not affect the operations of DOE public school campuses	Acknowledged.
State - Department of Accounting and General Services	No comments	Acknowledged.

Table 7-2: Responses to Comments Received During Early Consultation

Stakeholder	Comment Summary	Response
City and County -- Planning and Permitting	<ol style="list-style-type: none"> 1. DEA should include a discussion of Project's consistency with each of the SMA policies presented in ROH 25-3.1 and 25-4.1. 2. DEA should address corresponding policies in HRS 205A. 3. DEA should address the proposed project's consistency with the relevant policies and objectives of the City's General Plan and KLSCP and development standards in ROH Chapter 21, Land Use Ordinance relating to the P-2 District and consistency with HRS 205 Agriculture District if project is in the State Agriculture District. 4. Shoreline setback ROH Chapter 26. DEA should disclose whether any activities would extend into the shoreline setback area. The shoreline setback area extends a minimum of 60 feet mauka of the certified shoreline plus 70 times the annual historic shoreline erosion rate, where applicable, up to a maximum 130 feet. 5. The location of the shoreline and shoreline setback line, in relation to the proposed improvements, should be shown on a site plan submitted for the forthcoming SMA Major Permit. 6. DEA should discuss how coastal hazards are projected to impact the project site and related mitigation measures. Include SLR-XA map in relation to proposed improvements. 7. Include an archaeological analysis and Ka Paakai Analysis. 8. Discuss how the improvements will impact surface, ground, and wastewater. Discuss any changes to topography of site and how they will relate to applicable drainage and flood zone regulations. 9. Discuss cumulative impacts. 	<ol style="list-style-type: none"> 1. Acknowledged. See DEA Section 5.11 Special Management Area 2. Acknowledged. See DEA Section 5.7 Hawai'i Coastal Zone Management Act. 3. Acknowledged. See DEA Sections 5.8 City and County of Honolulu General Plan, 5.9 City and County of Honolulu Land Use Ordinance Guidelines, and 5.5 State Land Use District 4. Acknowledged. Will comply. 5. Acknowledged. Will comply with this requirement when the SMA Major Permit application is submitted to DPP for this project. 6. Acknowledged. See DEA Section 3.4 Natural and Manmade Hazards 7. Acknowledged. See DEA Section 3.15 Historic, Archaeological, and Cultural Resources and 5.6 Ka Pa'akai v. Land Use Commission 8. Acknowledged. See DEA Sections 3.4 Natural and Manmade Hazards, 3.6 Water Resources, and 3.8 Utilities and Infrastructure
City and County - HPD	Provide adequate notice prior to any road closures, as any impact to pedestrian and/or vehicular traffic may result in complaints.	Acknowledged and will comply.
City and County -- Fire Department	<p>Fire access roads must be within 150 feet of the first story of a building in accordance with NFPA 1; 2021 Edition, Section 18.2.3.2.2.</p> <p>Fire access roads shall be in accordance with NFPA 1, 2021 Edition, Section 18.2.3.</p> <p>Approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities,</p>	Acknowledged and will comply. Suggestions incorporated as mitigation measures in DEA Section 3.12 Fire .

Table 7-2: Responses to Comments Received During Early Consultation

Stakeholder	Comment Summary	Response
	buildings, or portions of buildings are hereafter constructed in accordance with NFPA 1, 2021 Edition, Sections 18.3 and 18.4. Civil drawings shall be submitted to HFD for review and approval	
City and County -- Department of Facility Management	No City and County stormwater assets are located in and around the subject area nor in the vicinity of the proposed project and therefore the project will have no impact on City stormwater infrastructure. Discuss how wastewater from pot-washing station will be treated. Discuss how wastewater from showers will be treated. If shower water is not directed to wastewater system, DFM highly recommends use of infiltration systems that quickly transport runoff away from the area and provide storage/slow percolation for settling or absorption of shower runoff via sand filters, bioswales, permeable membranes etc.	Acknowledged. See DEA Section 3.8 Utilities and Infrastructure.
City and County -- BWS	BWS does not provide service to the project area. Fire protection and potable water must be provided by a private water system servicing the area.	Acknowledged. Project will continue to seek water service from the Laie Water Company which currently provides water service to the park.
State Department of Land and Natural Resources Engineering Division	The project needs to research the Flood Hazard Zone designation for the project area. National Flood Insurance Program Title 44 of the Code of Federal Regulations are in effect when development falls within a Special Flood Hazard Area (high-risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.	Flood hazards and flood hazard zones are discussed in DEA Section 3.4 Natural and Manmade Hazards. Portions of the Mālaekahana SRA Kalanai Section closest to the ocean are in Flood Zone AE while the majority of the Kalanai Section is in Flood Zone X. The proposed improvements will be located in Flood Zone X.
State Department of Land and Natural Resources – Commission on Water Resource Management	Utilize BMPs for stormwater management to minimize the impact of the project on the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Approvals for the project should be conditioned upon DOH acceptance of any resulting water quality requirements to mitigate ground or surface water contamination.	Acknowledged. The project will incorporate BMPs to manage storm water see DEA Section 3.6 Water Resources. Improvements to the IWS's that will service the project area will comply with DOH regulations and standards. State Parks will obtain all required DOH approvals for this project. Please see DEA Section 3.8 Utilities and Infrastructure.
Carol Feinga	Please keep the Ko'olauloa Neighborhood Board informed as this project progresses.	Acknowledged. Will follow suggestion.

Table 7-2: Responses to Comments Received During Early Consultation

Stakeholder	Comment Summary	Response
Comments received at the November 13, 2025 Ko'olauloa Neighborhood Board Meeting	I do not like camper vans. They cause nuisance within my neighborhood.	Acknowledged. DLNR is considering a variety of recreational amenities to provide at this State Park including options for members of the public to use camper vans. Should the camper van option be more seriously pursued, DLNR will look at potential mitigation measures and management best practices to minimize nuisances that camper van use may cause to other park users and to the surrounding community.

This page left blank intentionally.

List of References

Chapter 8

List of References

- AECOS, 2025. *Biological Survey. Mālaekahana State Recreation Area – Kalanai Section, Lā‘ie Ahupua‘a, Ko‘olauloa District, Island of O‘ahu.*
- City and County of Honolulu, Department of Planning and Permitting. 2021. *O‘ahu General Plan (Final Version)*. Accessed online: https://www.honolulu.gov/dpp/wp-content/uploads/sites/56/2024/07/General_Plan_RESO_21-23_CD1_For_DISTRIBUTION.pdf
- City and County of Honolulu, Department of Planning and Permitting. 2020. *Ko‘olau Loa Sustainable Communities Plan (Pre-Final Revised Version)*. Accessed online: https://www.honolulu.gov/dpp/wp-content/uploads/sites/56/2024/07/Koolau_Loa_SCP_2020.pdf
- Giambelluca, T.W., et al., 2013. *Evapotranspiration of Hawai‘i*. Final report submitted to the U.S. Army Corps of Engineers – Honolulu District, and the Commission on Water Resource Management, State of Hawai‘i. Accessed online: <https://evapotranspiration.geography.hawaii.edu/assets>
- Group 70 International, Inc. 2014. *Ko‘olau Loa Watershed Management Plan*. Prepared for the Honolulu Board of Water Supply. Accessed online: <https://www.boardofwatersupply.com/bws/media/files/koolau-loa-wmp-prefinal-plan-rev2-2009-07-27.pdf>
- Hawai‘i Climate Change Mitigation and Adaptation Commission, 2017. *Hawai‘i Sea Level Rise Vulnerability and Adaptation Report*. Prepared by Tetra Tech, Inc. and the State of Hawai‘i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai‘i Department of Land and Natural Resources Contract No: 64064. Retrieved on January 25, 2023 from: https://climateadaptation.hawaii.gov/wp-content/uploads/2017/12/SLR-Report_Dec2017.pdf
- Hawai‘i County Civil Defense Agency, 2020. *County of Hawai‘i Multi-Hazard Mitigation Plan*. Prepared by Tetra Tech. Accessed online: https://dod.hawaii.gov/hiema/files/2022/08/2020-05-18_HawaiiCountyHMP_PublicReviewDraft.pdf
- Hawaii Reserves Inc. 2025. Accessed November 13, 2025. Accessed online: <https://www.hrihelp.com/laie-water-company>
- Hawai‘i State Civil Defense. n.d. *Tsunami Evacuation Zone Mapping Tool*. Accessed October 28, 2025. Accessed online: <https://dod.hawaii.gov/hiema/tsunami-evacuation-zones/>
- Hawai‘i State Department of Business Economic Development and Tourism. 2023. *State of Hawai‘i Data Book*. Accessed online: October 20, 2025. Accessed online: <https://files.hawaii.gov/dbedt/economic/databook/2023-individual/01/011423.pdf>

Hawai'i State Department of Education. 2024. *Hawai'i Department of Education Enrollment for School Year 2024-2025*. Accessed online: October 20, 2025. Accessed online: <https://hawaiipublicschools.org/DOE%20Forms/Enrollment/HIDOEenrollment2024-25.pdf>

Hawai'i State Department of Land and Natural Resources Division of Aquatic Resources. 2008. *Atlas of the Hawaiian Watersheds & Their Aquatic Resources*. Accessed October 22, 2025. Accessed online: <https://www.hawaiiwatershedatlas.com/watersheds/oahu/31006.pdf>

Honua Consulting, LLC. 2025. *Final– Literature Review and Field Inspection Report Mālaekahana State Recreation Area – Kalanai Section, Lā'ie Ahupua'a, Ko'olauloa District, Island of O'ahu*.

Honua Consulting, LLC. 2025. *Final – Cultural Impact Assessment for Mālaekahana State Recreation Area – Kalanai Section, Lā'ie Ahupua'a, Ko'olauloa District, Island of O'ahu*.

The Limitaco Consulting Group. 2016. *Final Environmental Assessment for the Mālaekahana State Recreation Area – Kahuku Section Park Improvements*. Prepared for the State of Hawai'i Department of Land and Natural Resources Division of State Parks. Accessed September 12, 2025. Accessed online: https://files.hawaii.gov/dbedt/erp/EA_EIS_Library/2016-07-23-OA-FEA-Malaekahana-Area-Kahuku-Park.pdf.

PBR Hawai'i and Associates, Inc. 2021. *Statewide Comprehensive Outdoor Recreation Plan 2021*. Prepared for the State of Hawai'i Department of Land and Natural Resources Division of State Parks. Accessed September 12, 2025. Accessed online: <https://dlnr.hawaii.gov/dsp/files/2022/04/2022-02-04-SCORP-FINAL-COMPILED.pdf>

University of Hawai'i at Mānoa Sea Grant College Program. June 2014. *Climate Change Impacts in Hawai'i - A summary of climate change and its impacts to Hawai'i's ecosystems and communities*.

U.S. Army Corps of Engineers. June 30, 2014. "Procedures to Evaluate Sea Level Change." ETL 1100-2-1. Accessed online: http://www.publications.usace.army.mil/Portals/76/Publications/EngineerTechnicalLetters/ETL_1100-2-1.pdf

8.1 Geographical Information Systems Data

Aerial Imagery

Google Earth Aerial Imagery, 2013.

Tax Map Key

City and County of Honolulu, February 2016.

Appendices

Appendix A

Biological Assessment Surveys

**Biological assessment surveys for the
Mālaekahana State Recreation Area
improvements, Lā 'ie, O'ahu**



AECOS, Inc.
45-939 Kamehameha Highway
Suite 201
Kāne'ōhe, Hawai'i 96744

January 8, 2026

Biological assessment surveys for the Mālaekahana State Recreation Area improvements, Lā ‘ie, O‘ahu

January 8, 2026

DRAFT

AECOS No. 1912

Kamryn Yoneshige, Eric B. Guinther, and Michael Tuerk

AECOS Inc.

45-939 Kamehameha Highway, Suite 201

Kāne‘ohe, Hawai‘i 96744

Phone: (808) 234-7770 Fax: (808) 234-7775 Email: kamryn@aecos.com

Introduction

The Hawai‘i State Department of Land and Natural Resources (HDLNR) is planning improvements to Mālaekahana State Recreation Area (Mālaekahana SRA; herein, the “Project”). The Project includes replacing existing comfort stations, building a new pavilion with a washing station and rinsing shower, and upgrading the existing wastewater systems. The improvements are being undertaken to enhance utilization of the park for recreational use including camping and day use activities (LTCG, 2016). AECOS, Inc. was contracted by Group 70 International Inc. (G70) to conduct flora and fauna surveys within the Project area and assess potential impacts on natural resources.¹

Area Description

The Project area is situated inland of Kalanai Point separating Lā‘ie Bay and Mālaekahana Bay (Figure 1). The Project area is approximately 7 ac (2.8 ha) and encompasses parking, campgrounds, and an expansive lawn (Figures 2 and 3). The parkland in the Project area is open and maintained with scattered trees (Figure 4 and 5). The shoreline around Kalanai Point is a calcareous sand beach, lined inland with shrubby vegetation, mostly tree heliotrope and *naupaka* (Clark, 2002).

¹ This document is produced for inclusion in an EA for the Project and will become part of the public record.

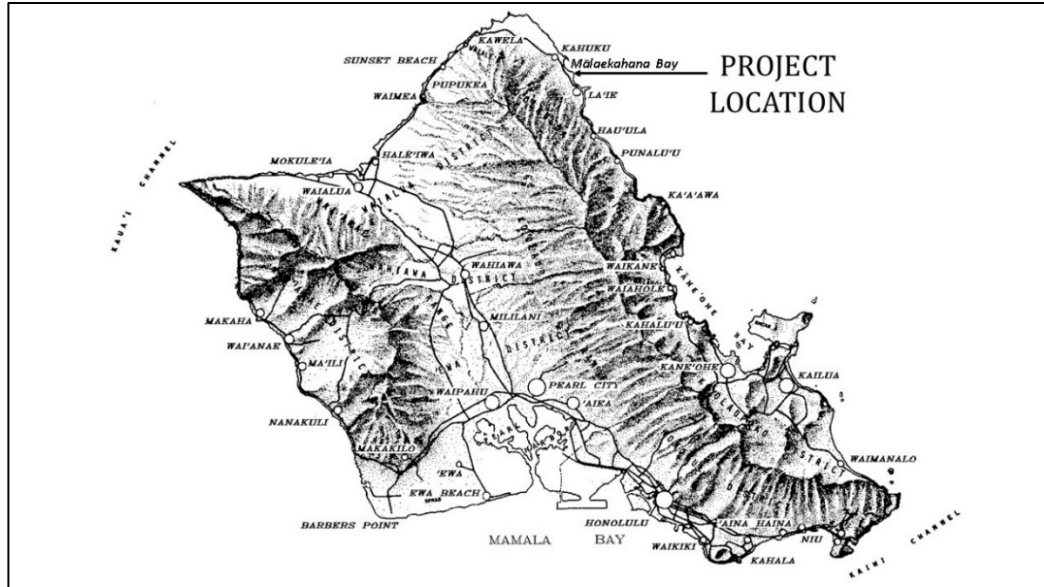


Figure 1. Project location north of Lā'ie.



Figure 2. Project site (outlined in red) in Lā'ie, O'ahu.



Figure 3. Maintained lawn beside the parking lot.

The *Rainfall Atlas of Hawai‘i* approximates the average annual rainfall at the Project site as 1,245 mm (49 in; Frazier and Giambelluca, 2017). Most rainfall occurs during the rainy season from November through April. The U.S. Climate Normals dataset reports average annual rainfall. The nearest climate normal station, “Kii-Kahuku 911”, reports average rainfall as 838 mm (33 in) based on a 30-year average (1991-2020; NOAA-NCEI, 2025).

Methods

Botanical Survey

AECOS biologists E. Guinther and M. Tuerk surveyed the Project area on October 15, 2025, using wandering transects. Plants species were identified as they were encountered. Any plant not immediately recognized during the survey was photographed and/or a representative feature (fruit, flower, branch) was collected for later identification at the laboratory. Species names follow *Manual of the Flowering Plants of Hawai‘i* (Wagner, Herbst, & Sohmer, 1990; Wagner and



Figure 4. Recreational area for camping and picnicking within the Project site.



Figure 5. Area of parkland forest (mostly ironwood) with minimal undergrowth.

Herbst, 1999) for native and naturalized flowering plants, and *A Tropical Garden Flora* (Staples and Herbst, 2005) for ornamental plants. More recent name changes for naturalized plant species follow Imada (2025).

Terrestrial Vertebrates Survey

Avian Survey

On October 15, 2025, AECOS biologist K. Yoneshige conducted an avian survey within the Project area. Birds were identified to species by visual observation, aided by Leica 8 X 42 binoculars, and by listening for vocalizations. Species observed were recorded as incidental observations rather than species counts. Weather conditions were good for avian detection during the survey, with unlimited visibility, no precipitation, and light Trade winds (15-20 mph). The avian phylogenetic order and nomenclature used in this report follows the AOU *Checklist of North and Middle American Birds 2024* (Chesser et al., 2024) and the 66th supplement to the checklist (Chesser et al., 2025).

Terrestrial Mammals

AECOS biologists recorded all mammals encountered during the survey. Indicators of mammalian presence, such as tracks, scat, and other sign were noted. Mammalian phylogenetic order and nomenclature follow *Mammal Species of the World* (Wilson & Reeder, 2005), Pinzari et al. (2020) for Hawaiian hoary bat, and Patou et al. (2009) for Asian mongoose.

Results

Vegetation

Most of the survey area is maintained and open lawn (Fig. 3 and 4). A few areas are in open forest (Figs. 4 and 5). Paved access roads and parking constitute a significant portion of the area, whereas structures (i.e., restrooms) and pathways cover much of the remainder. Identified plants tend to be trees and herbaceous plants along lawn and roadway margins.

Flora

Table 2 presents a listing of the plants identified in the survey. Forty-four (44) species were identified. Of these, only two native indigenous species and two Early Polynesian introductions were observed. The coconut trees occur just

Table 2. Listing of plants observed at the Kalanai side of Mālaekahana SRA.

Species listed by family	Common name	Status	Abundance	Notes
<i>FLOWERING PLANTS</i>				
MONOCOTS				
ARECACEAE				
<i>Cocos nucifera</i> L.	<i>niu</i>	Pol	U	<1>
CYPERACEAE				
<i>Cyperus rotundus</i> L.	nut grass, <i>kili‘o‘opu</i>	Nat	O	
<i>Kylinga mindsorensis</i> Steud.	---	Nat	R	
LILIACEAE				
<i>Hymenocallis pedalis</i> Herbert	spider lily	Orn	U	
POACEAE				
<i>Axonopus compressus</i> (Swartz) P. Beauv.	brd-lvd. carpet grass	Nat	R	
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	Nat	AA	
<i>Dactyloctenium aegypticum</i> (L.) Willd.	beach wiregrass	Nat	R	
<i>Digiteria</i> cf. <i>bicornis</i>		Nat	R	
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	Nat	C	
<i>Eragrostis amabilis</i> (L.) Wight & Arnott	Japanese lovegrass	Nat	R	
<i>Megathrysus maximus</i> (Jacq.) B.K. Simon & W.L. Jacobs	Guinea grass	Nat	C	
<i>Sporobolus</i> cf. <i>tenuissimus</i> (Mart. Ex Schrank) Kuntze	---	Nat	C	
<i>Urochloa mutica</i> (Forssk.) T.Q. Nguyen	California grass	Nat	U	
<i>FLOWERING PLANTS</i>				
EUDICOTS				
ACANTHACEAE				
<i>Asystasia gangetica</i> (L.) T. Anderson	Chinese violet	Nat	O	
AIZOACEAE				
<i>Sesuvium portulacastrum</i> (L.) L.	<i>‘ākulikuli</i>	Ind	R	
<i>Tetragonia tetragonioides</i> (Pall.) Kuntze	New Zealand spinach	Nat	R	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
AMARANTHACEAE				
<i>Amaranthus viridis</i> L.	slender amaranth	Nat	R	
<i>Alternanthera pungens</i> Kunth	khaki weed	Nat	A	
ASTERACEAE (COMPOSITAE)				
<i>Bidens alba</i> (L.) DC.	beggartick	Nat	U	
<i>Bidens pilosa</i> L.	beggartick	Nat	C	
<i>Calyptocarpus vialis</i> Less.	---	Nat	A	
ASTERACEAE (cont.)				
<i>Conyza canadensis</i> (L.) Cronq.	horseweed	Nat	O	
<i>Pluchea carolinensis</i> (Jacq.) G. Don	sourbush	Nat	U	
CARIACEAE				
<i>Carica papaya</i> L.	papaya	Nat	R	
CASUARINACEAE				
<i>Casuarina equisetifolia</i> L.	common ironwood	Nat	O	
CLUSIACEAE				
<i>Calopyllum inophyllum</i> L.	<i>kamani</i>	Nat	R	
COMBRETACEAE				
<i>Terminalia catappa</i> L.	tropical almond	Nat	U	
CUCURBITACEAE				
<i>Coccinia grandis</i> (L.) Voigt	scarlet-fruited gourd	Nat	R	
EUPHORBIACEAE				
<i>Euphorbia hypericifolia</i> L.	graceful spurge	Nat	O	
<i>Euphorbia prostrata</i> Aiton		Nat	U	
<i>Macaranga tanarius</i> (L.) Müll Arg.		Nat	U	
FABACEAE				
<i>Leucaena leucocephala</i> (Lam.) de Wit	<i>koa haole</i>	Nat	U	
MALVACEAE				
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	Nat	C	
NICTAGINACEAE				
<i>Boerhavia coccinea</i> Mill.	false <i>alena</i>	Nat	U	
PASSIFLORACEAE				
<i>Passiflora foetida</i> L.	love-in-a-mist	Nat	R	
<i>Passiflora suberosa</i> L.	<i>huehue haole</i>	Nat	R	
PLANTAGINACEAE				
<i>Plantago lanceolata</i> L.	---	Nat	U	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
PLANTAGINACEAE (cont.)				
<i>Plantago major</i> L.		Nat	U	
POLYGONACEAE				
<i>Coiccoloba uvifera</i> (L.) L.	sea grape	Nat	R	
PORTULACEAE				
<i>Portulaca oleracea</i> L.	pigweed	Nat	R	
RUBIACEAE				
<i>Morinda citrifolia</i> L.	<i>noni</i>	Pol	U	
<i>Spermacoce assurgens</i> Ruiz & Pav.	buttonweed	Nat	R	
SOLANACEAE				
<i>Solanum americanum</i> Mill.	<i>pōpolo</i>	Ind	R	
VERBENACEAE				
<i>Lantana camara</i> L.	lantana	Nat	R	

Legend to Table 1

STATUS = distributional status for the Hawaiian Islands:

Ind - indigenous; native to Hawai‘i, but not unique to the Hawaiian Islands.

Nat - naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of the Cook Expedition in 1778, and well-established outside of cultivation.

Orn - exotic, ornamental or cultivated; plant not naturalized (not well established outside of cultivation).

Pol - Polynesian introduction before 1778.

ABUNDANCE = occurrence ratings for plants by area:

R - Rare seen in only one or perhaps two or three times.

U - Uncommon seen at most in several locations.

O - Occasional seen with some regularity.

C - Common observed numerous times during the survey.

A - Abundant found in large numbers; may be locally dominant.

NOTES:

<1> - Sign of CRB (Coconut Rhinoceros beetle) damage.

outside the survey area. The number of species is small, and the native species count is low. Most of the survey area is maintained as parking and park use, with minimal landscaping beyond the scattered trees.

Avian Fauna

A total of 15 bird species, representing 6 separate families, were recorded during the survey and are presented in Table 2.

Table 2. Avian species detected within Project area.

Common Name	ORDER FAMILY <i>Species</i>	Status
	ANSERIFORMES	
	ANATIDAE - Ducks, Geese & Swans	
	Anatinae - Ducks	
Hawaiian Duck x Mallard hybrid	<i>Anas wyvilliana</i> x <i>A. platyrhynchos</i>	A
	GALLIFORMES	
	PHASIANIDAE - Pheasants & Partridges	
	Phasianinae - Pheasants & Allies	
Red Junglefowl	<i>Gallus gallus</i>	A
	COLUMBIFORMES	
	COLUMBIDAE - Pigeons & Doves	
	Columbinae - Typical Pigeons and Doves	
Spotted Dove	<i>Spilopelia chinensis</i>	A
	Raphinae - Fruit-Doves, Australian Doves & Allies	
Zebra Dove	<i>Geopelia striata</i>	A
	CHARADRIIFORMES	
	CHARADRIIDAE - Golden-Plovers, Lapwings & Plovers	
	Pluvialinae - Golden-Plovers	
Pacific Golden-Plover	<i>Pluvialis fulva</i>	IM
	Arenariinae - Turnstones	
Ruddy Turnstone	<i>Arenaria interpres</i>	IM
	PROCELLARIIDAE - Shearwaters & Petrels	
	SULIFORMES	
	FREGATIDAE - Frigatebirds	
Great Frigatebird	<i>Fregata minor</i>	IR

Table 2 (continued).

Common Name	ORDER FAMILY	Status
	<i>Species</i>	
	PASSERIFORMES	
	PYCNONOTIDAE - Bulbuls	
Red-vented Bulbul	<i>Pycnonotus cafer</i>	A
	STURNIDAE - Starlings	
Common Myna	<i>Acridotheres tristis</i>	A
	ESTRILDIDAE - Estrildid Finches	
Java Sparrow	<i>Lonchura oryzivora</i>	A
Common Waxbill	<i>Estrilda astrild</i>	A
	PASSERIDAE - Old World Sparrows	
House Sparrow	<i>Passer domesticus</i>	A
	FRINGILLIDAE - Fringilline and Carduline Finches & Allies Carduelinae - Carduline Finches and Hawaiian Honeycreepers	
House Finch	<i>Haemorhous mexicanus</i>	A
	THRAUPIDAE - Tanagers Thraupinae - Core Tanagers	
Red-crested Cardinal	<i>Paroaria coronata</i>	A
Saffron Finch	<i>Sicalis flaveola</i>	A

Legend to Table 2.

STATUS = distributional status for the Hawaiian Islands:

A = Alien, non-native introduced established in the Hawaiian Islands

IM = Indigenous migratory species not unique to the Islands, does not nest in the Hawaiian Islands

IR = Indigenous resident species that nests in the Hawaiian Islands

Terrestrial Mammals

Small Asian mongoose (*Urva auropunctatus*) and domestic dog (*Canis lupus familiaris*) were observed during the survey.

Discussion

Recommendations in this discussion section are based partly on U.S. Fish and Wildlife Service, Animal Avoidance and Minimization Measures (USFWS-PIFWO, 2023). Implementation of the recommendations (provided below as bulleted items) by the Project contractor will minimize impacts to sensitive or listed species to the maximum extent practicable.

Floral Resources

No significant or conservation worthy plants occur in the survey area. The native and Early Polynesian plants are common across the Hawaiian Islands. The large *niu* (coconut tree) show signs of significant damage by Coconut rhinoceros beetle and will likely need to be removed in the future.

Terrestrial Vertebrates Resources

Avian Resources

Protected seabirds include Hawaiian Petrel (*Pterodroma sandwichensis*), Wedge-tailed Shearwater (*Ardenna pacifica*), Newell’s Shearwater (*Puffinus newelli*), and Band-rumped Storm-petrel (*Hydrobates castro*). Hawaiian Petrel and Newell’s Shearwater nest in upland mountainous habitat and have recently been detected on the Island of O‘ahu (Young et al., 2019). In the summer and fall, nocturnally flying seabirds (especially fledglings) transiting to the sea from inland locations can become disoriented by exterior lighting. When disoriented, seabirds can collide with man-made structures or the ground. If not killed outright, dazed or injured birds are easy targets of opportunity for feral mammals (Podolsky, et al., 1998; Ainley, et al., 2001; Day, et al., 2003). The primary cause of mortality in both Hawaiian Petrel and Newell’s Shearwater is predation by alien mammalian species at the nesting colonies (USFWS, 1983; Ainley, et al., 2001). Collision with man-made structures is considered the second most significant cause of mortality of these seabirds in Hawai‘i. No suitable nesting habitat for seabird species occurs in the Project area.

- Deleterious impacts to transiting seabirds can be avoided if construction occurs during daylight hours and any outdoor lighting installed temporarily or permanently is fully “dark sky compliant” (HDLNR-DOFAW, 2016).

Mammalian Resources

It is possible that Hawaiian hoary bat (*Lasiurus semotus*), or *ōpe‘ape‘a*, overfly or otherwise utilize the Project area on a seasonal basis. The potential impact of the Project to bats would occur only when vegetation is cleared and grubbed. Removal of trees could displace individual bats using a tree as a roosting location. However, this species of bat uses multiple roosts within a home territory (Bonaccorso, 2015), so the disturbance associated with removal of any particular tree would be minimal. An exception might be during the pupping season, if a female bat carrying a pup is unable to rapidly vacate a roost tree that is being felled, or if a young unattended pup is unable to flee a tree that is being felled.

- Potential adverse impacts to Hawaiian hoary bat can be avoided or minimized by not clearing woody vegetation taller than 15 ft (4.6 m) between June 1 and September 15, the bat pupping season.

Other Resources of Potential Concern

Critical Habitat

Critical Habitat for the Green sea turtle (*Chelonia mydas*) begins approximately 250 ft from the Project area (USFWS, n.d.-a; USFWS, 2023; see Figures 6 and 7) along the extensive beach front. Deleterious impacts to Critical Habitat and this federally-protected species are not anticipated, so long as work is limited to within the Project site.

Yellow-faced Bees

Seven species of yellow-faced bees (*Hylaeus* spp.; *nalo meli maoli*) in Hawai‘i are listed as endangered under the U.S. Endangered Species Act (USFWS, 2016). AECOS biologists observed plant resources that support yellow-faced bees, including tree heliotrope and *naupaka* just out of the Project site. If one or more of these federally-protected species are present, deleterious impacts are not anticipated, so long as work is contained within the Project site.



Figure 6. Stretch of beach with vegetation for yellow-faced bees and Critical Habitat for the Green sea turtle (*Chelonia mydas*).



Figure 7. Federally-designated Critical Habitat (green) near the Project site (outlined in red).

References Cited

- Ainley, D. G, R. Podolsky, L. Deforest, G. Spencer, and N. Nur. 2001. The Status and Population Trends of the Newell’s Shearwater on Kaua’i: Insights from Modeling, in: Scott, J. M, S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna. Studies in Avian Biology No. 22.* Cooper’s Ornithological Society, Allen Press, Lawrence, Kansas. 108-123 pp.
- Bonaccorso, F. J., C. M. Todd, A. C. Miles, and P. M. Gorresen. 2015. Foraging range movements of the endangered Hawaiian hoary bat, *Lasiurus cinereus semotus*. *J. of Mammology*, 96: 64-71.
- Chesser, R. T., S. M. Billerman, K. J. Burns, C. Cicero, J. L. Dunn, B.E. Hernández-Baños, R. A. Jiménez, O. Johnson, A. W. Kratter, N. A. Mason, P. C. Rasmussen 2024. *Check-list of North American Birds*. American Ornithological Society. Available online at URL: <http://checklist.aou.org/taxa>
- Chesser, R. T., S. M. Billerman, K. J. Burns, C. Cicero, J. L. Dunn, B.E. Hernández-Baños, R. A. Jiménez, O. Johnson, N. A. Mason, P. C. Rasmussen. 2025. Sixty-sixth Supplement to the American Ornithological Society’s *Check-list of North American Birds*. *Ornithology*, Volume 142, 1-18.
- Clark, J. R. K. 2002. *Hawai’i Place Names: Shores, Beaches, and Surf Sites*. University of Hawai’i Press, Honolulu. 412 pp.
- Day, R. H., B. Cooper, and T. C. Telfer. 2003. Decline of Townsend’s (Newell’s Shearwaters (*Puffinus auricularis newelli*) on Kauai, Hawaii. *The Auk*, 120: 669-679.
- Frazier, A. G., and Giambelluca, T. W. 2017. Spatial trend analysis of Hawaiian rainfall from 1920 to 2012. *International Journal of Climatology*, 37(5): 2522-2531. Available online at URL: <https://www.hawaii.edu/climate-data-portal/rainfall-atlas/>; last retrieved October 22, 2025.
- Hawai’i Department of Land and Natural Resources-Division of Forestry and Wildlife (HDLNR-DOFAW). 2016. Wildlife Lighting. Available online at URL: <http://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf>; last accessed on October 23, 2025.

- Imada, C. T., K. Faccenda, M. K. Thomas, T. Gallaher, H. Oppenheimer, B. Kennedy, and K. Arthur. 2025. Hawaiian Native & Naturalized Vascular Plants Checklist (2025 update). Bishop Museum Technical Report: 75: 484 pp.
- National Oceanographic and Atmospheric Administration–National Centers for Environmental Information (NOAA–NCEI). 2025. Data Tools: 1991-2020 Normals. Available online at URL: <https://www.ncei.noaa.gov/access/us-climate-normals/>; last accessed October 22, 2025.
- Patou, M-L., Mclenachan, P. A., Morley, C. G., Couloux, A., Jennings, A. P., and G. Veron. 2009. Molecular phylogeny of the Herpestidae (Mammalia, Carnivora) with a special emphasis on the Asian *Herpestes*. *Molecular Phylogenetics and Evolution*. Volume 53 (2009) 69-80.
- Pinzari, C., L. Kang, P. Michalak, L. S. Jermin, D. K. Price, and F. J. Bonaccorso. 2020. Analysis of the Genomic Sequence Data Reveals the Origin and Evolutionary Separation of Hawaiian Hoary Bat Populations. *Genome Biology and Evolution*, 12(9): 1504-1514.
- Podolsky, R., D. G. Ainley, G. Spencer, L. de Forest, and N. Nur. 1998. Mortality of Newell’s Shearwaters Caused by Collisions with Urban Structures on Kaua’i. *Colonial Waterbirds*, 21: 20-34.
- Staples, G. W. and D. R. Herbst. 2005. *A Tropical Garden Flora. Plants Cultivated in the Hawaiian Islands and other Tropical Places*. Bishop Museum, Honolulu. 908 pp.
- The Limtiaco Consulting Group (LTCG). 2016. Final Environmental Assessment for the Mālaekahana State Recreation Area - Kahuku Section Park Improvements, Lā’ie, O‘ahu, Hawai‘i. Prep. for the State of Hawai‘i Department of Land and Natural Resources, Division of State Parks. 314 pp.
- U.S. Fish & Wildlife Service (USFWS). 1983. Hawaiian Dark-Rumped Petrel & Newell’s Manx Shearwater Recovery Plan. USFWS, Portland, Oregon. February 1983.
- U.S. Fish and Wildlife Service (USFWS). 2016. Endangered and threatened wildlife and plants; endangered status for 49 species from the Hawaiian Islands. *Federal Register*, 81. (No. 190; Friday, September 30, 2016): 67786 - 67860. Available at URL: https://www.fws.gov/sites/default/files/federal_register_document/2016-23112.pdf; last retrieved October 31, 2025.

- U.S. Fish and Wildlife Service (USFWS). 2023. Endangered and threatened wildlife and plants; designation of critical habitat for green sea turtle; proposed rule. *Federal Register*, 88 (137; Wednesday, July 19, 2023): 46376-46568. Available online at URL: <https://www.govinfo.gov/content/pkg/FR-2023-07-19/pdf/2023-14225.pdf>; last accessed October 21, 2025.
- U.S. Fish and Wildlife Service (USFWS). No date (n.d.-a). Critical Habitat for Threatened & Endangered Species. Available online at URL: <https://ecos.fws.gov/ecp/report/critical-habitat>; last accessed October 21, 2025.
- U.S. Fish & Wildlife Service-Pacific Islands Fish and Wildlife Office (USFWS-PIFWO). 2023. FINAL Avoidance and Minimization Measures (AMMs). Available online at URL: <https://www.fws.gov/media/animal-avoidance-and-minimization-measures-may-2023-0>; last accessed on October 23, 2025.
- Wagner, W. L., Herbst, D. R., and S. H. Sohmer. 1990. *Manual of the Flowering Plants of Hawai‘i: Volume I and II*. Bishop Museum Special Publication 83. University of Hawai‘i Press. 1853 pp.
- Wagner, W. L. and D. R. Herbst. 1999. *Supplement to the Manual of the flowering plants of Hawai‘i*, pp. 1855-1918. In: Wagner, W. L., D. R. Herbst, and S. H. Sohmer, *Manual of the flowering plants of Hawai‘i*. Revised edition. 2 vols. University of Hawaii Press and B.P. Bishop Museum.
- Wilson, D. E. and D. M. Reeder (Editors). 2005. *Wilson & Reeder’s Mammal Species of the World (Third Edition)*. Available online at URL: <https://www.departments.bucknell.edu/biology/resources/msw3/>; last accessed on October 22, 2025.
- Young, L. C., E. A. VanderWerf, M. McKown, P. Roberts, J. Schlueter, A. Vorsino, and D. Sischo. 2019. Evidence of Newell’s Shearwaters and Hawaiian Petrels on Oahu, Hawaii. *The Condor: Ornithological Applications*, 121(1): 1-7.

Appendix B

Individual Wastewater System (IWS) Assessment Report

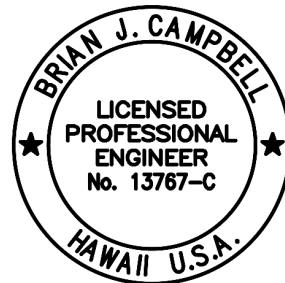
INDIVIDUAL WATEWATER SYSTEM (IWS)
ASSESSMENT REPORT
FOR
MALAEKAHANA STATE RECREATION AREA
COMFORT STATION AND SITE IMPROVEMENTS

MALAEKAHANA STATE PARK
56-020 KAMEHAMEHA HIGHWAY
LĀ'IE, HAWAII 96762
TMK: (1) 5-6-001:004, 005, 006, & 007

Prepared for:

ARCHITECTS PACIFIC, INC.
938C KAPAHULU AVENUE
HONOLULU, HAWAII 96816

PREPARED BY



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

Brian Campbell

Expiration Date: 04/30/2026

November 6, 2025

TABLE OF CONTENTS

Abbreviations	2
Project Description	3
Existing Conditions	3
General	3
IWS A & B	4
IWS Design Flow	5
IWS Design Flow Criteria	5
Comfort Station A Design Flow	6
State IWS Standards	6
City Parks IWS Standards	6
Design Flow Selection	7
Comfort Station B Design Flow	7
State IWS Standards	7
City Parks IWS Standards	7
Design Flow Selection	7
IWS Treatment System	8
IWS Disposal System	9
IWS Alternatives	10
IWS Alternative 1 – Rehabilitate Existing IWS	10
IWS Alternative 2 – Install Two New IWS Located at Each Comfort Station	12
IWS Alternative 3 – Install One New Centralized IWS Located at the Northeast Corner of Grass Field	14
Conclusion & Recommendations	16
References	16
Appendix A - As-Built Excerpts	17
Appendix A.1 - IWS A & B As-Built Excerpts	18
Appendix A.2 - Comfort Station A & B As-Built Excerpts	26
Appendix B - State IWS Standards Excerpts	29
Appendix C - City Parks IWS Standards Excerpts	32

ABBREVIATIONS

BGS	Below Ground Surface	GPM	Gallons per Minute
BLDG	Building	IN	Inch
CCH	City & County of Honolulu	IWS	Individual Wastewater System
DLNR	Department of Land and Natural Resources	MIN/IN	Minutes per Inch
DOH	Department of Health	SMA	Storm Management Area
DPR	Department of Parks & Recreation	UIC	Underground Injection Control
FT	Feet	WWB	Wastewater Branch
GPD	Gallons per Day		

PROJECT DESCRIPTION

The project site is located within Malaekahana State Park, Lā'ie, Hawai'i (TMK 5-6-001:004, 005, 006, & 007) within the Kalanai section, consisting of campgrounds and a large parking area. The project generally consists of the demolition and replacement of two (2) existing Comfort Stations: A and B, which include improvements to their respective existing individual wastewater systems (IWS). Refer to Table 1 for a summary of the pertinent parcel information as obtained from the City GIS Website.

TABLE 1 – Parcel Information	
Tax Map Key	(1) 5-6-001:004 - 007
Address	Malaekahana State Park – Kalanai Section; 56-119 Kamehameha Highway, Lā'ie, Hawai'i 96762
Land Owner	State of Hawai'i
Area	Total Park Area: 73.3 acres, Wastewater Facilities Area: 8 acres
Flood Zone	X, AE (100-year flood, and outside 500-year flood level)
SMA	Within SMA
UIC Line	Makai of UIC Line
State Land Use	Urban
Zoning	P-2 General Preservation

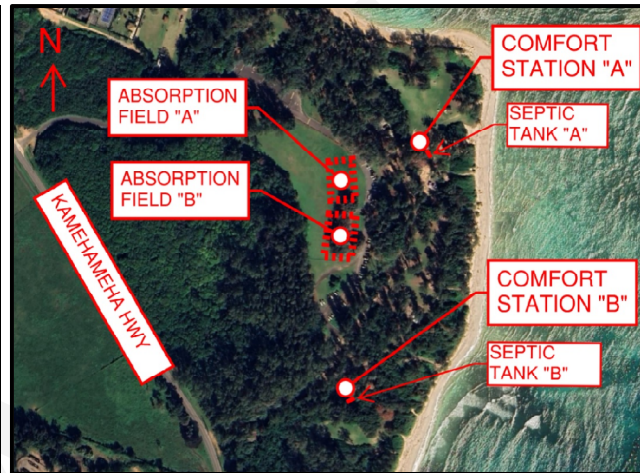


FIGURE 1 - Project Location Map

The intent of this assessment is to verify whether the existing IWS facilities are functioning adequately and can accommodate the wastewater flows from the proposed improvements (i.e. additional fixtures, increase in campers, etc.) to comply with current standards (i.e. distance to groundwater, distribution boxes, sizing criteria, etc.). This report also analyzes IWS alternatives and recommends one alternative for use in the Environmental Assessment for the project. The information presented in this report is based on available record data (e.g. as-builts, prior reports, online information, etc.) and remains contingent upon further design and analysis (e.g. topographic survey, geotechnical investigation, percolation testing, depth to groundwater, etc.).

EXISTING CONDITIONS

General

The existing site is bordered by Kamehameha Highway to the west and the Pacific Ocean to the East. There are no subsurface stormwater utilities in the area, all wastewater is treated and disposed of on-site (see IWS A & B Section below for more information), and electrical power for the site is provided by Hawaiian Electric Company (HECO) via overhead utility lines along Kamehameha Highway. Portable water for the site is supplied by the City and County of Honolulu (CCH) Board of Water Supply (BWS) through existing municipal water lines along Kamehameha Highway. The nearest public sanitary sewer system and wastewater treatment plant is located within the census-designated place of Lā'ie which is approximately 1.5-miles south from the project site.

Existing vegetation consists of open grassed areas, dense trees surrounding the comfort stations, and coastal beach sand dunes near the ocean shore. The site is relatively flat with elevations ranging from 5-ft to 10-ft above mean sea level (MSL). Per the USGS Web Soil Survey, soils throughout the site primarily consist of Beaches and Jaucas Sand (high permeability, 6.0 to 19.98 in/hr) and Lahaina Silty Clay (moderate permeability, 0.2 to 1.98 in/hr). Based on past project experience, seasonal high groundwater elevation is estimated to be approximately 1-ft MSL, which is typical of low-lying coastal areas with tidal influence.

IWS A & B

Existing IWS A & B were constructed in 1990 and serve Comfort Station A (See Photo 1) and Comfort Station B (See Photo 2), respectively. Each comfort station is equipped with 5 toilets, 1 urinal, 4 lavatories, 1 service sink, a pot washing station, and indoor showers (6 shower heads). It is currently unknown whether the camping remote pot washing stations discharge to either IWS, or whether they have their own disposal systems.

Both IWS's were designed identically: wastewater from the upstream plumbing fixtures first flow to a 6,692-GAL concrete septic tank located adjacent to the respective comfort station. Each septic tank is equipped with a 4-in overflow line that discharges to three seepage pits (8-ft diameter by 8-ft deep). The subsurface disposal systems are located inland within a grass field (See Photo 3 and 4) and consist of two 90-ft by 90-ft absorption beds (a primary and a backup).



Photo 1 – Comfort Station A (Facing Southeast)



Photo 2 – Comfort Station B (Facing Southwest)



Photo 3 – Existing Leach Field Location (Facing East)



Photo 4 – Existing Leach Field Location (Facing West)

The absorption beds were constructed with perforated pipe invert elevations at approximately 3-ft MSL with bottom of the gravel layer around 2-ft MSL. For both systems, the 4-in gravity flow sewerlines connecting the septic tank to the leach fields have a very shallow slope of approximately 0.3%. *Refer to Appendix A – IWS As-Built Excerpts.*

Per the State of Hawaii Department of Land and Natural Resources (DLNR) Division of State Parks, the existing IWS facilities require frequent pumping – monthly during the high-use summer season (June–September) and approximately every two months during the remainder of the year (October–May) (per email received from the Parks Program Manager (Eric Kato) on 09/22/2025). The frequency of pumping suggests the systems are operating near or beyond their hydraulic capacity. Potential contributing factors include limited septic tank volume, root intrusion, or partial blockage within the sewer or leach field piping/gravel. Additionally, caretakers have reported that backups and overflows occasionally occur during cleaning activities, indicating the systems are unable to accommodate peak flows.

IWS DESIGN FLOW

The calculations for this report are in conformance with the State of Hawaii's "Hawaii Administrative Rules, Title 11 Department of Health, Chapter 62 Wastewater Systems" (dated March 21, 2016) hereinafter referred to as *State IWS Standards* and the CCH "Individual Wastewater System Design Standards for The City & County of Honolulu Parks" (dated Sept. 2005), hereinafter referred to as the *City Parks IWS Standards*.

It should be noted that there are unofficial CCH DPR accepted revisions to the City Park IWS Standards as follows:

1. In lieu of 1 flush per fixture every 5 minutes over a 12-hour period, it is acceptable to use:
 - a. 1 flush per fixture every 5 minutes over a 6-hour peak period, plus
 - b. 1 flush per fixture every 15 minutes over a 6-hour non-peak period
2. For fixtures used by workers only, it is acceptable to use 1 flush per worker every 30 minutes over an 8-hour period.

The *City Parks IWS Standards* defines a "fixture" as a toilet or urinal, inclusive of associated lavatory use.

The Department of Health (DOH) Wastewater Branch (WWB) will only review permit applications for conformance with *State IWS Standards*, and they do not reference or require an IWS to comply with the *City Parks IWS Standards*. The *City Parks IWS Standards* are included within this report for comparative purposes since they are regarded as being more accurate.

IWS Design Flow Criteria

The following design criteria were used in accordance with *State IWS Standards* Appendix D, Table I and the *City Parks IWS Standards*.

Population and Use Assumptions (provided by DLNR)

- Comfort Station A
 - Overnight Campers: 270 people
 - Day Visitors: 80 people
 - Total Day Visitors Including Campers: 350 people

- Comfort Station B
 - Overnight Campers: 200 people (100 current + 100 proposed group camping)
 - Day visitors: 50 people
 - Total Day Visitors Including Campers: 250 people

Unit Flow Criteria

- Overnight campers: 32-gallon per capita per day (gpcd) is inclusive of restroom use, showering, and pot-washing
- Day visitors: 5-gpcd is for base sanitary use only (no showering or pot-washing)
- Outdoor shower use by day visitors: 30% of day visitors are assumed to shower with an estimated 10-gallon per shower, based on the *U.S. Environmental Protection Agency, Onsite Wastewater Treatment Systems Manual* (dated February 2002) Table 3-3, which lists typical residential shower usage at approximately 11.5-GAL per person per day. The lower value (10-GAL per shower) was used in this case to reflect reduced water use when camping, and assuming low flow fixtures with timer valves will be utilized.

Comfort Station A Design Flow

State IWS Standards

The proposed wastewater flow rates based on capita per day (provided by DLNR), and per wastewater unit flow rates from *State IWS Standards, Appendix D, Table I*, are summarized as follows:

Comfort Station A:	
270 campers per night at 32 gpcd for 1/3 of day	= 2,880 GPD
350 people per day at 5 gpcd for 2/3 of day	= 1,167 GPD
30% of 80 day-visitors shower/day at 10 gal/use	= <u>240 GPD</u>
TOTAL:	= 4,287 GPD

City Parks IWS Standards

The number of proposed fixtures is estimated to be 10 (5 women's toilets, 3 men's toilets, 2 urinals, inclusive of lavatories) along with a few showers. The following calculations summarize the proposed wastewater flows per the *City Parks IWS Standards*:

Comfort Station A (day-use):	
10 fixtures x (3.5 gal/fixture/use) x ((1 use/5 min)(60 min/hr)(6 hr/use/day))	= 2,520 GPD (peak)
10 fixtures x (3.5 gal/fixture/use) x ((1 use/15 min)(60 min/hr)(6 hr/use/day))	= 840 GPD (non-peak)
30% of 80 day-visitors shower/day at 10 gal/use	= 240 GPD
Comfort Station A (night camper-use):	
270 campers per night at 32 gal/cap/day for 1/3 of day	= <u>2,880 GPD</u>
TOTAL:	= 6,480 GPD

Design Flow Selection

Based on the above analysis, the estimated wastewater flow for Comfort Station A is 4,287-GPD per the *State IWS Standards* and 6,480-GPD per the *City Parks IWS Standards*. To account for potential variations in usage and number of visitors/campers, the higher calculated rounded flow rate of 6,500-GPD will be used as the design basis for sizing treatment and disposal components for Comfort Station A.

Comfort Station B Design Flow

State IWS Standards

The proposed wastewater flow rates based on capita per day (provided by DLNR), and per wastewater unit flow rates from *State IWS Standards, Appendix D, Table I*, are summarized as follows:

Comfort Station B:	
200 campers per night at 32 gpcd for 1/3 of day	= 2,133 GPD
250 people per day at 5 gpcd for 2/3 of day	= 833 GPD
30% of 50 day-visitors shower/day at 10 gal/use	= 150 GPD
TOTAL:	= 3,116 GPD

City Parks IWS Standards

The number of proposed fixtures is estimated to be 10 (5 women's toilets, 3 men's toilets, 2 urinals, inclusive of lavatories) along with a few showers. The following calculations summarize the proposed wastewater flows per the *City Parks IWS Standards*:

Comfort Station B (day-use):	
10 fixtures x (3.5 gal/fixture/use) x ((1 use/5 min)(60 min/hr)(6 hr/use/day))	= 2,520 GPD (peak)
10 fixtures x (3.5 gal/fixture/use) x ((1 use/15 min)(60 min/hr)(6 hr/use/day))	= 840 GPD (non-peak)
30% of 50 day-visitors shower/day at 10 gal/use	= 150 GPD
Comfort Station B (night camper-use):	
200 campers per night at 32 gal/cap/day for 1/3 of day	= 2,133 GPD
TOTAL:	= 5,643 GPD

Design Flow Selection

Based on the above analysis, the estimated wastewater flow for Comfort Station B is 3,116-GPD per the *State IWS Standards* and 5,643-GPD per the *City Parks IWS Standards*. To account for potential variations in usage and number of visitors/campers, the higher calculated rounded flow rate of 5,700-GPD will be used as the design basis for sizing treatment and disposal components for Comfort Station B.

IWS TREATMENT SYSTEM

Per DLNR scoping documents, “if the existing IWS is required to be upgraded due to the new/future designs, DLNR prefers a higher level of treatment (aerobic) than just the basic septic system/leach field”. As such, the following sections will assume that an Aerobic Treatment Units (ATU) will be used for all proposed IWS alternatives.

An ATU will provide secondary biological treatment through aeration and enhanced microbial activity which will produce high quality effluent suitable for discharge into the groundwater if necessary. A traditional septic tank system may still be feasible if desired due to budget, but only if the bottom of the disposal system can remain 3-ft or higher above the seasonal high ground water level (which would require additional design and site investigation), otherwise DOH WWB would require an ATU.

It is typically necessary to provide a preloader tank upstream of the ATU to remove larger solids and oils/greases from the wastewater effluent prior to entering the ATU. The following calculations determine the required size of the preloader tanks which is based on average daily flow (ADF) and the *State IWS Standards* equation for septic tank sizing (Min. Tank Sizing = $1,000 + (Q-800) \times 1.25$, where Q = Design Flow):

Comfort Station A

- $ADF = \text{Design Flow} / 2.5 = 6,500 \text{ GPD} / 2.5 = 2,600 \text{ GPD}$
- $\text{Min. Preloader Tank Volume} = 1,000 + (2,600 - 800) \times 1.25 = 3,250\text{-GAL}$

Comfort Station B

- $ADF = \text{Design Flow} / 2.5 = 5,700 \text{ GPD} / 2.5 = 2,280 \text{ GPD}$
- $\text{Min. Preloader Tank Volume} = 1,000 + (2,280 - 800) \times 1.25 = 2,280\text{-GAL}$

Combined Comfort Station A & B

- $ADF = \text{Design Flow} / 2.5 = 12,200 \text{ GPD} / 2.5 = 4,880 \text{ GPD}$
- $\text{Min. Preloader Tank Volume} = 1,000 + (4,880 - 800) \times 1.25 = 6,100\text{-GAL}$

The ATU is generally sized by the manufacturer based on the design flow rates, anticipated wastewater characteristics, and their laboratory testing results. For the purpose of this report it is assumed that the above *State IWS Standards* equation for septic tank sizing will provide approximate ATU tank sizes for use during the conceptual phase, which are calculated as follows:

Comfort Station A

- Design Flow = 6,500 GPD
- $\text{Min. ATU Tank Volume} = 1,000 + (6,500 - 800) \times 1.25 = 8,125\text{-GAL}$

Comfort Station B

- Design Flow = 5,700 GPD
- $\text{Min. ATU Tank Volume} = 1,000 + (5,700 - 800) \times 1.25 = 7,125\text{-GAL}$

Combined Comfort Station A & B

- Design Flow = 12,200 GPD
- Min. ATU Tank Volume = $1,000 + (12,200 - 800) \times 1.25 = 15,250$ -GAL

The *City Parks IWS standards* recommends a minimum of two equally sized treatment units in parallel for redundancy. Multiple smaller tanks may be necessary to reduce tank depth due to groundwater and topographical restraints. Unlike the traditional septic tank system, an ATU also requires electrical and mechanical components for the pumping and aeration systems which will need to be located on concrete pads (above the base flood elevation if applicable) and provided with lockable access enclosures for maintenance, inspection, and security purposes.

IWS DISPOSAL SYSTEM

The required size of the wastewater effluent disposal system is primarily based on the underlying soil percolation rate. However, percolation testing at the site has yet to be performed, and there are no records from previous projects to use as a basis for design. As such, a percolation rate of 6 min/in will be used based on other nearby projects and the USGS Web Soil Survey, which results in a required absorption area of 133-SF per 200-GPD per the *State IWS Standards, Table III*. If plastic arch chambers are used in lieu of traditional perforated pipe, then DOH WWB allows for a 17% reduction in required disposal field area.

Comfort Station A

- Design Flow = 6,500 GPD
- Min. Absorption Area = $133\text{-SF}/200\text{-GPD} \times 6,500\text{ GPD} = 4,323\text{-SF}$ (perforated pipe)
- Min. Absorption Area = $4,323\text{-SF} - (4,323\text{-SF} \times 17\%) = 3,588\text{-SF}$ (plastic arch chambers)

Comfort Station B

- Design Flow = 5,700 GPD
- Min. Absorption Area = $133\text{-SF}/200\text{-GPD} \times 5,700\text{ GPD} = 3,791\text{-SF}$ (perforated pipe)
- Min. Absorption Area = $3,791\text{-SF} - (3,791\text{-SF} \times 17\%) = 3,146\text{-SF}$ (plastic arch chambers)

Combined Comfort Station A & B

- Design Flow = 12,200 GPD
- Min. Absorption Area = $133\text{-SF}/200\text{-GPD} \times 12,200\text{ GPD} = 8,113\text{-SF}$ (perforated pipe)
- Min. Absorption Area = $8,113\text{-SF} - (8,113\text{-SF} \times 17\%) = 6,733\text{-SF}$ (plastic arch chambers)

As mentioned in the previous section, it is generally required for the bottom of the disposal system to remain 3-ft or higher above the seasonal high ground water level (which would require additional design and site investigation to determine). This may be possible if the disposal system is located near the comfort stations where the existing terrain is at a higher elevation ranging from 10-ft MSL to 15-ft MSL. However, the grass field to the northwest is much lower at around elevation 5-ft MSL to 6-ft MSL, which would likely require a raised mound disposal system to achieve the 3-ft separation to the groundwater elevation.

IWS ALTERNATIVES

The following three IWS alternatives will be evaluated in the following sections:

1. Rehabilitate Existing IWS
2. Install Two New IWS Located at Each Comfort Station
3. Install One New Centralized IWS Located at Northeast Corner of Grass Field

IWS Alternative 1 – Rehabilitate Existing IWS

This alternative would require additional extensive investigation to determine which components of the existing IWS are inadequate and require rehabilitation to restore capacity. Furthermore, DOH WWB may determine that the project requires upgrading of the IWS to current standards, which would likely not be possible due to the bottom of the absorption beds likely being located within 3-ft of the seasonal high ground water level. This would require upgrading the treatment system to an ATU.

In addition to these issues, other existing system components may also be insufficient for projected future demands, therefore would not allow for the proposed additional 100-person group camping area. The existing septic tanks are undersized for the anticipated increase in campers and visitors, resulting in inadequate retention time and reduced treatment performance, therefore they would likely need to be replaced. Most of the existing sewer piping is also not up to current standards because they lack adequate slope (0.3%), leading to insufficient gravity flow and increased risk of blockages or backups; in such cases, installation of a pump station and associated electrical utilities at each comfort station may be necessary to achieve proper conveyance to the treatment system. All together, these deficiencies suggest that substantial system upgrades would be required to support the proposed increase in usage.

Opinion:

Alternative 1 is not a viable solution given the extent of deficiencies, required component replacements, and the likelihood of mandatory system upgrades. The scale of reconstruction needed would be comparable to installing a completely new system, offering little practical or economic benefit.

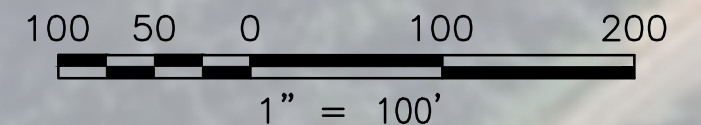
See Figure 2: Alternative 1 – Existing IWS Site Plan.



LEGEND:

----- SEWERLINE

GRAPHIC SCALE:



**FIGURE 2:
EXISTING IWS SITE PLAN**

SCALE: 1" = 100'

IWS Alternative 2 – Install Two New IWS Located at Each Comfort Station

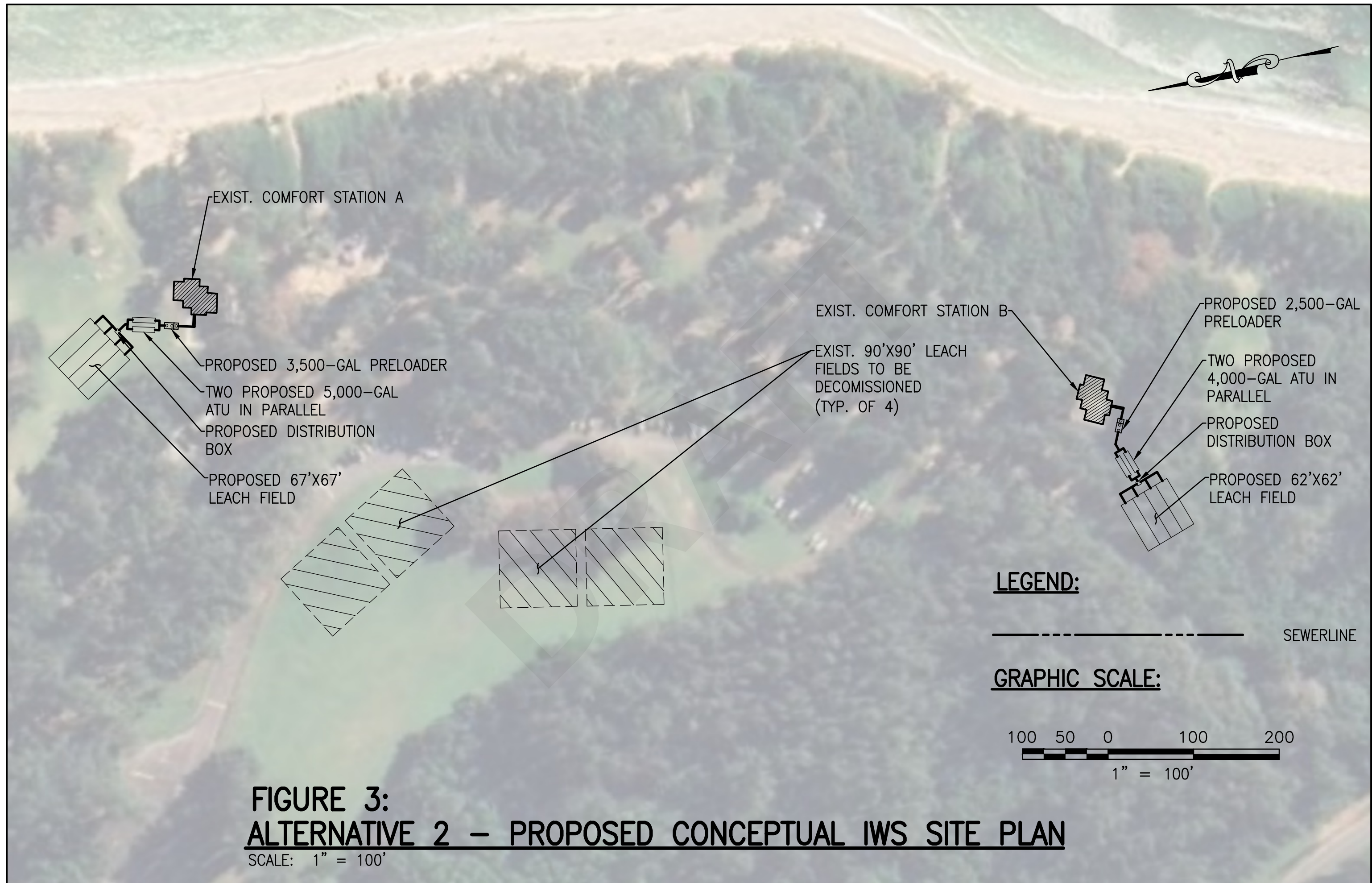
Alternative 2 would involve constructing two separate new IWS units adjacent to each comfort station, each with its own preloader, ATU, and absorption bed. Because the systems would be fully replaced, all components would be designed in compliance with the *State IWS Standards* and to accommodate the increased flows associated with the proposed 100-person group camping area. The higher ground elevations surrounding both comfort stations may provide sufficient vertical separation from the seasonal high groundwater table, potentially eliminating the need for pump stations and allowing the systems to function by gravity (which would require additional design and site investigation to determine).

The primary challenges associated with this option relate to site constraints. This alternative would require additional investigation to confirm whether suitable locations exist that meet *State IWS Standards* siting and separation requirements. Due to the proximity to the shoreline, the areas adjacent to both comfort stations likely contain archaeological and cultural resources. Therefore, the installation of new absorption beds, ATU, and associated piping could have direct impacts on these sensitive areas. Additionally, the proposed construction footprint is densely vegetated, and installation of two new IWS units would likely require removal of mature trees, resulting in further environmental and permitting concerns. Avoiding or mitigating such impacts may significantly restrict design flexibility or render the option infeasible.

Opinion:

While the proximity of the proposed systems to the comfort stations reduces conveyance requirements and may simplify operations, the potential archaeological impacts and tree removal requirements represent substantial obstacles. These constraints would need to be thoroughly evaluated during preliminary design to determine whether two new IWS systems adjacent to the comfort stations can be implemented without unacceptable cultural, environmental, and cost impacts.

See Figure 3: Alternative 2 - Proposed Concept IWS Site Plan.



**FIGURE 3:
ALTERNATIVE 2 – PROPOSED CONCEPTUAL IWS SITE PLAN**

SCALE: 1" = 100'

IWS Alternative 3 – Install One New Centralized IWS Located at the Northeast Corner of Grass Field

Alternative 3 would involve constructing one new centralized IWS at the northeast corner of the grass field that is located mauka of the driveway and parking lot area. The IWS would consist of multiple ATU's in parallel which would discharge to a downstream disposal system. The ATU's and disposal system would likely need to be raised above the existing grade by a few feet in order to obtain 3-ft clearance to seasonal high groundwater for the disposal system, and avoid buoyancy and constructability issues related for the ATU's being installed below the groundwater elevation. The treatment system would be enclosed with protective fencing in order to provide protection for electrical and mechanical equipment (including control panels and blowers).

Due to the topography and limited elevation difference between the comfort stations and the proposed IWS location, wastewater pump stations (WWPS) would be required at each comfort station. This would provide the added benefit of allowing the conveyance force main piping to be installed at minimum cover with flexible alignment to minimize environmental and cultural impacts. A preloader tank would be installed adjacent to each comfort station upstream of each WWPS to remove larger solids and oils/greases from the wastewater effluent prior to conveyance to the IWS.

This alternative offers a large, relatively unconstrained construction area with minimal impacts to mature trees and avoids with higher potential for cultural or archaeological resources (due to raised IWS and reduce conveyance piping trenching depths). By consolidating treatment and disposal infrastructure in a single location, this approach enhances long-term accessibility and operational efficiency. All components of the system can be designed to meet the *State IWS Standards* and accommodate future flows, including the increased demand associated with the proposed 100-person group camping area.

However, this alternative still presents several challenges including the need for WWPS's and multiple forcemains which increases system complexity, long-term maintenance requirements, and operational cost due to required electrical power and monitoring. Additionally, the installation of forcemains from both comfort stations to the northeast field may require significant trenching through sensitive or heavily used recreational areas, potentially affecting site operations during construction.

Opinion:

Alternative 3 is a very feasible option that minimizes environmental and cultural impacts and provides a centralized system that is compliant with the *State IWS Standards*. Although it requires additional mechanical equipment and longer conveyance piping, it offers improved siting flexibility and long-term operability.

See Figure 4: Alternative 3 - Proposed Concept IWS Site Plan.

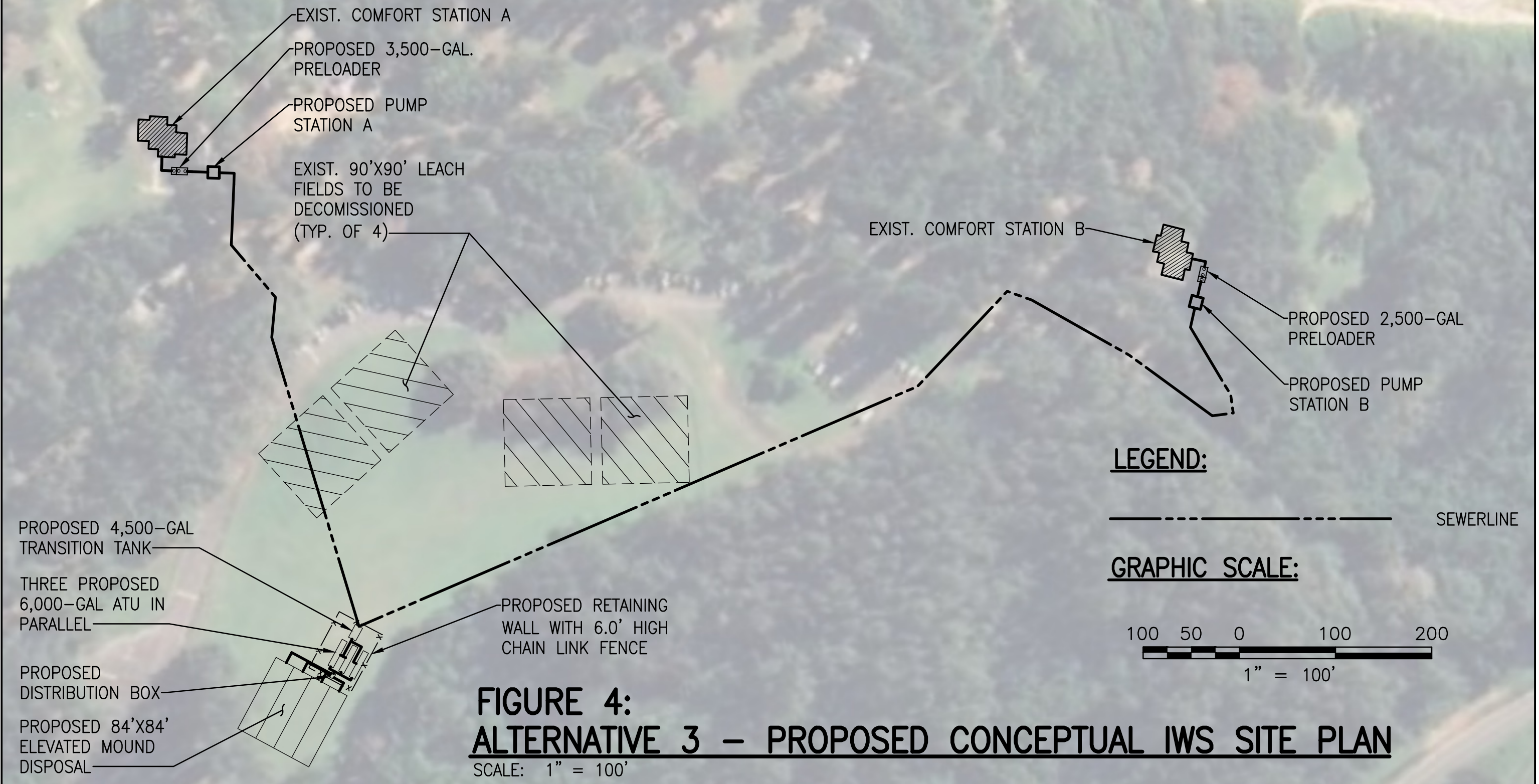


FIGURE 4:
ALTERNATIVE 3 – PROPOSED CONCEPTUAL IWS SITE PLAN
SCALE: 1" = 100'

CONCLUSION & RECOMMENDATIONS

The existing IWS's servicing Comfort Station A and B at Malaekahana State Recreation Area require frequent pumping and are inadequate to convey, treat, and dispose of wastewater under current and proposed conditions.

It is recommended that both systems be replaced by *IWS Alternative 3* which consists of constructing one new centralized IWS (consisting of ATU's and an absorption field) at the northeast corner of the grass field that is located mauka of the driveway and parking lot area. The IWS would likely need to be raised above the existing grade by a few feet due to shallow depth to groundwater. A WWPS would need to be installed at each comfort station due to elevation and topography constraints.

REFERENCES

The following standards and drawings were referenced in preparation of this Individual Wastewater System Assessment:

Standards

- Hawaii Administrative Rules, Title 11 Department of Health, Chapter 62 Wastewater Systems, March 21, 2016
- Individual Wastewater System Design Standards for The City & County Of Honolulu Parks, September 2005
- U.S. Environmental Protection Agency Onsite Wastewater Treatment System Manual, February 2002

Drawings

- Malaekahana State Recreation Area, Sewer and Water Improvements Phase 1 – INC. 2, by Engineering Concepts, January 1990
- Malaekahana State Recreation Area, Kalanai Point, Renovate Comfort Stations A & B, by Department of Land and Natural Resources, Engineering Branch, Land Division, January 2011

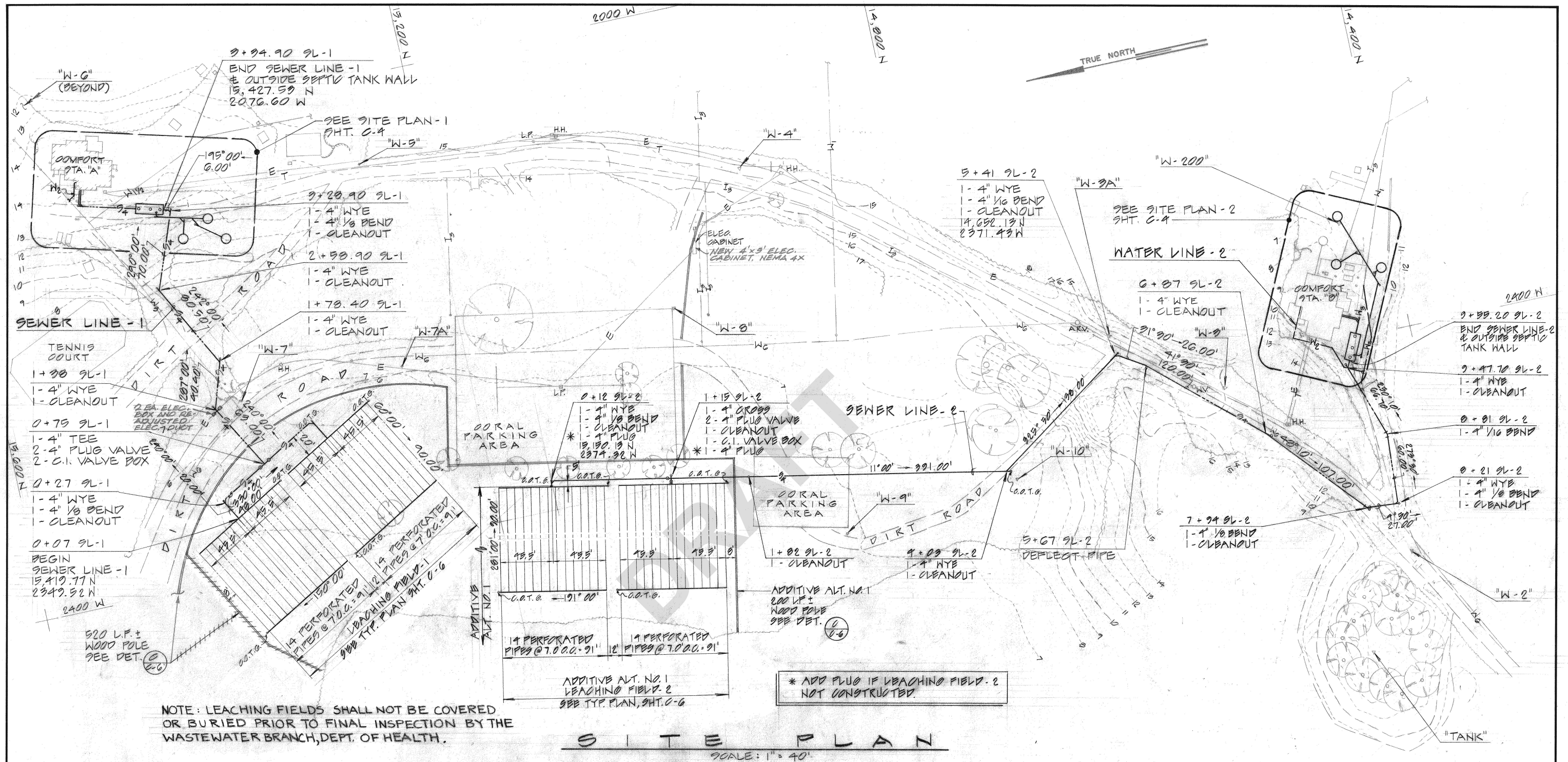
APPENDIX A

AS-BUILT EXCERPTS

DRAFT

APPENDIX A.1

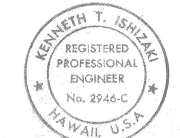
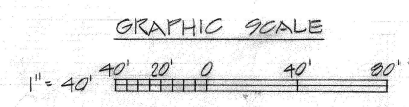
IWS A & B AS-BUILT EXCERPTS



NOTE: LEACHING FIELDS SHALL NOT BE COVERED OR BURIED PRIOR TO FINAL INSPECTION BY THE WASTEWATER BRANCH, DEPT. OF HEALTH.

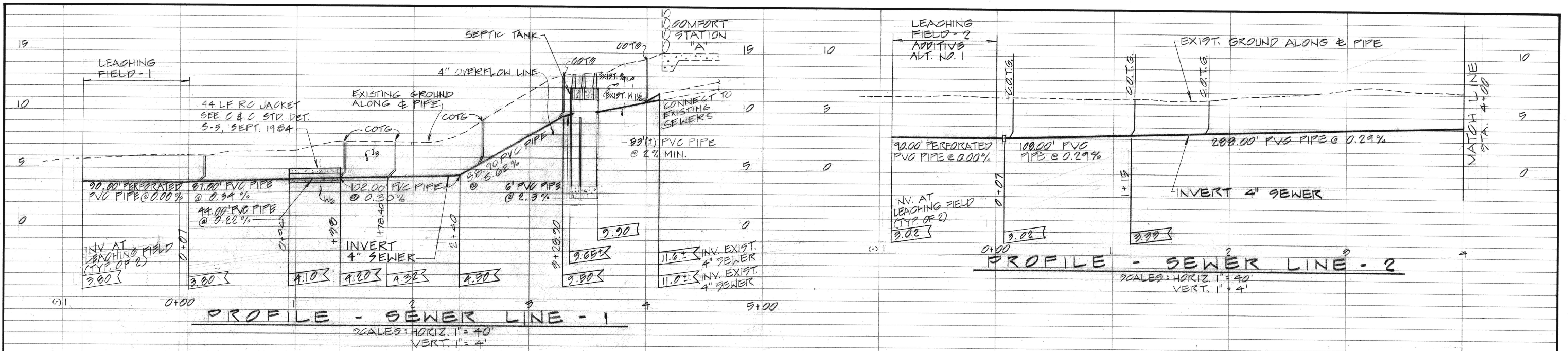
S I T E P L A N
SCALE: 1" = 40'

T R A V E R S E S T A T I O N S				T R A V E R S E S T A T I O N S							
STATION	AZIMUTH	DISTANCE	COORDINATES	ELEV.	STATION	AZIMUTH	DISTANCE	COORDINATES	ELEV.		
"W-2" (1/2" PIPE)	289° 00' 30"	→ 212.44'	14,498.87	2508.84	11.49	"W-7A" (MON. PIPE)	00° 14' 10"	230.76	15,256.92	2251.09	7.17
"W-3" (1/2" PIPE)	216° 19' 30"	→ 108.90'	14,566.69	2419.16	15.57	"W-8" (1/2" PIPE)	64° 01' 30"	245.04	15,017.96	2252.01	7.70
"W-3A" (HUB)	216° 19' 30"	→ 350.75'	14,654.49	2354.63	15.60	"W-9" (1/2" PIPE)	95° 32' 30"	159.01	14,910.06	2472.91	6.85
"W-4" (1/2" PIPE)	192° 54' 55"	→ 326.90'	14,996.98	2146.91	15.40	"W-10" (1/2" PIPE)			14,757.79	2457.76	7.24
"W-5" (1/2" PIPE)	197° 22' 05"	→ 316.98'	15,255.61	2079.84	14.11	"TANK" (1/2" PIPE)	302° 49' 20"	99.26	14,489.42	2667.21	12.89
"W-6" (1/2" PIPE)	59° 29' 40"	→ 319.12'	15,558.14	1979.22	12.08	"W-2" (1/2" PIPE)	269° 32' 40"	286.59	14,498.87	2508.84	11.49
"W-7" (MON. PIPE)	00° 14' 10"	→ 141.38'	15,397.70	2250.44	6.75	"W-200" (1/2" PIPE)			14,441.15	2302.26	7.81

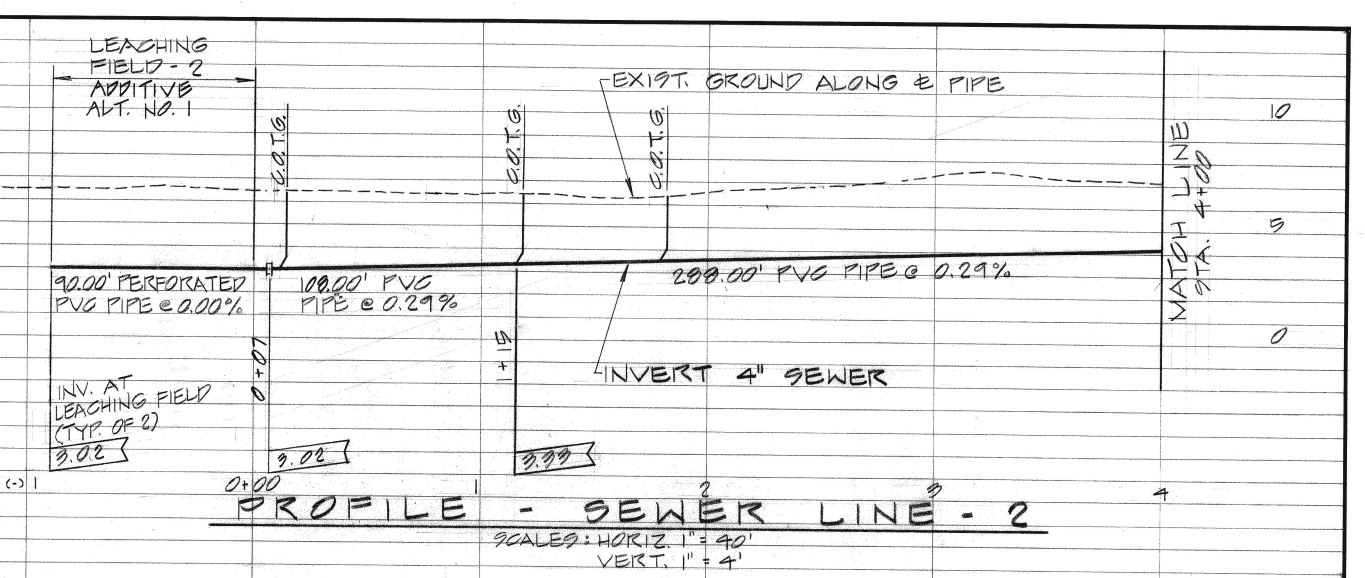


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Kenneth T. Ishizaki

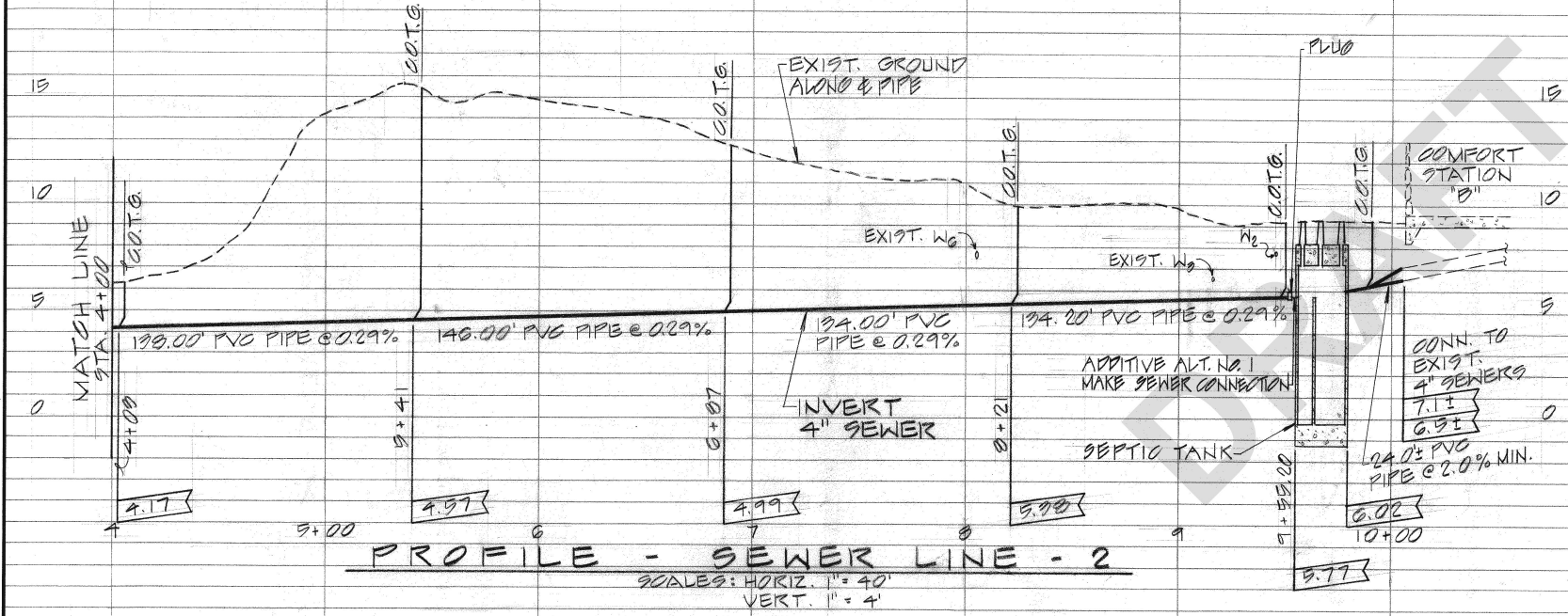
SYMBOL	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII			
DEPARTMENT OF LAND AND NATURAL RESOURCES			
DIVISION OF WATER AND LAND DEVELOPMENT			
MALAEKAHANA STATE RECREATION AREA, SEWER AND WATER IMPROVEMENTS PHASE I-INC. 2			
S I T E P L A N			
DESIGNED: M.K.K.	SUBMITTED: <i>Lucretia Chang</i>		
DRAWN: G.P.	CHIEF DESIGN & CONST. ENGINEER		
CHECKED: K.I.	DATE: 1-31-90	APPROVED: <i>[Signature]</i>	
APPROVED: <i>[Signature]</i>	MANAGER-CHIEF ENGINEER		FILE NO.
DATE: 1-31-90			



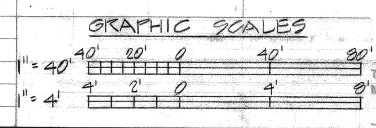
PROFILE - SEWER LINE - 1
 SCALES: HORIZ. 1" = 40'
 VERT. 1" = 4'



PROFILE - SEWER LINE - 2
 SCALES: HORIZ. 1" = 40'
 VERT. 1" = 4'



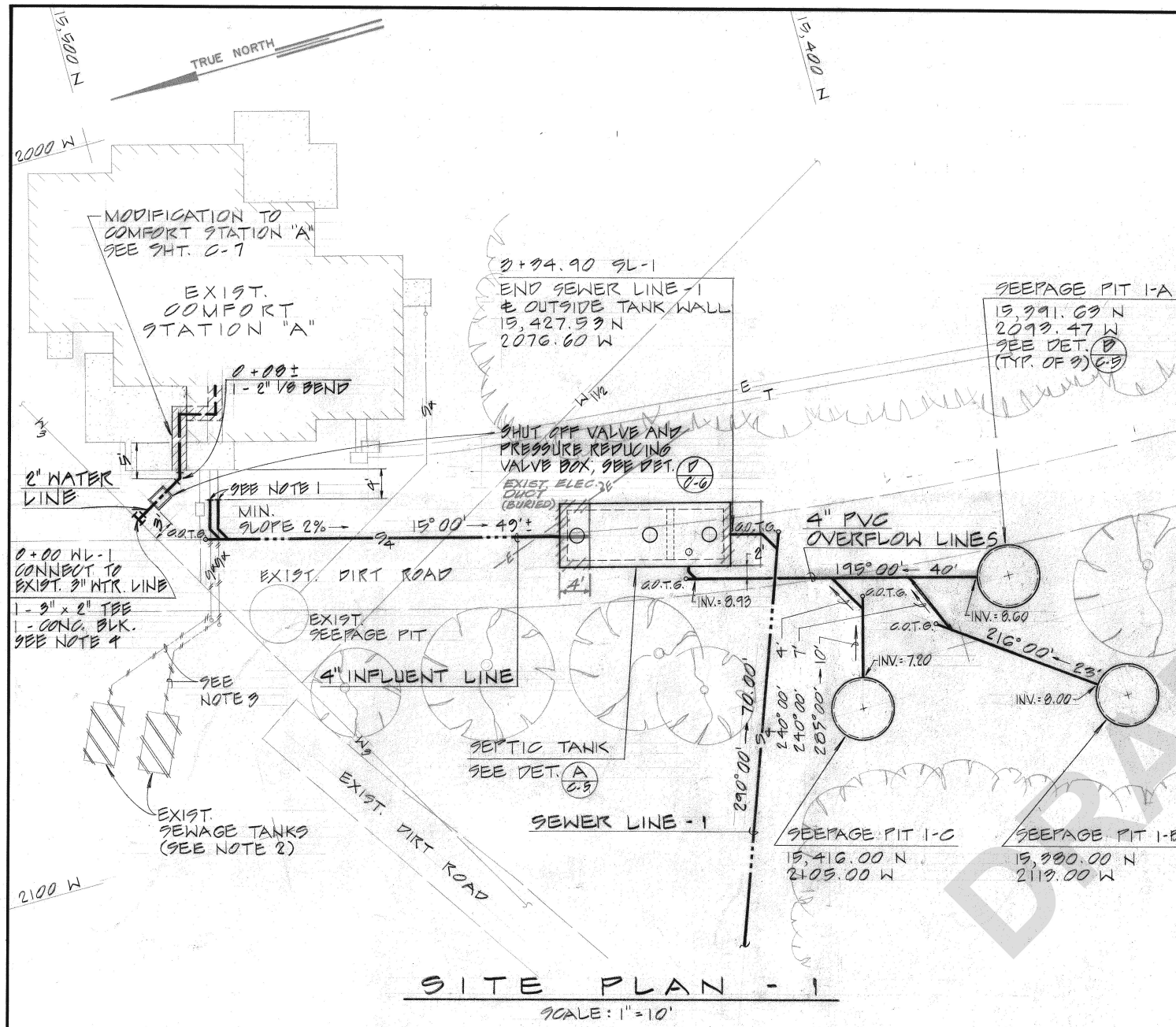
PROFILE - SEWER LINE - 2
 SCALES: HORIZ. 1" = 40'
 VERT. 1" = 4'



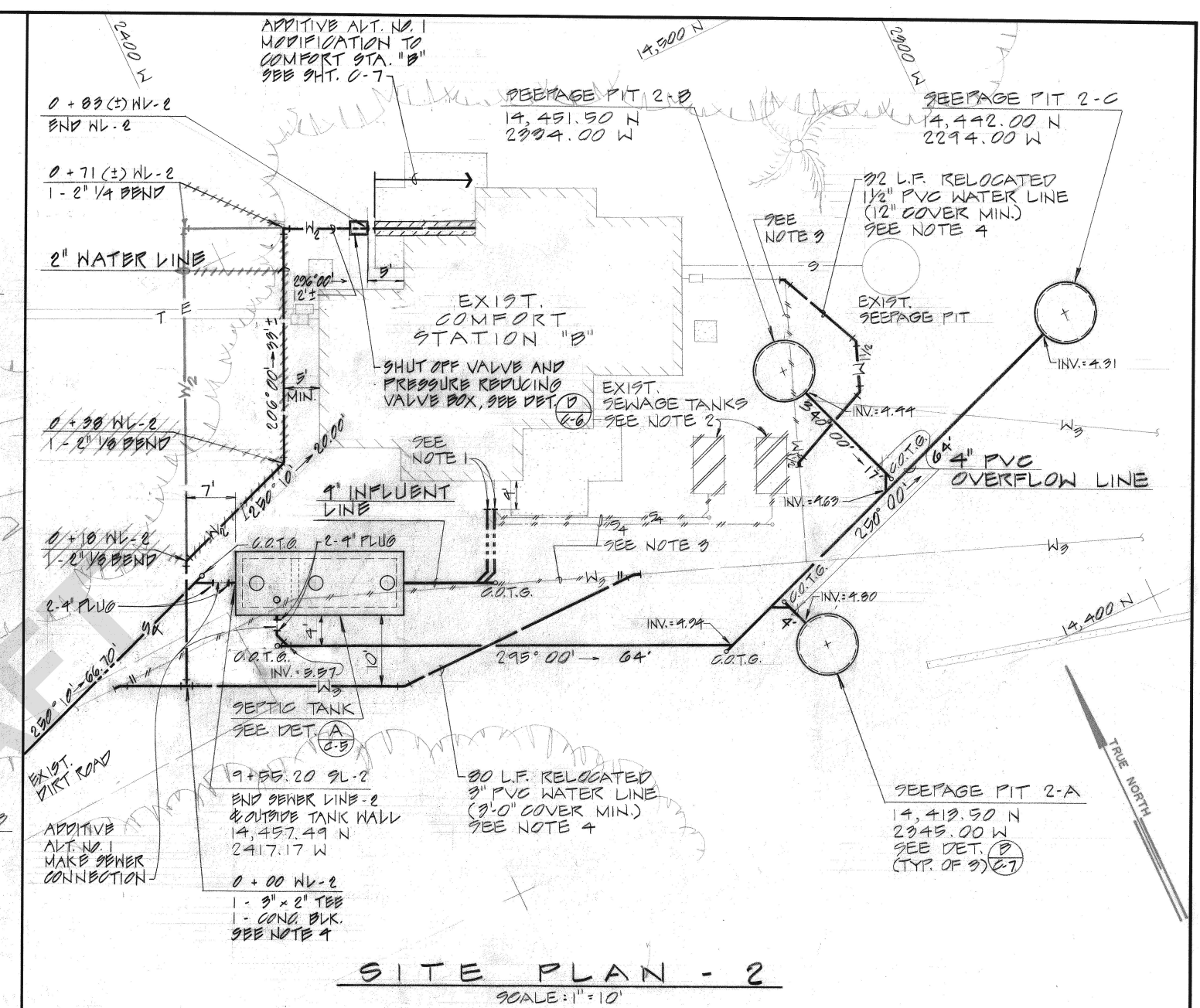
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
 Kenneth T. Ishizaki

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF WATER AND LAND DEVELOPMENT			
MALAEKAHANA STATE RECREATION AREA, SEWER AND WATER IMPROVEMENTS PHASE 1 - INC. 2			
PROFILES - SEWER & WATER LINES			
DESIGNED: M.K.K.	SUBMITTED: <i>Luigi Chang</i>		
DRAWN: C.F.A.D.	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: K.I.	DATE: 1-31-90		
APPROVED: <i>[Signature]</i>	MANAGER-CHIEF ENGINEER		FILE NO.
DATE: 1-31-90			

"AS BUILT"



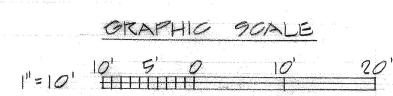
SITE PLAN - 1
SCALE: 1"=10'



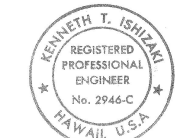
SITE PLAN - 2
SCALE: 1"=10'

NOTES:

- CONNECT TO EXISTING 4" SEWER, 4' FROM EXISTING SLAB OR WALL.
- PUMP OUT ALL CONTENTS AND FLUSH EXISTING SEWAGE TANK PRIOR TO DEMOLISHING TOP SLAB OF TANK AND WALLS, A MINIMUM OF 12 INCHES FROM EXISTING OR FINISH GRADE. CRACK BOTTOM SUFFICIENTLY TO PREVENT WATER FROM COLLECTING AND FILL WITH EXCESS EXCAVATED MATERIAL. PLACE 4" THK. TOP SOIL AND GRASS TO MATCH EXISTING. CONTRACTOR SHALL DISPOSEL OF CONTENTS OF EXISTING SEWAGE TANK IN CONFORMANCE TO THE REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. COST SHALL BE CONSIDERED INCIDENTAL.
- ABANDON EXISTING PIPE. CUT AND PLUG BOTH ENDS, AND REMOVE AS REQUIRED.
- CONNECT TO EXISTING, PROVIDE FITTINGS AND ADAPTERS AS REQUIRED, CHLORINATE PER BOARD OF WATER SUPPLY STANDARDS AND TEST LINE.

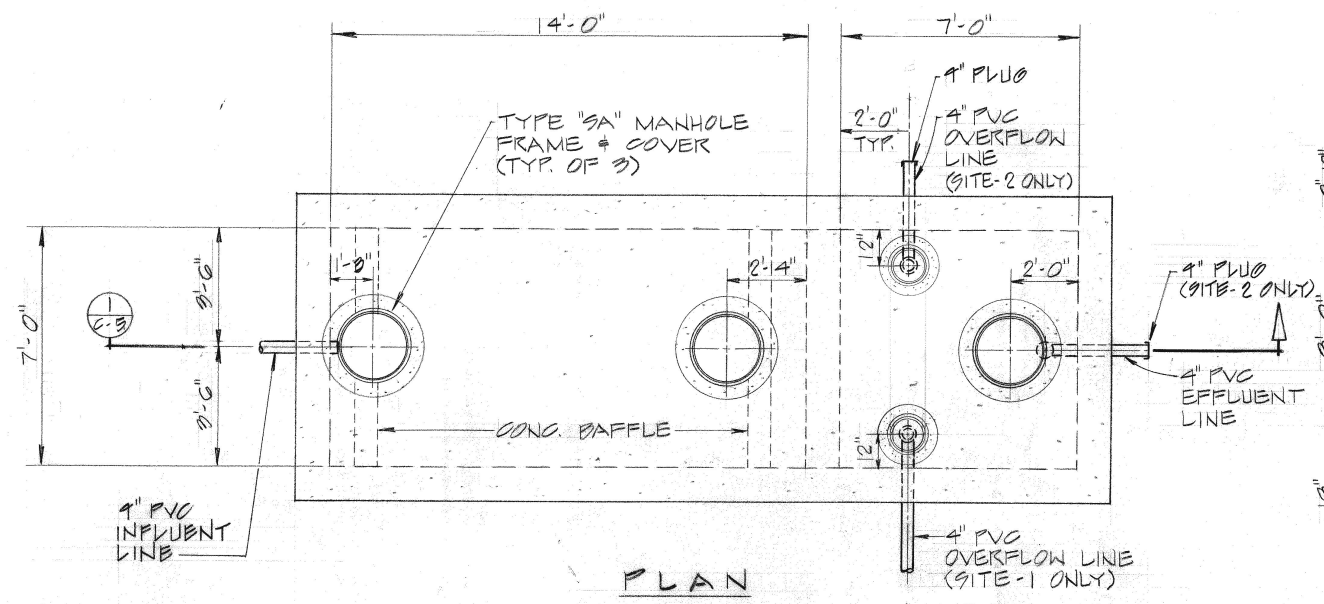


"AS BUILT"

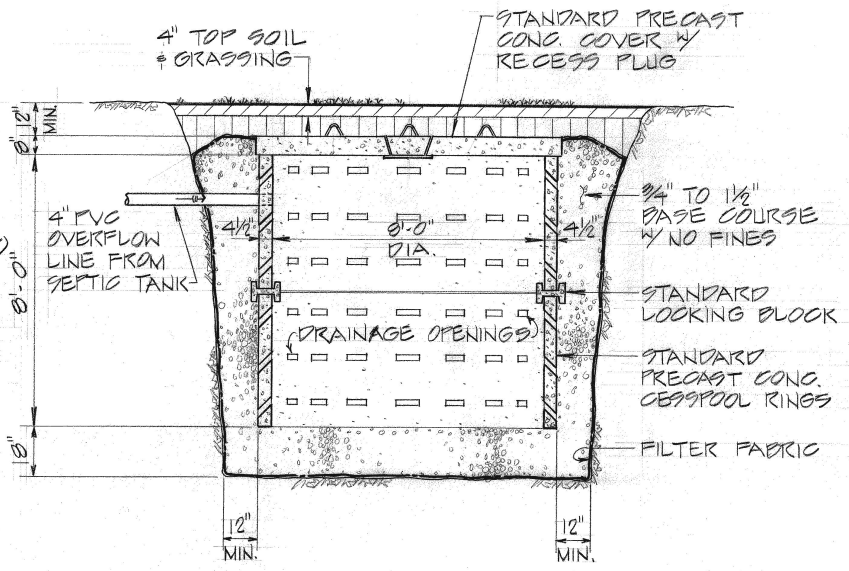


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Kenneth T. Ishizaki

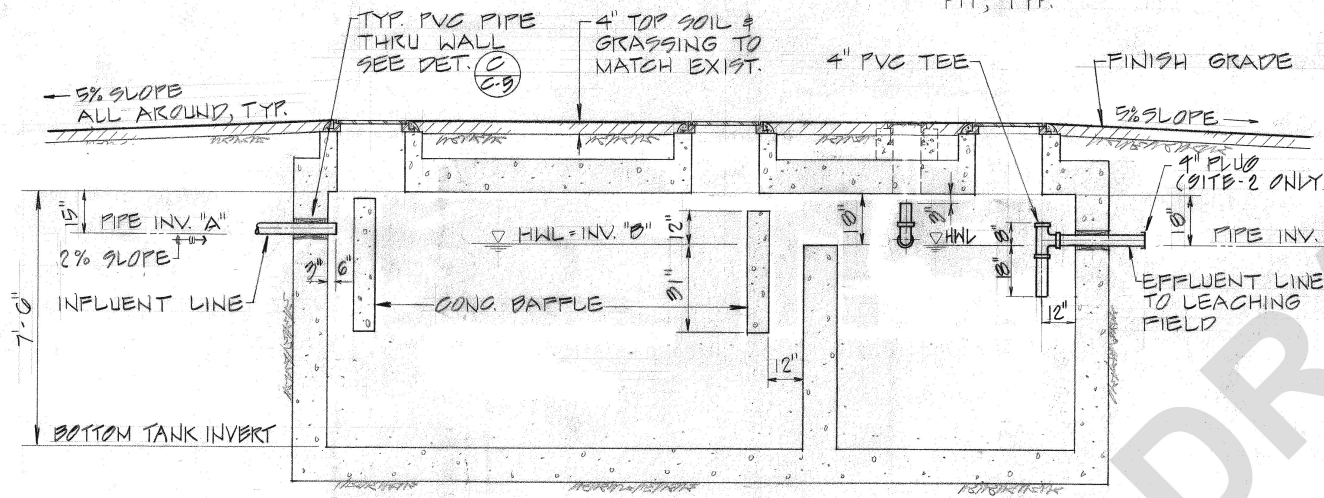
SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF WATER AND LAND DEVELOPMENT			
MALAEKAHANA STATE RECREATION AREA, SEWER AND WATER IMPROVEMENTS PHASE 1 - INC. 2			
SITE PLANS - 1, 2 & 3			
DESIGNED: M.K.K.	SUBMITTED: <i>Lucretia Chang</i>		
DRAWN: G.F.	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: K.I.	DATE: 1-30-10	APPROVED: <i>Kenneth T. Ishizaki</i>	
DATE: 1-31-10		MANAGER-CHIEF ENGINEER	
		FILE NO.	



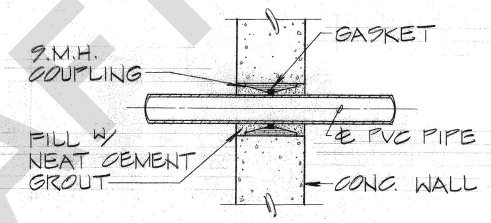
PLAN



SEEPAGE PIT DETAIL B (NO SCALE)



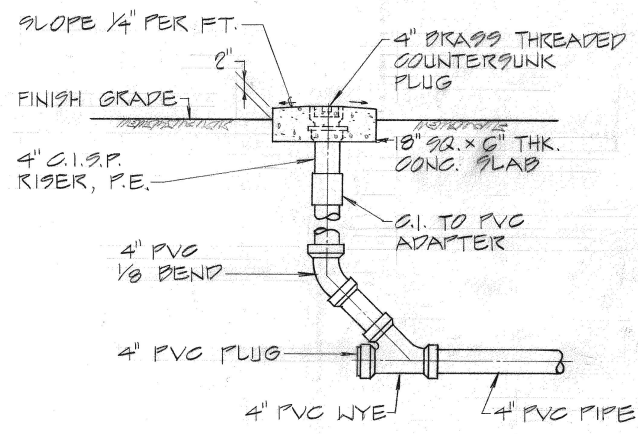
SECTION I (NO SCALE)



PVC PIPE THRU WALL DETAIL C (NO SCALE)

NOTE: FOR TANK INVERTS SEE SCHEDULE THIS SHT.

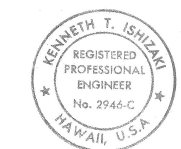
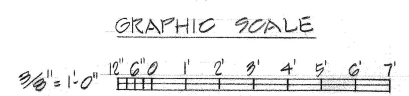
SEPTIC TANK DETAIL A (SCALE: 3/8" = 1'-0")



CLEANOUT TO GRADE DETAIL D (NO SCALE)

INVERT ELEVATION SCHEDULE		
	SITE-1	SITE-2
PIPE INVERT "A"	9.90	6.02
PIPE INVERT "B"	9.65	5.77
BOTTOM TANK INVERT	9.65	60.29
TOP MANHOLE COVER	13.30	9.50

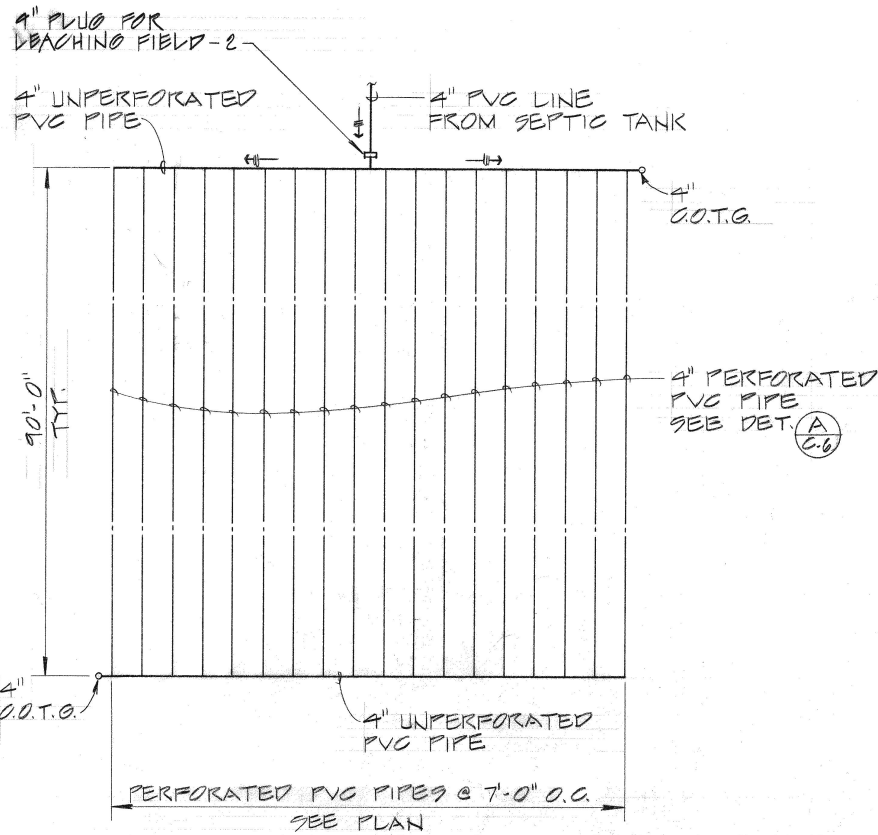
- SEEPAGE PIT NOTES:
- 20 DAYS COMPRESSIVE CONC. STRENGTH - 3000 PSI
 - CONC. REINFORCING DETAILS TO BE PROVIDED BY SEEPAGE PIT SUPPLIER.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Kenneth T. Ishizaki

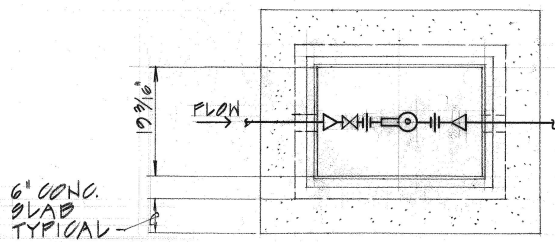
SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF WATER AND LAND DEVELOPMENT			
MALAEKAHANA STATE RECREATION AREA, SEWER AND WATER IMPROVEMENTS PHASE 1- INC. 2			
SEPTIC TANK & SEEPAGE PIT DETAILS			
DESIGNED: P.M.K.	SUBMITTED: <i>Linford Chang</i>		
DRAWN: G.F.	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: K.I.	DATE: 1-31-90		
APPROVED: <i>Kenneth T. Ishizaki</i>	MANAGER-CHIEF ENGINEER		
DATE: 1-31-90	FILE NO.		

"AS BUILT"

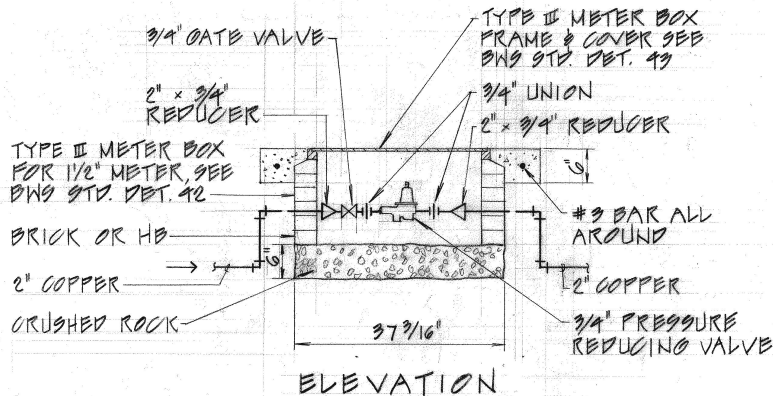


NOTE:
LEACHING FIELD - 2
(ADDITIVE ALT. NO. 1)

TYP. LEACHING FIELD PLAN
NO SCALE

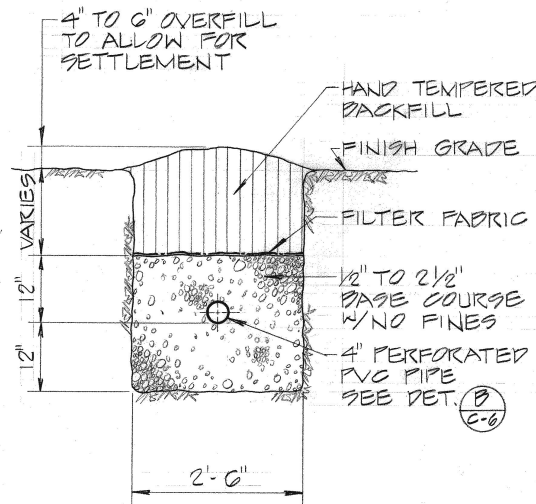


PLAN



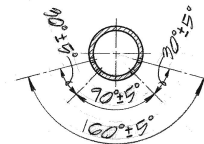
ELEVATION
METER BOX DETAIL

0-6



TYP. TRENCH SECTION
AT LEACHING FIELD

0-6

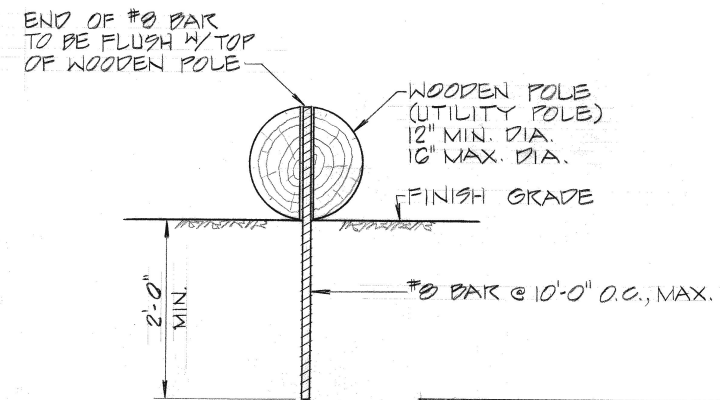


PIPE SECTION

NOTE:
PERFORATION SHALL BE CIRCULAR AND CLEANLY CUT 1/2 INCH ($\pm 1/16$) DIAMETER, ARRANGED IN ROWS PARALLEL TO THE AXIS OF THE PIPE. PERFORATION SHALL BE APPROXIMATELY 3 INCHES CENTER TO CENTER.

4" PERFORATED
PVC PIPE DETAIL

0-6

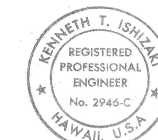


NOTE:
LEACHING FIELD - 2
(ADDITIVE ALT. NO. 1)

TYP. POLE
ANCHOR DETAIL

0-6

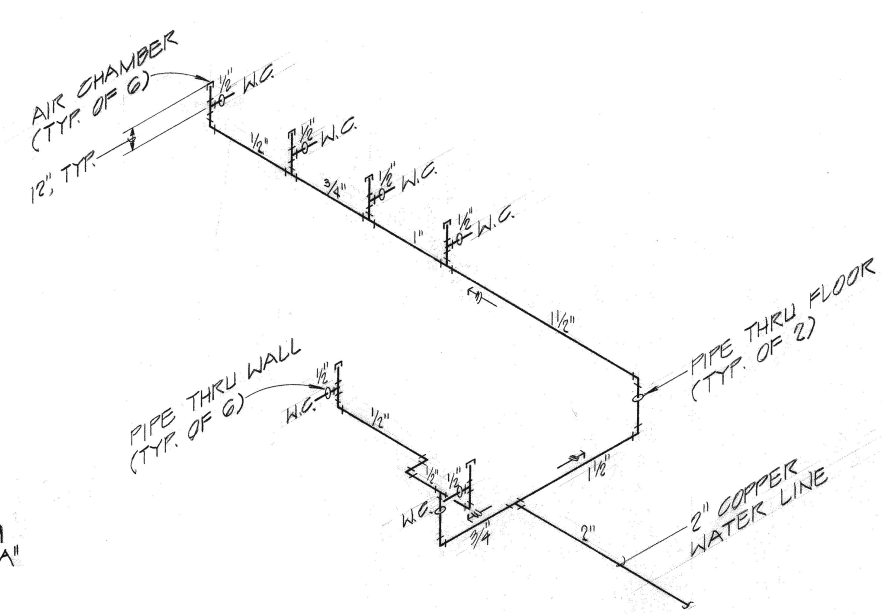
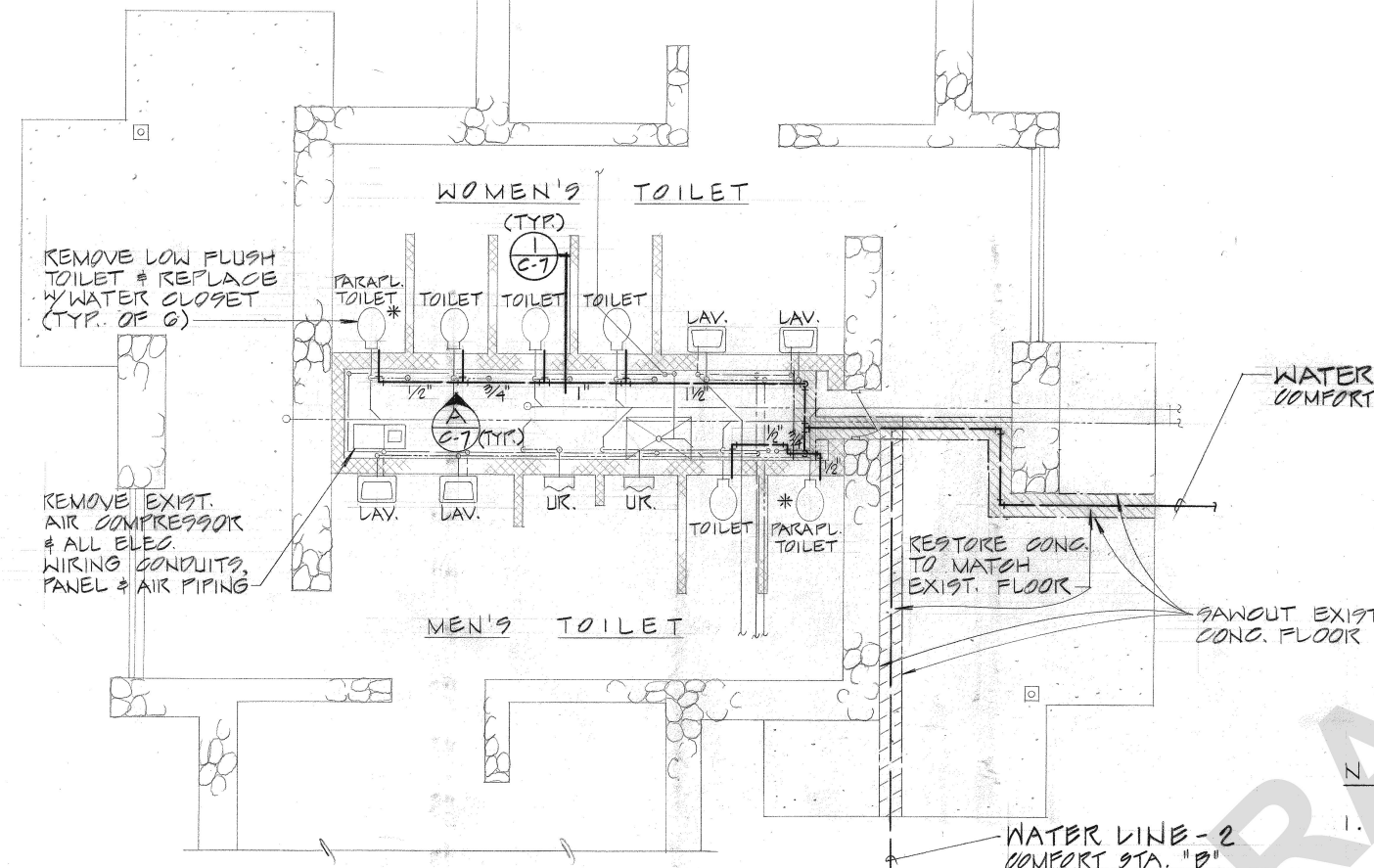
DRAFT



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Kenneth T. Ishizaki

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF WATER AND LAND DEVELOPMENT			
MALAEKAHANA STATE RECREATION AREA, SEWER AND WATER IMPROVEMENTS PHASE 1 - INC. 2			
MISCELLANEOUS DETAILS			
DESIGNED: M.K.K.	SUBMITTED: <i>Luigi Chang</i>		
DRAWN: G.F.	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: K.I.	DATE: 1-31-90	APPROVED: <i>John Taylor</i>	
MANAGER-CHIEF ENGINEER		FILE NO.	
DATE: 1-31-90			

"AS BUILT"



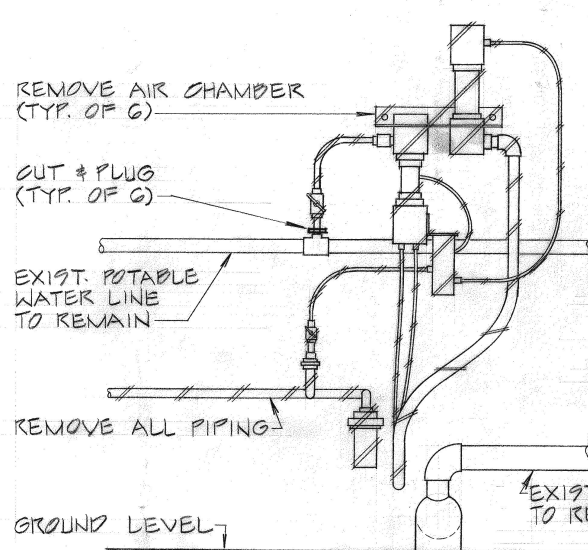
NON - POTABLE WATER PIPING DIAGRAM
NO SCALE

NOTES:

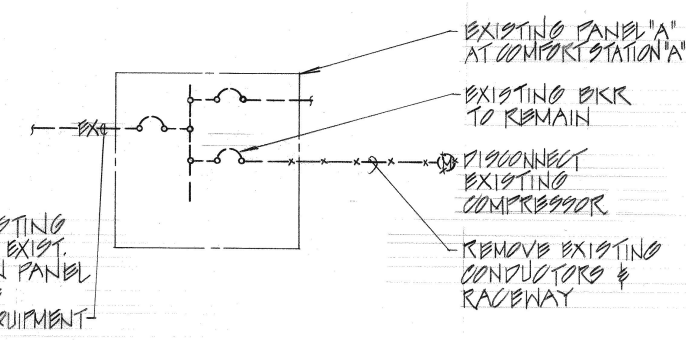
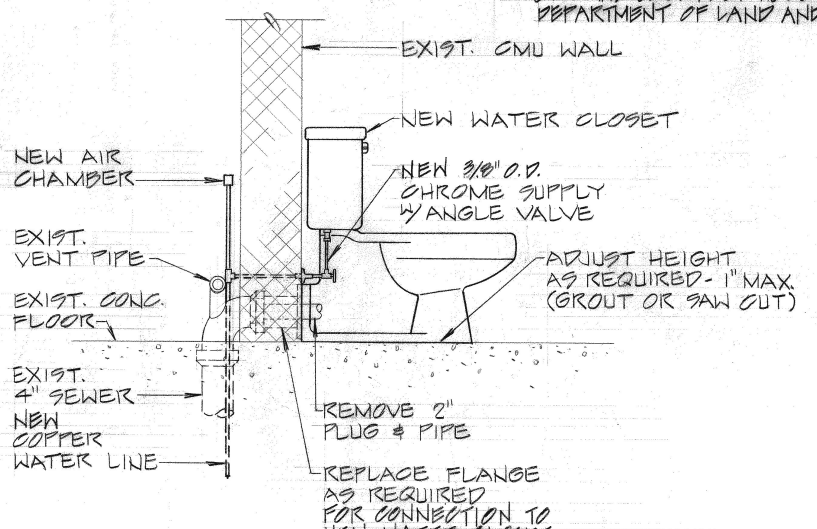
1. REPLACE AIR FLUSH TOILET WITH AMERICAN STANDARD MODEL NO. 2130.151 OR PARAPLEGIC MODEL NO. 2134.129. ADJUST OR REPLACE PIPING AND MOUNTING BOLTS TO ACCOMMODATE NEW WATER CLOSET.
2. ALL REMOVAL ITEMS-CONTRACTOR SHALL COORDINATE WITH DIVISION OF STATE PARKS, OUTDOOR RECREATION AND HISTORIC SITES. CLYDE HOSOKAWA, PH. NO. 548-2696 ANY COSTS INCURRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. ELECTRICAL DEMOLITION SHALL COMPLY WITH CODE REQUIREMENTS, LOCAL ORDINANCES, AND REGULATIONS OF THE CITY AND COUNTY OF HONOLULU, STATE OF HAWAII, AND DEPARTMENT OF LAND AND NATURAL RESOURCES.

*PARAPLEGIC WATER CLOSET TO BE MOUNTED 18" FROM RIM TO FLOOR.
**MODIFICATION TO COMFORT STA. "B" IS ADDITIVE ALTERNATE NO. 1

MODIFICATION TO COMFORT STATION "A" & "B" **
SCALE: 1/4" = 1'-0"



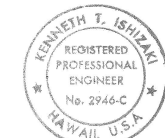
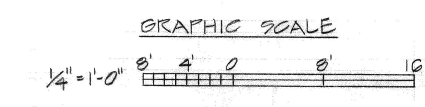
NOTE:
REMOVE ALL AIR SYSTEM PIPING & TUBING AND GROUT ALL HOLES THRU EXIST. CMU WALL, PAINT GROOVE TO MATCH EXIST.



ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

TYP. ELEVATION (A)
NO SCALE

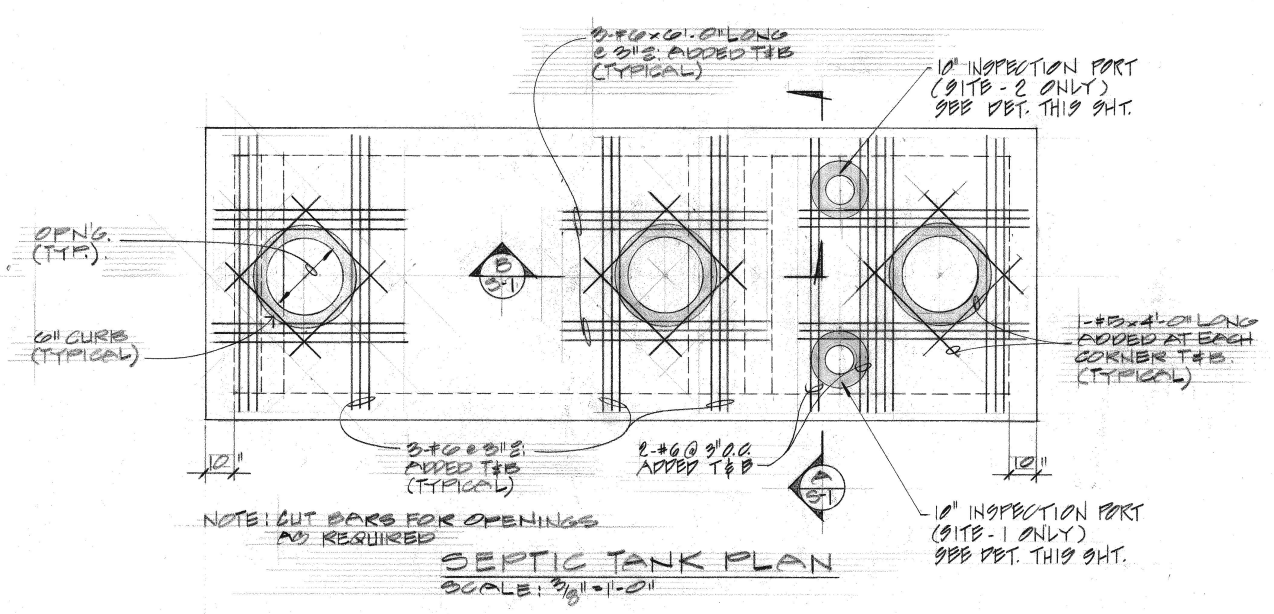
TYP. SECTION (1)
NO SCALE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Date: 1/31/90
K. Ishizaki
MANAGER-CHIEF ENGINEER

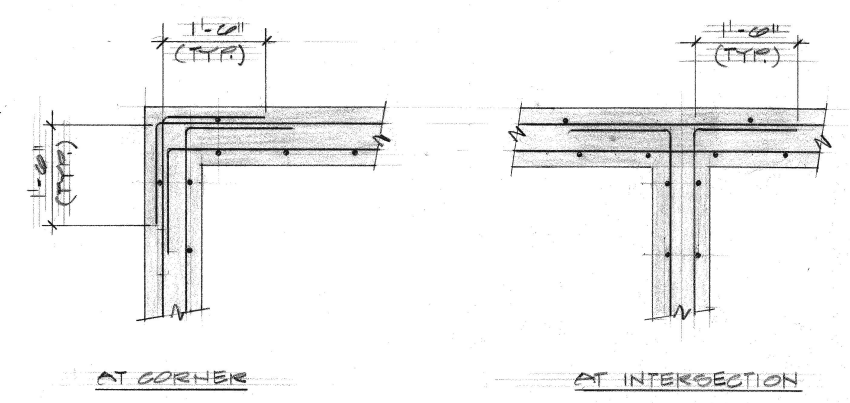
SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF WATER AND LAND DEVELOPMENT			
MALAEKAHANA STATE RECREATION AREA, SEWER AND WATER IMPROVEMENTS PHASE 1 - INC. 2			
MODIFICATION TO COMFORT STATION			
DESIGNED: M.K.K.	SUBMITTED: <i>Liquid Chang</i>		
DRAWN: G.F.	CHIEF DESIGN & CONSTR. ENGINEER		
CHECKED: K.I.	DATE: 1-30-90		
APPROVED: <i>[Signature]</i>	MANAGER-CHIEF ENGINEER		
DATE: 1-31-90	FILE NO.		

"AS BUILT"



NOTE: CUT BARS FOR OPENINGS AS REQUIRED

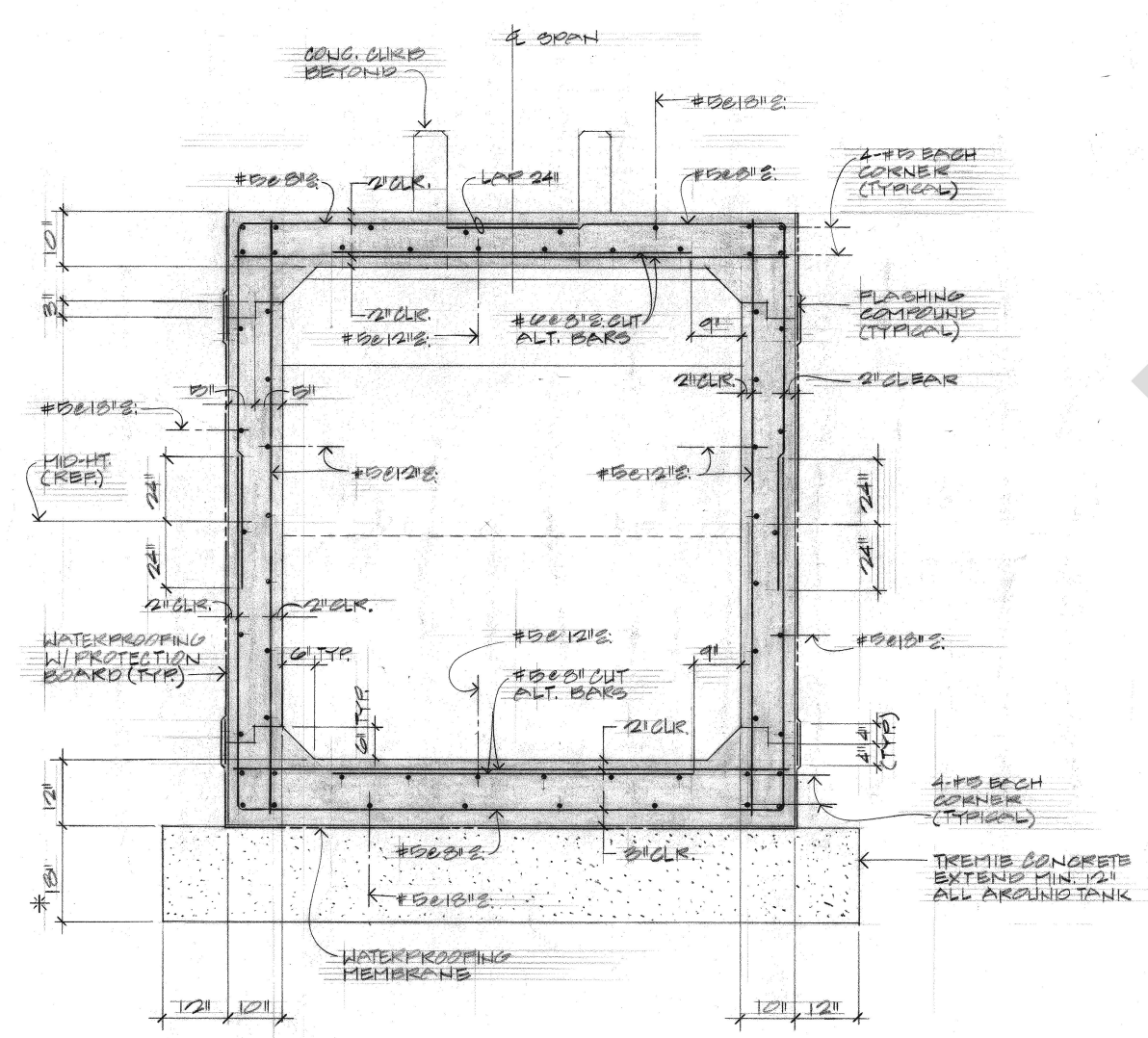
SEPTIC TANK PLAN
SCALE: 3/8" = 1'-0"



TYPICAL WALL HORIZONTAL BAR LAP DETAIL
NO SCALE

GENERAL NOTES

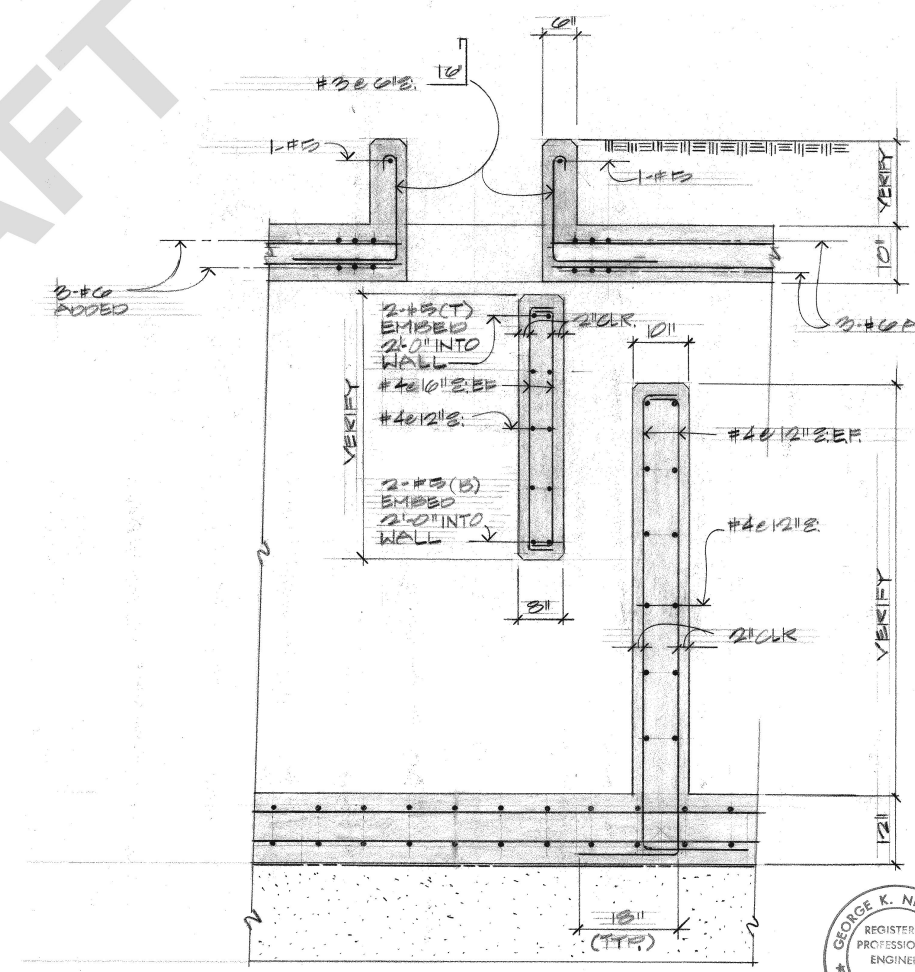
- A. CONCRETE WORK**
- UNLESS OTHERWISE NOTED, ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI STANDARDS 301 AND 318.
 - CONCRETE STRENGTH REQUIRED AT 28 DAYS SHALL BE 3,000 PSI.
 - ALL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 40.
 - CONCRETE PROTECTION FOR REINFORCING:
 - FOR FOOTINGS AND WHERE DEPOSITED ON GRADE = 3" CLEAR.
 - ALL OTHERS = 2" CLEAR.
 - MINIMUM LAPSED TIME, BEFORE FORM REMOVAL:
 - SIDE FORMS OF FOOTINGS = 24 HRS.
 - SIDE FORMS OF WALLS = 3 DAYS.
 - BOTTOM FORMS OF SLABS = 14 DAYS.
- B. FOUNDATION**
- THE BOTTOM OF ALL FOOTING EXCAVATIONS SHALL BE MOISTENED AND COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION.
 - THE EXCAVATION FOR THE SEPTIC TANK WILL LIKELY ENCOUNTER GROUND WATER AND WILL REQUIRE DEWATERING. SHEET PILES MAY BE USED TO SHORE THE EXCAVATIONS AND REDUCE THE AMOUNT OF DEWATERING. EXCAVATIONS SHORED WITH SHEET PILES MAY BE SUBJECT TO PIPING OR BOILING. DESIGN AND SELECTION OF EXCAVATION, SHORING AND DEWATERING METHODS SHALL BE BY THE CONTRACTOR AND SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER.
- C. DESIGN LOAD:**
- LIVE LOAD ON SEPTIC TANK = 12 KIPS WHEEL LOAD



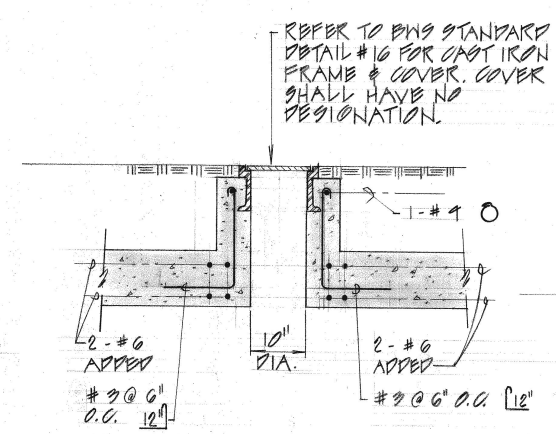
A SECTION
SCALE: 3/4" = 1'-0"

* TREMIE CONCRETE DEPTH BASED ON WATER LEVEL AT 2.0 ELEVATION

DRAFT



B SECTION
SCALE: 3/4" = 1'-0"



INSPECTION PORT DETAIL
SCALE: 3/4" = 1'-0"



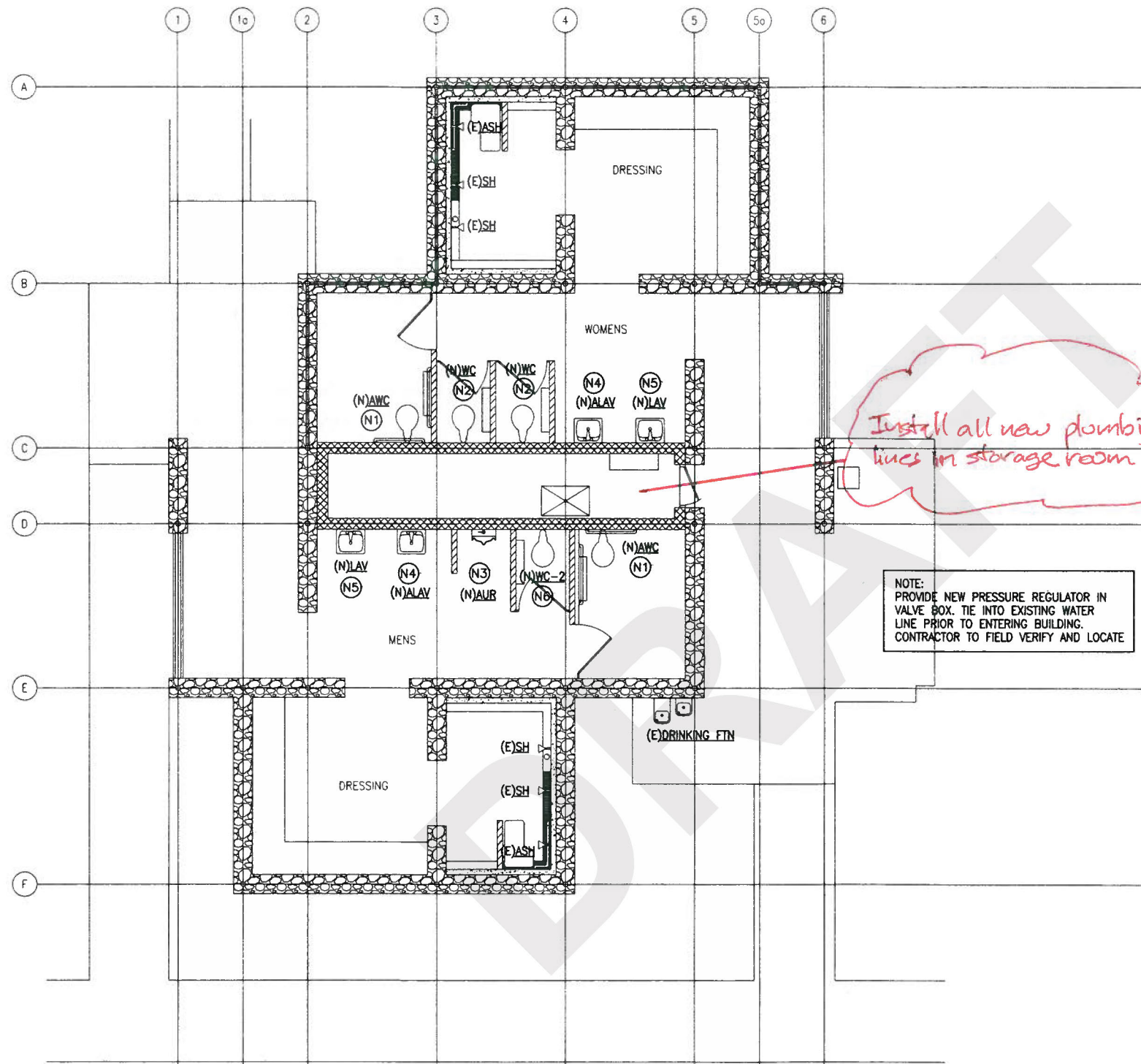
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SYM	DESCRIPTION	DATE	APP'D
REVISIONS			
STATE OF HAWAII			
DEPARTMENT OF LAND AND NATURAL RESOURCES			
DIVISION OF WATER AND LAND DEVELOPMENT			
MALAEKAHANA STATE RECREATION AREA, SEWER AND WATER IMPROVEMENTS PHASE 1 - INC. 2			
SEPTIC TANK PLAN & DETAILS			
DESIGNED:	SUBMITTED:		
DRAWN:	DATE: 1-30-90		
CHECKED:	MANAGER/CHIEF ENGINEER		
APPROVED:	MANAGER/CHIEF ENGINEER		
DATE: 1-21-90	FILE NO.		

APPENDIX A.2

COMFORT STATION A & B AS-BUILT EXCERPTS

DRAFT



NOTE:
 PROVIDE NEW PRESSURE REGULATOR IN
 VALVE BOX. TIE INTO EXISTING WATER
 LINE PRIOR TO ENTERING BUILDING.
 CONTRACTOR TO FIELD VERIFY AND LOCATE

CONSTRUCTION NOTES:

- (N1) PROVIDE NEW ACCESSIBLE ~~9.9~~ BACKOUTLET WATER CLOSET. MODIFY EXIST SANITARY, WATER, AND VENT PIPING AS REQUIRED TO CONNECT TO NEW FIXTURE. WATER CLOSET TO BE INSTALLED IN ACCORDANCE WITH ADAAG 4.16. PATCH WALL AND FLOOR TO MATCH EXISTING.
- (N2) PROVIDE NEW ~~9.9~~ BACKOUTLET WATER CLOSET. MODIFY EXIST SANITARY, WATER, AND VENT PIPING AS REQUIRED TO CONNECT TO NEW FIXTURE. PATCH WALL AND FLOOR TO MATCH EXISTING.
- (N3) PROVIDE NEW ~~9.9~~ ACCESSIBLE URINAL, FLUSH VALVE, SUPPORTS, ROUGH IN, AND MISC. PIPING. CONNECT TO ~~EXISTING~~ SANITARY AND WATER PIPING WITHIN THE WALL. INSTALL IN ACCORDANCE WITH ADAAG 4.18. PATCH WALL TO MATCH EXISTING FINISH.
- (N4) PROVIDE NEW ~~9.9~~ ACCESSIBLE LAVATORY, FAUCET, SUPPORTS, SUPPLY STOP, SUPPLY TUBING, ESCUTCHEON, P-TRAP, ROUGH IN, AND MISC. PIPING. CONNECT TO ~~EXISTING~~ SANITARY AND WATER PIPING WITHIN THE WALL. INSTALL IN ACCORDANCE WITH ADAAG 4.19. PROVIDE PIPE PROTECTION UNDER LAVATORY. PATCH WALL TO MATCH EXISTING FINISH.
- (N5) PROVIDE NEW ~~9.9~~ ACCESSIBLE LAVATORY, FAUCET, SUPPORTS, SUPPLY STOP, SUPPLY TUBING, ESCUTCHEON, P-TRAP, ROUGH IN, AND MISC. PIPING. CONNECT TO ~~EXISTING~~ SANITARY AND WATER PIPING WITHIN THE WALL. PATCH WALL TO MATCH EXISTING FINISH.
- (N6) PROVIDE NEW ~~9.9~~ FLOOR OUTLET WATER CLOSET. MODIFY EXIST SANITARY, WATER, AND VENT PIPING AS REQUIRED TO CONNECT TO NEW FIXTURE. PATCH WALL AND FLOOR TO MATCH EXISTING.

Install all new plumbing lines in storage room

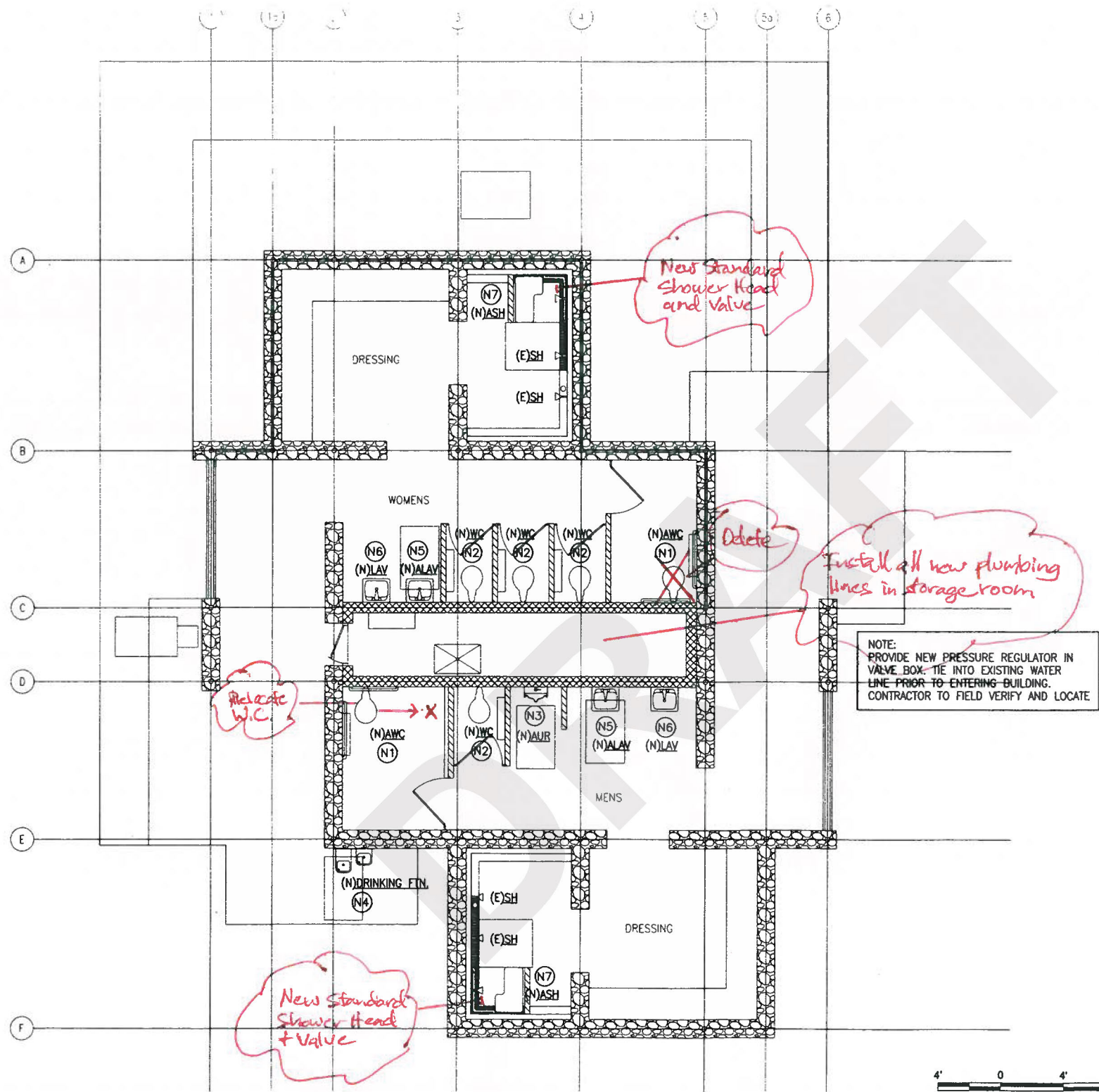
AS BUILT

Certified by: Wade Chan
 Signature: Wade Chan
 Name: Wade Chan
 Date: 6/18/12
 Company: RK Construction Company LLC

1 BLDG A NEW PLUMBING PLAN
 M-3 1/4" = 1' - 0"



REVISION NO.	SYN.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING BRANCH, LAND DIVISION					
MALAEKAHANA STATE RECREATION AREA, KALANAI POINT, RENOVATE CONFORT STATIONS A & B					
BUILDING A NEW PLUMBING PLAN					
DESIGNED: JKY	SUBMITTED: <u>Wade Chan</u>				
DRAWN: MEI	DATE: MAY 2007				
CHECKED: RSO	SCALE: AS NOTED				
APPROVED: <u>ROSS S. OKUDA</u>		DATE: JAN -3 2011	DRAWING NO. M-3		
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION License Expiration Date: 4/30/08		DATE			



CONSTRUCTION NOTES:

- (N1) PROVIDE NEW ACCESSIBLE S.S. BACKOUTLET WATER CLOSET. MODIFY EXIST SANITARY, WATER, AND VENT PIPING AS REQUIRED TO CONNECT TO NEW FIXTURE. WATER CLOSET TO BE INSTALLED IN ACCORDANCE WITH ADAAG 4.16. PATCH WALL AND FLOOR TO MATCH EXISTING.
- (N2) PROVIDE NEW S.S. BACKOUTLET WATER CLOSET. MODIFY EXIST SANITARY, WATER, AND VENT PIPING AS REQUIRED TO CONNECT TO NEW FIXTURE. PATCH WALL AND FLOOR TO MATCH EXISTING.
- (N3) PROVIDE NEW S.S. ACCESSIBLE URINAL, FLUSH VALVE, SUPPORTS, ROUGH IN, AND MISC. PIPING. CONNECT TO EXISTING SANITARY AND WATER PIPING WITHIN THE WALL. INSTALL IN ACCORDANCE WITH ADAAG 4.18. PATCH WALL TO MATCH EXISTING FINISH.
- (N4) PROVIDE NEW ACCESSIBLE DUAL HEIGHT DRINKING FOUNTAIN, ROUGH IN, MISC. PIPING AND SUPPORTS. CONNECT TO EXISTING SANITARY AND WATER PIPING WITHIN THE WALL. INSTALL IN ACCORDANCE WITH ADAAG 4.15. PROVIDE APRON AS REQUIRED TO MEET ADAAG REQUIREMENTS. PATCH WALL TO MATCH EXISTING FINISH.
- (N5) PROVIDE NEW S.S. ACCESSIBLE LAVATORY, FAUCET, SUPPORTS, SUPPLY STOP, SUPPLY TUBING, ESCUTCHEON, P-TRAP, ROUGH IN, AND MISC. PIPING. CONNECT TO EXISTING SANITARY AND WATER PIPING WITHIN THE WALL. INSTALL IN ACCORDANCE WITH ADAAG 4.19. PROVIDE PIPE PROTECTION UNDER LAVATORY. PATCH WALL TO MATCH EXISTING FINISH.
- (N6) PROVIDE NEW S.S. ACCESSIBLE LAVATORY, FAUCET, SUPPORTS, SUPPLY STOP, SUPPLY TUBING, ESCUTCHEON, P-TRAP, ROUGH IN, AND MISC. PIPING. CONNECT TO EXISTING SANITARY AND WATER PIPING WITHIN THE WALL. PATCH WALL TO MATCH EXISTING FINISH.
- (N7) PROVIDE NEW ACCESSIBLE FIXED SHOWER HEAD, ACCESSIBLE SHUT-OFF VALVE, MISC. PIPING AND SUPPORTS. CONNECT TO EXISTING WATER PIPING WITHIN THE WALL. INSTALL IN ACCORDANCE WITH ADAAG 4.21. PATCH WALL TO MATCH EXISTING.

NOTE:
 PROVIDE NEW PRESSURE REGULATOR IN VALVE BOX. TIE INTO EXISTING WATER LINE PRIOR TO ENTERING BUILDING. CONTRACTOR TO FIELD VERIFY AND LOCATE

AS BUILT

Certified by: Wally Chan
 Signature: Wally Chan
 Name: Wally Chan
 Date: 6/18/12
 Company: RK Construction Company LLC

1 BLDG B NEW PLUMBING PLAN
 M-5 1/4" = 1' - 0"



REVISION NO.	SYN.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING BRANCH, LAND DIVISION					
MALAEKAHANA STATE RECREATION AREA, KALANAI POINT, RENOVATE CONFORT STATIONS A & B					
BUILDING B NEW PLUMBING PLAN					
DESIGNED:	JKY	SUBMITTED:	RS	DATE:	MAY 2007
DRAWN:	MEI	CHECKED:	RSD	SCALE:	AS NOTED
APPROVED:	<u>Wally Chan</u>	DATE:		DRAWING NO.:	M-5
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION License Expiration Date: 4/30/08 CHIEF ENGINEER					

APPENDIX B

STATE IWS STANDARDS EXCERPTS

DRAFT

CHAPTER 11-62 APPENDIX D - TABLES

TABLE I
July 1, 2014

Type of Establishment	Gallons Per Person Per Day (Unless Otherwise Noted)
Airports (per passenger)	5
Camps:	
Campground with central comfort stations	32
With flush toilets, no showers	25
Construction camps (semi-permanent)	50
Day camps (no meals served)	15
Resort camps (night and day) with limited plumbing	50
Luxury camps	100
Church	
With kitchen	10
Without kitchen	5
Cottages and small dwellings with seasonal occupancy (2 persons per bedroom minimum)	100
Country clubs (per resident member)	100
Country clubs (per non-resident member present)	25
Dentist per chair	200
Doctor per patient	5
Dwelling (2 persons per bedroom minimum)	100
Factories (gallons per person, per shift, exclusive of industrial waste)	35
Hair salons and barber shops,	
Barber shops (per chair)	50
Beauty salons (per chair)	125
Hospitals (per bed space)	250
Hotels with private baths (2 person per bedroom minimum)	100
Institutions other than hospitals (per bed space)	125
Laundries, self-service (per machine)	300
Mobile home parks (per space)	250
Motels with bath, toilet, and kitchen waste (per bed space)	60
Picnic parks (toilets wastes only) (per picnicker)	5
Picnic parks with bathhouses, showers, and flush toilets	50
Restaurants	
Per day per seat	50
Per meal without public restrooms	5
Per meal served with toilets	10
Additional kitchen wastes per take out meals	3
Additional for bars and cocktail lounges, per seat	15
Schools:	
Boarding	100
Day, without gyms, cafeteria, or showers	15
Day, with gyms, cafeteria, and showers	25
Day, with cafeteria, but without gyms or showers	20
Service station (per vehicle served)	10
Swimming pools and bathhouses	10
Theaters:	
Movie (per auditorium seat)	5
Drive-in (per car space)	5
Workers (in addition to above):	
Construction (at semi-permanent camps)	50
Day, at schools and offices (per shift)	20
Employee (per shift)	20

CHAPTER 11-62 APPENDIX D - TABLES

TABLE III
July 1, 2014

Percolation Rate (min/inch) Less than or equal to	Required Absorption Area (ft ² /bedroom or 200 gallons)	Percolation Rate (min/inch) Less than or equal to	Required Absorption Area (ft ² /bedroom or 200 gallons)
1	70	31	253
2	85	32	257
3	100	33	260
4	115	34	263
5	125	35	267
6	133	36	270
7	141	37	273
8	149	38	277
9	157	39	280
10	165	40	283
11	170	41	287
12	175	42	290
13	180	43	293
14	185	44	297
15	190	45	300
16	194	46	302
17	198	47	304
18	202	48	306
19	206	49	308
20	210	50	310
21	214	51	312
22	218	52	314
23	222	53	316
24	226	54	318
25	230	55	320
26	234	56	322
27	238	57	324
28	242	58	326
29	246	59	328
30	250	60	330

APPENDIX C

CITY PARKS IWS STANDARDS EXCERPTS

DRAFT

**GUIDELINES FOR THE DESIGN OF NEW OR RECONSTRUCTED INDIVIDUAL
WASTEWATER SYSTEMS FOR
CITY AND COUNTY OF HONOLULU PARKS**

The purpose of this document is to establish a methodology for estimating design flows, and sizing wastewater treatment and disposal systems for comfort stations at various City and County of Honolulu parks presently served by individual wastewater systems.

I. WASTEWATER DESIGN FLOW

The maximum daily flow shall be used as the basis for design. This flow shall be comprised of two components: (1) day fixture flow and (2) night camper flow.

Day Fixture Flow

Day fixture flow shall be based on the following assumptions:

- Toilets, urinals, and lavatories contribute to flow.
- Flow generated from each toilet or urinal is 3.5 gallons and includes flow from lavatories. For older facilities built before 1985, flows shall be based on 4.0 gallons per toilet or urinal usage.
- Maximum usage for all urinals and toilets is based on one use every 5 minutes (or 12 times an hour) over a 12-hour period (7 a.m. to 7 p.m.) each day, unless otherwise restricted use of the park, limits the hours of operations.

By assuming that the flow from the comfort station during the day is restricted by the maximum use of the plumbing fixtures, day fixture flow shall be calculated as follows:

$$\text{Day fixture flow, } Q_f, \text{ gpd} = [(\text{number of urinal fixtures}) + (\text{number of toilet fixtures})] \\ \times [3.5 \text{ or } 4.0 \text{ gallons/fixture/use}] \\ \times [(1 \text{ use}/5 \text{ minutes})(60 \text{ minutes}/\text{hour})(12 \text{ hours}/\text{use}/\text{day})]$$

Night Camper Flow

Where overnight camping is allowed at the park, the flow contributed by campers shall be between 32 gallons/person/day as determined in Table 1, April 15, 1997 of the Hawaii Administrative Rules, Title 11, Department of Health, Chapter 62, "Wastewater Systems", hereinafter referred to as HAR Chapter 11-62. A copy of the HAR Chapter 11-62 is provided in Appendix A. Flow generated by campers during the day is already accounted for in the day fixture flow. Assuming that one-third of the daily camper flow is generated at night (7 p.m. to 7 a.m.), night camper flow shall be calculated as follows:

$$\text{Night camper flow, } Q_c, \text{ gpd} = (\text{maximum number of persons camping}) \times \\ (32 \text{ gallons /person/day}) \times (1/3)$$

Where no camping is allowed, the night camper flow shall be zero.

Maximum Daily Flow

Therefore, the maximum daily flow shall be calculated as follows:

$$\text{Maximum Daily Flow, } Q, \text{ gpd} = Q_f + Q_c$$

II. TREATMENT SYSTEM CONSIDERATIONS

The maximum daily flow, as calculated in the previous section, is used to size septic tanks and aerobic units.

Septic Tank Sizing

In place of the HAR Chapter 11-62, the minimum tank volume for septic tanks shall be calculated as specified by the Department of Health (see copy of reference letter in Appendix B) and as summarized below.

Design Flow, Q (gpd)	Minimum Tank Volume (gallons)
$Q < 800$	1,000
$800 \leq Q \leq 1,000$	1,250
$1,000 < Q \leq 1500$	1.5Q
$Q > 1,500$	$1,125 + 0.75Q$

Aerobic Treatment Unit Sizing

Aerobic units shall be designed per manufacturer's recommendation.

Number of Treatment Units

To provide continuous treatment, a minimum of two equally sized units in parallel should be provided to handle the design flow. For example, if three units are provided, then each unit should be designed to handle one-third of the design flow.

III. DISPOSAL SYSTEM CONSIDERATIONS

The maximum daily flow, as calculated in the previous section, is used to size the disposal system. For subsurface or irrigation systems, a backup system with 100 percent capacity shall be provided.

For subsurface systems, the minimum soil absorption area required is calculated as specified in the HAR Chapter 11-62, Appendix F, Table III, based on the maximum daily flow, Q, gpd.

Using the percolation rate from the site, t, in minutes per inch, an application rate, A_t ($\text{ft}^2/200$ gallons), is derived from Table III. Interpolation of percolation rates is not allowed, but should be rounded up to the next highest percolation rate to obtain application rates.

Therefore, the minimum soil absorption area shall be calculated as follows:

$$\text{Minimum soil absorption area required, } A, \text{ sq. ft.} = Q/200 \text{ gallons} \times A_t$$

DRAFT

Appendix C

Archaeological Literature Review and Field Inspection

DRAFT

**Archaeological Literature Review and Field Inspection
Park Facility Improvements Project – Mālaekahana State
Recreation Area – Kalanai Section
Lā‘iewai & Mālaekahana Ahupua‘a, Ko‘olauloa District
O‘ahu Island, Hawai‘i
TMK (1) 5-6-001:004**



View from northwest corner of construction footprint area, facing east

**Prepared for
G70 (Honolulu, Hawai‘i)
and
Hawai‘i State Parks Division (agency)**

**Prepared by
Christopher M. Monahan, Ph.D.
and
Trisha K. Watson, J.D., Ph.D.**

**HŌNUA
CONSULTING
Honolulu, Hawai‘i**

January 2026

Management Summary

This archaeological literature review and field inspection (ALRFI) supports park facility improvements to a portion of the Mālaekahana State Recreation Area (SRA) – Kalanai Section, Lā‘iewai and Mālaekahana Ahupua‘a, Ko‘olauloa District, Island of O‘ahu, Hawai‘i. The subject parcel (“Kalanai Section”) of 73.7 acres is TMK (1) 5-6-001:004. Proposed park improvements are in a relatively small portion of the overall TMK parcel. This report includes information relevant to the cultural, historical and archaeological significance of the entire subject parcel, but specifically assesses the potential impacts of the proposed improvements on archaeological historic properties in the “construction footprint.” The subject parcel is owned by the State of Hawai‘i. Project funding is anticipated to come from both state and federal sources; thus, the proposed project is reviewable under both Hawai‘i Revised Statutes (HRS) Chapter 6E-8 as well as Section 106 of the National Historic Preservation Act (NHPA).

Proposed park improvements include the following: (1) Replacement of two existing comfort stations near camping areas A and B in the Kalanai section of the park; (2) Construction of a new pavilion, stand-alone pot-washing station and rinsing shower; (3) Upgrades to the park’s existing individual wastewater system; (4) New group camping site; and (5) Camper van site. Specific scope of work details (construction plans) are not available at this time, but the proposed improvements will require ground disturbance (i.e., subsurface excavation).

The objectives of this ALRFI were: (1) documentation and description of the parcel’s land-use history in the context of both its traditional Hawaiian character as well as its historic-period changes; (2) identification of any archaeological historic properties or component features in or adjacent to the project area; and (3) providing information relevant to the likelihood of encountering historically-significant cultural deposits (i.e., archaeological historic properties and/or component features) in subsurface context during construction associated with the proposed project. This ALRFI is not an archaeological inventory survey (AIS), and it is not intended for formal review by the State Historic Preservation Division (SHPD). It may be used, however, to support the project proponent’s consultation with the SHPD in compliance with HRS Chapter 6E-8, Section 106 of the NHPA and/or other state and federal environmental regulations.

Archival research on the cultural and historical context of the subject parcel support the following main conclusions: (1) Most of the subject parcel consists of a stabilized sand dunes just back of the shoreline with more level, but still sandy terrain behind it (this includes the construction footprint); (2) The northwestern part of the subject parcel, but not the construction footprint, would have been amenable to traditional Hawaiian settlement and cultivation since this area was not dominated by sand deposits. This northwestern portion was used for commercial (sugarcane) in the historic period; (3) The sand deposits, since they were suitable neither for permanent house sites nor agricultural pursuits, were commonly used by Hawaiians in pre-Contact to early historic times for human burials as well as more ephemeral (temporary) shelters for fishermen and others accessing the shoreline for subsistence purposes. A well-known traditional Hawaiian ko‘a (fishing shrine) is located at Kalanai Point (see item #2 below); and (4) The sand-dune and level-sand areas, including the construction footprint, were not utilized in the historic period by either commercial agriculture or ranching, since these soils and physiographic setting were not ideal for either of these common economic land uses.

Previous archaeological studies in the subject parcel and construction footprint have identified two archaeological historic properties: (1) The first, State Inventory of Historic Places (SIHP) # 50-80-02-00274 (also known as “McAllister Site 274”), is at Kalanai Point. This is the only above-ground historic property in the subject parcel. This site is not within or near the construction footprint; and (2) Archaeological work the late 1970s and 1980s (e.g., Yent and Estioko-Griffin 1980, Yent and Ota 1982, Griffin and Yent 1986) and continuing thereafter (e.g., Smith 1990; Carpenter 1996, 2012) has identified/designated a discontinuous subsurface cultural layer in the park’s sand dune deposit as SIHP # 50-80-02-02801 with firepits, imu (earth ovens), post holes, midden and portable artifacts interpreted as fishing and domestic implements. The discontinuous subsurface cultural layer has been identified in six areas, designated A–F, along the length of the dune system. One burial was discovered in Area A, which included the ko‘a, during subsurface testing in the 1970s. Three main periods of pre-Contact site occupation from circa AD 1600–1780 were documented. These studies clearly demonstrate the subject parcel was intensively utilized by Hawaiians practicing a traditional lifestyle in pre-Contact times. *The proposed construction footprint is immediately adjacent to areas B and E of SIHP # 02801 (see Figure 15 and Figure 16).*

Fieldwork resulted in the following main findings: (1) With one possible exception, no historic properties, or potential historic properties, were observed at the ground surface in the proposed construction footprint; prior to construction of the park’s existing facilities and infrastructure, multiple phases of archaeological survey and documentation starting in the late 1970s did not identify any archaeological site-features in the current construction footprint; and (2) One above-ground concrete structure that may represent an architectural historic property, possibly a small, possibly electrical military pillbox appears to be located at or just outside of the boundary of the southeast corner of the current construction footprint (Figure 19, Figure 20 and Figure 21). According to recent policy directives from the SHPD, such site-features are no longer assessed and documented by archaeologists, but require the attention of a qualified architectural historian (preferably a military specialist) and area experts.

Honua recommends the following: (1) Regarding the small, above-ground concrete structure that may be a military pillbox at or near the boundary of the southeast corner of the current construction footprint (see Figure 19, Figure 20, and Figure 21), Honua recommends either (a) avoidance of this possible historic property by the proposed project, or (b) consultation with the SHPD about its assessment/evaluation by a qualified professional architectural historian; according to recent policy directives from the SHPD, such site-features are no longer interpreted by archaeologists, but require the attention of a qualified architectural historian (in this case, preferably a military specialist); and (2) Consultation with the SHPD should include discussion of possible mitigation measures (i.e., either additional subsurface testing [archaeological excavation] or archaeological monitoring) in the construction footprint near areas B and E of SIHP # 02801, in particular, and the rest of the construction footprint, in general, since sand-dune deposits of this type are known to contain discontinuous (i.e., hard to predict) evidence of traditional Hawaiian cultural material as well as burials throughout O‘ahu and other islands.

Table of Contents

Management Summary	i
Section 1 Introduction	1
1.1 Project Background	1
1.2 Project Description	1
1.3 Document Purpose and Regulatory Context.....	2
1.4 Environmental Setting	2
1.4.1 Natural Environment.....	2
1.4.2 Built Environment.....	3
Section 2 Cultural and Historical Context.....	9
2.1 Hawaiian Cultural Landscape	9
2.1.1 Other Mo‘olelo (Oral-historical Accounts)	12
2.1.2 Project Area – Hawaiian Cultural Landscape	13
2.2 Early Historic Period	14
2.2.1 Māhele ‘Āina (Mid-1800s)	15
2.3 Mid-1800s to Late Historic Period	16
2.4 A Sampling of Historical Maps and Aerial Images.....	18
Section 3 Archaeological Context	28
3.1 Island-wide Studies that Nominally Included the Subject Parcel	28
3.2 Studies in Mālaekahana SRA	30
3.2.1 Hammatt 1977	30
3.2.2 Olson 1979.....	30
3.2.3 Yent and Estioko-Griffin 1980, Yent and Ota 1982, Griffin and Yent 1986	30
3.2.4 Carpenter 1996, 2012.....	35
3.3 Kahawainui Stream with Portions of Mālaekahana SRA	35
3.3.1 Ahlo and Hommon 1981.....	35
3.3.2 Neller 1984a,b.....	35
3.4 Other Nearby Studies.....	37
3.4.1 Bath 1985.....	37
3.4.2 Jensen 1989, Kennedy 1990	37
3.4.3 Kennedy 1989.....	37
3.4.4 Dunn et al. 1992, Halpern and Rosendahl 1995	38
3.4.5 Monahan 2005	38
3.4.6 McElroy 2016	38
3.4.7 McElroy and Duhaylonsad 2017	39
3.4.8 Off-shore Inadvertent Discovery of Human Skeletal Remains	39
Section 4 Results of Field Inspection	40
4.1 Methodology.....	40
4.2 Survey Results	40
Section 5 Conclusion	46
5.1 Results.....	47
5.2 Recommendations.....	48

Section 6 References Cited 49

APPENDIX A – Subject Parcel Photographs taken by Honua A1

List of Figures

Figure 1. Portion of 2024 USGS Kahuku Quadrangle topographic map showing project area (base map source: USGS online at http://ngmdb.usgs.gov/topoview)	4
Figure 2. Aerial photograph showing location of project area (base image source: Google Earth accessed February 2025).....	5
Figure 3. Tax Map Key (TMK) (1) 5-6-001 showing project area (base map source: Hawai‘i TMK Service n.d.)	6
Figure 4. Construction footprint depiction (yellow) within subject parcel (“project area”) (red)...	7
Figure 5. Soil data for the project area (base image from U.S. Department of Agriculture, Natural Resources Conservation Service soil survey at http://websoilsurvey.sc.egov.usda.gov/)...8	
Figure 6. Detail of 1884 Jackson map showing project-area location (Registered Map 1347) (base map source: DAGS Land Survey Map Search, http://ags.hawaii.gov/survey/map-search/).....	20
Figure 7. Portion of 1902 Wall map showing project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html).....	21
Figure 8. Portion of 1913 U.S. Army topographic map with project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)	22
Figure 9. Portion of 1930 USGS topographic map with project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)	23
Figure 10. Portion of 1952 USGS topographic map with project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)	24
Figure 11. Portion of 1962 aerial photograph including project area (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)....	25
Figure 12. Portion of 1965 aerial photograph including project area (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html)....	26
Figure 13. Portion of 1982 USGS topographic map (Kahuku quadrangle) including project area (base map source: University of Hawai‘i-Mānoa’s digital maps, http://magis.manoa.hawaii.edu/maps/index.html).....	27
Figure 14. Previous archaeological studies near project area (see table and text above for details)	33
Figure 15. Known archaeological sites near project area (see table and text above for details); SIHP # 04350, in the ocean, is not a typo (see text); note, letters (A through F) next to SIHP # 02801 are designated areas of this subsurface cultural deposit (see text).....	34
Figure 16. Areas A through F at SIHP # 50-80-02-02801 (see Figure 15 above for proposed construction footprint’s proximity to Areas B and E) (source: Yent 2018:52)	36
Figure 17. Pedestrian transects walked by Honua archaeologist and key to photographs taken in the project area by Honua (see Appendix A for numbered photographs)	41
Figure 18. Detailed view of pedestrian transects and photo locations (see Appendix A for numbered photographs)	42
Figure 19. Small concrete structure, possible military pillbox, near the southeastern boundary of the construction footprint; view north-northeast.....	43

Figure 20. Another view of small concrete structure, possible military pillbox, near the southeastern boundary of the construction footprint; south-southeast44

Figure 21. Detail of opening on south side of small concrete structure, possible military pillbox, near the southeastern boundary of the construction footprint; view north45

Table

Table 1. Previous Archaeological Studies and Results in and near the Project Area.....31

Section 1 Introduction

1.1 Project Background

This archaeological literature review and field inspection (ALRFI) was completed on behalf of G70 and the Hawai‘i Department of Land and Natural Resources (DLNR), Division of State Parks (DSP) in support of park facility improvements to a portion of the Mālaekahana State Recreation Area (SRA) – Kalanai Section, Lā‘iewai and Mālaekahana Ahupua‘a, Ko‘olaupua District, Island of O‘ahu, Hawai‘i (Figure 1 and Figure 2). The subject parcel (“Kalanai Section”) of the SRA, consisting of 73.7 acres, is designated TMK (1) 5-6-001:004 (Figure 3). Proposed park improvements are in a relatively small portion of the overall TMK parcel (Figure 4). This report includes information relevant to the cultural, historical and archaeological significance of the entire subject parcel, but also specifically assesses the potential impacts of the proposed improvements on archaeological historic properties in the “construction footprint” (see orange polygon in Figure 4).

The subject parcel is owned by the State of Hawai‘i. Project funding is anticipated to come from both state and federal sources; thus, the proposed project is reviewable under both Hawai‘i Revised Statutes (HRS) Chapter 6E-8 as well as Section 106 of the National Historic Preservation Act (NHPA).

The subject parcel, located on a prominent point (Kalanai) between Mālaekahana Bay to the north and Lā‘ie Bay to the south, is bounded on its west side by Kamehameha Highway, by the ocean to the east, by Kahawainui Stream on its south side and by residential lots to the north. Moku‘auia Island, a state seabird sanctuary, is just offshore from Kalanai Point. Kahuku town center is about 1.25 miles to the north. Lā‘ie town center is about 1.0 miles to the south. The southwestern end of the subject parcel is across the highway from the City & County of Honolulu’s (CCH) Lā‘ie Corporation Yard (a vehicle and road maintenance facility) and Lā‘ie Convenience Center (a waste and recycling transfer station).

1.2 Project Description

Proposed park improvements include the following:

- Replacement of two existing comfort stations near camping areas A and B in the Kalanai section of the park;
- Construction of a new pavilion, stand-alone pot-washing station and rinsing shower; and,
- Upgrades to the park’s existing individual wastewater system.
- New group camp site

Specific scope of work details (construction plans) are not available at this time, but the proposed improvements will require ground disturbance (i.e., subsurface excavation) (see Figure 4 for lateral limits of proposed improvements).

1.3 Document Purpose and Regulatory Context

The objectives of this ALRFI are the following: (1) documentation and description of the parcel’s land-use history in the context of both its traditional Hawaiian character as well as its historic-period changes; (2) identification of any archaeological historic properties or component features in or adjacent to the project area; and (3) providing information relevant to the likelihood of encountering historically-significant cultural deposits (i.e., archaeological historic properties and/or component features) in subsurface context during construction associated with the proposed project.

This ALRFI is not an archaeological inventory survey (AIS), and it is not intended for formal review by the State Historic Preservation Division (SHPD). It may be used, however, to support the project proponent’s consultation with the SHPD in compliance with HRS Chapter 6E-8, Section 106 of the NHPA and/or other state and federal environmental regulations.

1.4 Environmental Setting

1.4.1 Natural Environment

The project parcel is along the windward coast of O‘ahu at the physiographic transition from the wetter coastline (to the south) and the drier north shore. Mean annual rainfall in the project-area environs, for example, is approximately 50 inches (1270 millimeters) (Juvik and Juvik 1997; Giambelluca et al. 2013), which is a moderate amount of precipitation but substantially less than most of the rest of the windward Ko‘olauloa coast.

Elevation in the subject parcel is approximately 10–20 feet (ft.) (3.0–6.1 meters [m]) above mean sea level with high spots represented by stabilized sand dune deposits that were once likely more widespread before they were altered in late historic and modern times.

Hard-rock geology in the project area includes a variety of “surficial deposits” (Sherrod et al. 2007); the inland portion consists of Calcareous reef rock and marine sediments (Qcrs), also known as karst or lithified coral reef dating from the Pleistocene; the near-shoreline consists of Younger dune deposits (Qdy), which correlates generally with Jaucas sand deposits (see below) dating from the Holocene; and Beach deposits (Qbd) along the shoreline (ibid.).

Natural, through-flowing (surface) water, if it ever traversed the project area (and this is unlikely), has been diverted in historic and modern times by plantation agriculture upslope and the establishment of the current state park. The closest natural, or mostly natural, stream flow (Kahawainui Stream) roughly defines the southern boundary of the subject parcel. Another stream drainage (known as Malaekahana on some maps) defines the northern end of Mālaekahana Bay at Makahoa Point.

Soils in the subject parcel are classified primarily as Jaucas sand (JaC) 0 to 15 percent slope with a narrow band of Beaches (or Beach sand [BS]) along the shoreline and Lahaina silty clay (LaC) 7 to 15 percent slope in the northwestern portion (Figure 5) (Foote et al. (1972). Jaucas sand deposits are known throughout O‘ahu to contain traditional Hawaiian sites and human burials. Lahaina silty clay, which is more of upland sediment, is described as “prime farmland if irrigated” (ibid.).

Vegetation in the construction footprint area consists primarily of a central grassy lawn with some landscaping and ornamental plants. Areas of ironwood trees (*Casuarina equisetifolia*) and hau bush (*Hibiscus tiliaceus*) are around the margins of the central grassy area. There are also some niu or coconut palms (*Cocus nucifera*) near the coastline and some scattered ti leaf (kī) plants (*Cordyline fruticose*).

1.4.2 Built Environment

Mālaekahana SRA was initially established with the acquisition of parcels at Kalanai Point in 1976 (Yent 2023).¹ The park was established in 1977 after acquiring the land in 1976. The subject parcel contains a campground with 27 existing campsites each with a maximum capacity of 10 people per site. The campground includes two comfort stations, an entry road, parking lots, water and wastewater treatment utilities and other infrastructure.

¹ Some references (e.g., Yent 2018:50) say the land was acquired in 1977.

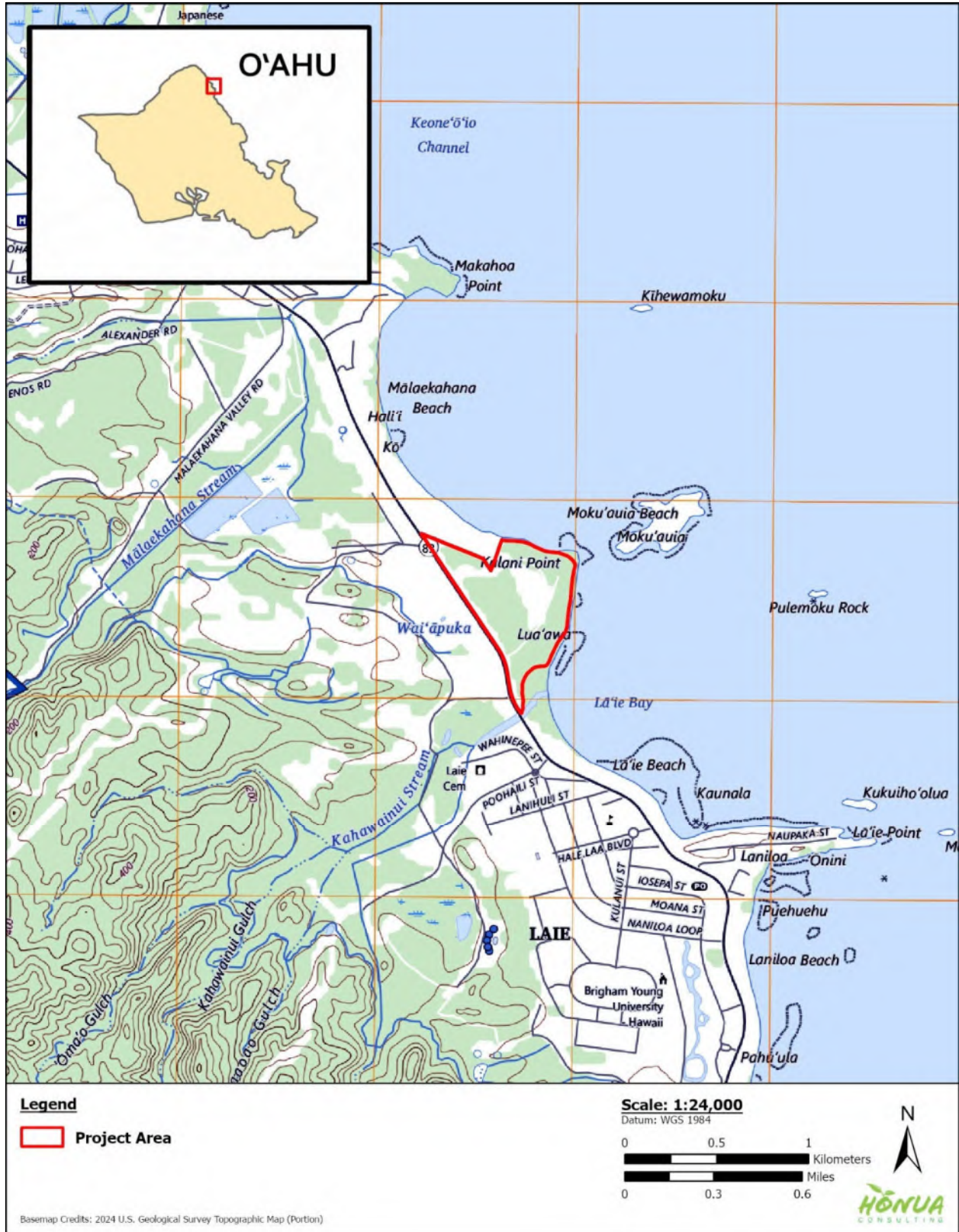


Figure 1. Portion of 2024 USGS Kahuku Quadrangle topographic map showing project area (base map source: USGS online at <http://ngmdb.usgs.gov/topoview>)



Figure 2. Aerial photograph showing location of project area (base image source: Google Earth accessed February 2025)

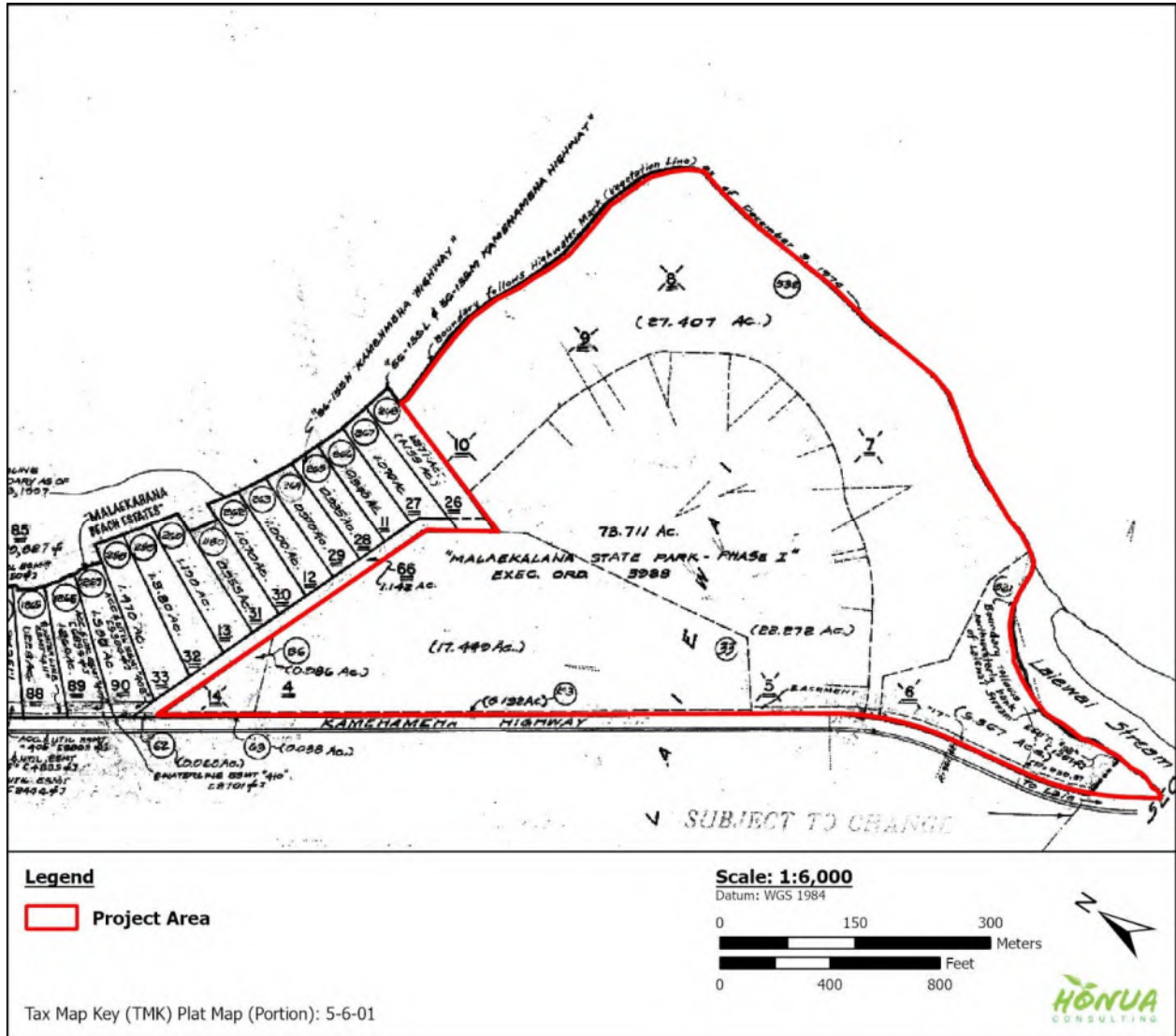


Figure 3. Tax Map Key (TMK) (1) 5-6-001 showing project area (base map source: Hawai'i TMK Service n.d.)



Figure 4. Construction footprint depiction (yellow) within subject parcel (“project area”) (red)

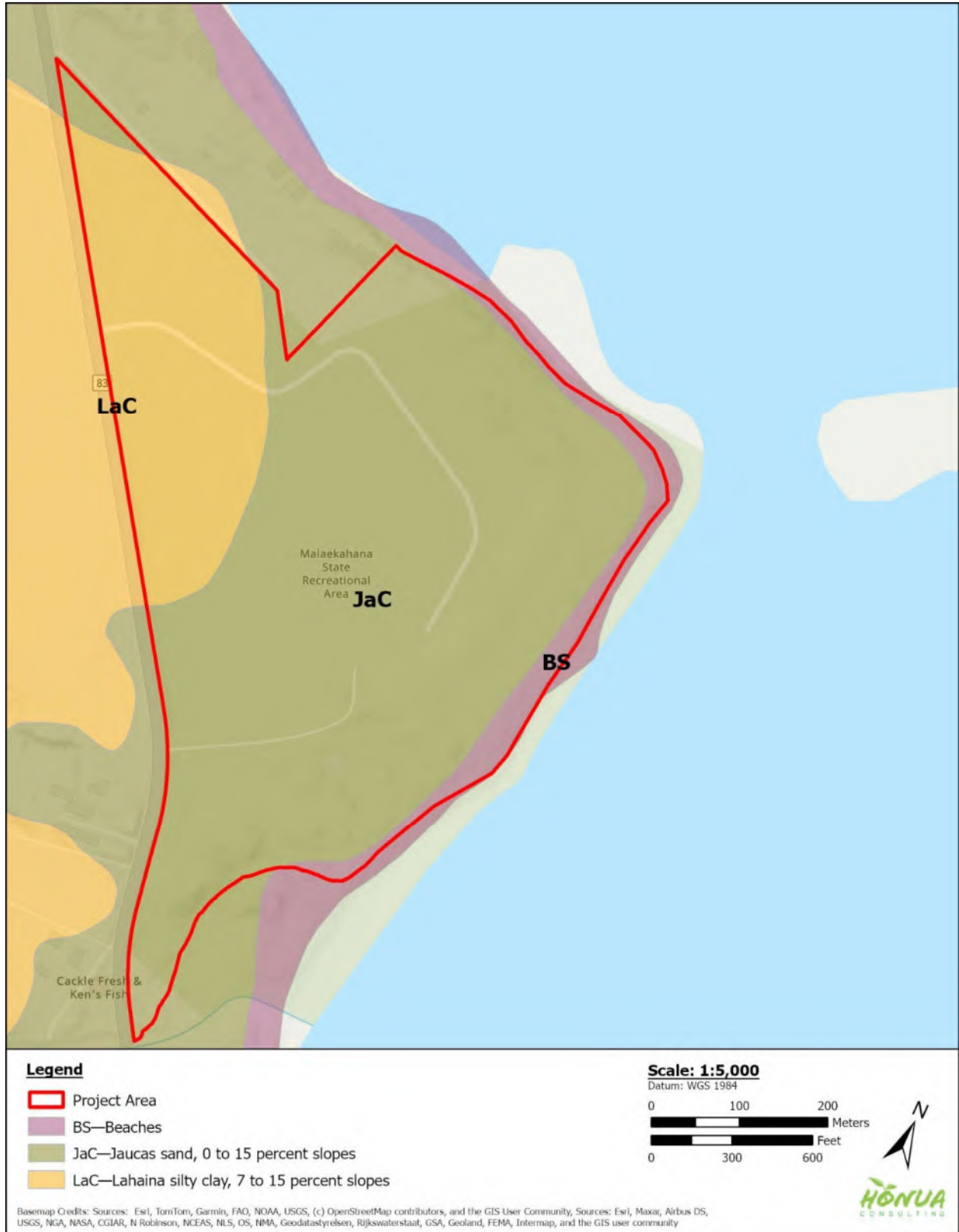


Figure 5. Soil data for the project area (base image from U.S. Department of Agriculture, Natural Resources Conservation Service soil survey at <http://websoilsurvey.sc.gov.usda.gov/>)

Section 2 Cultural and Historical Context

This section is a summary of relevant cultural and historical information related to the types of land uses in and around the project area from pre-Contact, traditional Hawaiian times into the historic period. Note that this section may be expanded if a formal archaeological inventory survey (AIS) or archaeological monitoring is required.

This section is based on the analysis of historical documents, maps and aerial images, as well as secondary sources (i.e., other archaeological and cultural resource management reports), including previous work within the Kalanai section of Mālaekahana SRA. In addition to conducting a records search at the SHPD, as well as the on-line database of the Environmental Review Program (Office of Planning and Sustainable Development), which publishes Environmental Impact Statements (EIS) and Environmental Assessments (EA), and referencing Honua’s proprietary database, we also utilized these on-line sources to obtain cultural, historical and archaeological data:

- OHA’s Papakilo database (<http://papakilodatabase.com/main/main.php>)
- OHA’s Kipuka database (<http://kipukadatabase.com/kipuka/>)
- Bernice P. Bishop Museum archaeological site database (<http://has.bishopmuseum.org/index.asp>)
- Bishop’s Hawaii Ethnological Notes (<http://data.bishopmuseum.org/HEN/browse.php?stype=3>)
- University of Hawai‘i-Mānoa’s digital maps (<http://magis.manoa.hawaii.edu/maps/index.html>)
- DAGS’ State Land Survey (<http://ags.hawaii.gov/survey/map-search/>)
- Waihona ‘Aina website (www.waihona.com)
- Digital newspaper archive “Chronicling America, Historic American Newspapers” (<http://chroniclingamerica.loc.gov/lccn/sn82014681/>)
- Hawai‘i State Archives digital collections (<http://archives1.dags.hawaii.gov/>)
- U.S. Library of Congress digital map collections (<https://www.loc.gov/maps/>)
- USGS Information Service, including digital map collections (<https://nationalmap.gov/historical/index.html>)
- AVA Konohiki’s website (<http://www.avakonohiki.org/>)

2.1 Hawaiian Cultural Landscape

The project area is in the northern portion of the windward O‘ahu district (moku) of Ko‘olauloa, or Ko‘olau Loa (literally, “long Ko‘olau”; Pukui et al. 1974:117), possibly referring to the distance from the coastal areas to the mountain range, which is generally greater in the northern half of the windward coast compared with the southern half of windward O‘ahu, or Ko‘olau Poko or Ko‘olau Poko (“short mountain”; *ibid.*).

Regarding the project area’s ahupua‘a (i.e., the primary traditional land division that functioned as a sustainable community unit) in traditional times, it appears that all or nearly all of it was once part of Mālaekahana but that the extreme southern portion—including the “land of Kalanai” (including Kalanai Point and the current project area), were transferred to Lā‘ie (or Lā‘iewai, as the northern half of greater Lā‘ie Ahupua‘a is known) in the middle to later nineteenth century (we delve into the specifics of this transfer in the Historic Period section below). McAllister’s (1933:156) classic work on the prominent archaeological sites and wahi pana (legendary places) of O‘ahu notes that the “Land known as Kalanai, formerly belonged to Malaekahana, now [in the early 1930s] belongs to Laie.”

Regardless of specifically where the ahupua‘a division is drawn, the current project area in traditional times clearly shared cultural affinities with both Mālaekahana and Lā‘iewai; this pili (close relationship) between the two lands is reflected and expressed in mo‘olelo (oral-historical accounts), place names and shared wahi pana (e.g., the famous Wai‘āpuka Pūnāwai [fresh- or brackish-water pool]).

Pukui et al.’s (1974:143) *Place Names of Hawaii* does not translate Mālaekahana, but does describe it as “. . . the name of the mother of Lā‘ie-i-ka-wai,” part of a famous legendary narrative (see below); this suggests the possibility of a greater antiquity (i.e., parentage) of Mālaekahana, perhaps, compared with neighboring Lā‘iewai (sometimes written Lā‘iekawai) Ahupua‘a. The words “lae” and “kahana” are also interesting to consider since a common usage of lae is point or headland, and kahana can mean drawing of a line or cutting, as in Kalanai Point being the transition between these two lands. Handy and Handy (1972:462), whose work benefited from the translation skills of Mary Kawena Pukui, translate Malaekahana as “way-clear-for-work” (ibid.:462).

Regarding the pili between Mālaekahana and Lā‘ie, Pukui et al. (1974:127) explain that,

Lā‘ie-ka-wai is the traditional birthplace of the sacred princess Lā‘ie-i-ka-wai (Lā‘ie in the water). The princess was taken to the mythical paradise Pali-uli (green cliff) on Hawai‘i. (Beckwith, 1919; HM.) See Mālaekahana, Wai‘āpuka. [referring to their preferred translation of the place name Lā‘ie] *Lit.*, ‘ie leaf. (brackets added).

Pukui and Elbert (1986:190) explain that the word lā‘ie is short for (i.e., a kind of contraction of) lau ‘ie, or the leaf of the ‘ie vine (*Freycinetia arborea*, a forest plant of the uplands).

Kalanai, the point on which the project area is located, is one of a small number of place names in Pukui et al. (1974:74) classified as “Pronunciation and meaning uncertain.” The authors state that this place is the “. . . site of a fishing shrine, as for *kala* and *enenuē*, Lā‘ie, O‘ahu.” McAllister described this fishing shrine (which he designated Site 274) as a ko‘a:

Site known to Hawaiians as a fishing shrine on the land known as Kalanai, which is now included in the division of Laie but formerly belonged to Malaekahana.

The fish brought to this shrine were the *kala* and *enenuē*. Several flat rocks have been placed on end; one is placed flat. Innumerable remains of fish were found about the stones and on the west side of the rocks.

Skeletal remains [here, he has shifted to referring to human skeletal remains] were found on the northwest side at an average depth of 2 feet. The body was partially flexed. The upper portion of the body was lying on its back, with the head thrown back so that the mandible was uppermost. The legs had been flexed. The entire length of the burial, from head to knee, was 4 feet. The maximum length of the right femur was 17 inches. The head was lying toward the south, and the lower portion was toward the sea.

The archaeological implications of McAllister’s (1933) observation of human skeletal remains at the ko‘a at Kalanai Point—which is part of the subject parcel but not within the construction footprint—are discussed in the next main section (see Section 3 – Archaeological Context).

Fronting Kalanai Point is the small offshore island named Moku‘auia, translated by Pukui et al. (1974:155) as “island to one side,” or, according to Vogeler et al. (2011), “island that was cast aside.” Pukui et al. (ibid.) add that this islet was, in Hawaiian tradition, “part of the body of a lizard,” with lizard meaning a mo‘o or mo‘o wahine (a common type of supernatural water spirit throughout the Hawaiian Islands), related to the Laniloa mo‘olelo.

South of the subject parcel, Laniloa Point, the prominent rocky point bisecting Lā‘ie into Lā‘iewai and Lā‘iemalo‘o, is famously associated with a mo‘olelo about two demi-gods “Kana and Nīheu [who] chopped up the body of a mo‘o and threw the pieces into the sea,” these pieces being the five named islets (including Moku‘auia) (Pukui et al. 1974:129).

North of the subject parcel, at the far (north) end of Mālaekahana Bay, the other prominent point is known as Makahoa (“friendly point”) (ibid.:140).

Handy (Handy 1940; Handy and Handy 1972), whose pioneering work in the 1930s sought to understand Hawai‘i’s traditional land use patterns by studying its subsistence horticulturalists, wrote at length about Lā‘ie but had far less to say about Mālaekahana. Some relevant excerpts are reproduced below:

[Referring to Lā‘ie, and continuing a narrative of the lands of Ko‘olau Loa from the south heading north] Here we reach a much more complex land area, and one not so easily compared with the Kahana-Punalu‘u type. It is a broken area of coastal dunes and level lands, with stretches of elevated coral to shoreward and inland, intersected by many small branching streams between rough ridges that far down to the sea. A number of these streams join to form La‘ie (‘ie ‘ie-leaf) Stream which flows into La‘ie Bay, the largest bay north of Kahana but a more tumultuous one, framed as it is to the southeast by Laniloa (La‘ie Point), the long jutting strip of elevated coral which acts as a resounding board for the great breakers piling in to the curve of the bay. (Handy and Handy 1972:461, brackets added)

The comparatively flat land between the rough hills and the bay (which is famous as a fishing area and for catching sea turtles even today [1930s]) was anciently divided into numerous districts and was thoroughly cultivated. In 1935 Kekuku, a 75-year-old *kama‘aina* of this place, pointed out an area more than 60 acres in extent as having formerly been the largest single wet-taro area in La‘ie *ahupua‘a*, on land owned by his family for generations. It lies back of the present Mormon Temple, and was watered by springs, hence known as Ka-puna (The-spring). (ibid., brackets added)

These wet-taro lands behind the Mormon Temple would have been at least 0.5 miles south-southwest of the southern end of the current project area; and at least 0.5 miles inland (due west) from the shoreline at Lā‘ie Bay.

The authors go on to describe overgrown “stone-faced terraces” in the mauka reaches of “Koloa (Wild-duck) Stream” nearer to Hau‘ula, here referring to the southern end of Lā‘ie, which was also known as Lā‘ie Malo‘o (or Lā‘iemalo‘o) (or “dry Lā‘ie,” according to Pukui et al. 1974:128). Elsewhere in Handy and Handy (1972:271), the stretch from Lā‘ie down through the rest of the Ko‘olau Loa district is described as the main wet-taro region.

Lā‘ie was also described (ibid.:286) as a well-known locale where “sea turtles . . . laid their eggs in the sand of the La‘ie beach.”

Closer to the current project area environs, Handy's (1940:89) earlier writings describe traditional cultivation areas:

Kahooleinapea [probably Kaho'oleināpe'a] is the first stream reached after leaving the ahupua'a of Malaekahana. Here terraces are still [in the 1930s] in use. The old terrace area named Waieli, along the lower reaches of Kahawainui Stream, is now under [sugar] cane cultivation; it was once watered from a spring.

Mālaekahana, grouped with the smaller ahupua'a of Keana ("the cave") to the north, is only briefly described, and treated as a far less significant locale:²

These two small *ahupua'a* intervening between La'ie and Kahuku (the northernmost tip of O'ahu) show much the same pattern, in miniature, of dune coasts, elevated coral, and broken level land seaward from the hills. Each has a small stream. There were formerly some irrigated terraces in Malaekahana . . . (Handy and Handy 1972:462)

The authors included Mālaekahana as part of one of O'ahu's "areas of dearth," or periodic famine:

A second area extended from La'ie, at the northern tip, westward to Waialua. Normally La'ie had ample wet taro, but the streams and springs gave scant water in periods of drought. From La'ie northwestward the mountains are low and precipitation is much less than it is to the southeast where the windward coast is flanked by the high Ko'olau range.

Known heiau (traditional temples) from the area are both from Lā'iewai: there is Nioi Heiau ("McAllister Site" 281), mauka of the Mormon Temple; and Mo'ohikili Heiau ("McAllister Site" 283), mauka of Laniloa but makai of the Mormon Temple (McAllister 1933; Sterling and Summers 1978). These are some distance from the subject parcel. It seems unlikely that Mālaekahana lacked formal heiau; its temples were probably destroyed by commercial sugar cane agriculture starting in the late 1800s.

2.1.1 Other Mo'olelo (Oral-historical Accounts)

The most famous mo'olelo of Lā'ie and Mālaekahana have to do with the exploits of twin girls with supernatural associations. Pukui's (1983:209) *Ōlelo No'eau, Hawaiian Proverbs & Poetical Sayings* has the following entry for Lā'ie:

Lā'ie i ka 'ēheu o na manu (*Lā'ie, borne on the wings of birds*)

Lā'ie is a gathering place for people. Twin girls were born at a place now bearing the name of Lā'ie, O'ahu. The older twin, Lā'iekawai, was reared by her grandmother, Waka, and was said to rest on the wings of birds. The younger, Lā'ielohelohe, was taken by a *kahuna* to rear.

Paki (1972:52) places the birthplace of these twins near the current Lā'ie Hawai'i Temple of the Church of Jesus Christ of Latter-day Saints ("Mormons"), some 0.5 miles southwest and mauka of the subject project area.

² Interestingly, Mālaekahana does not even make it into Handy and Handy's (1972) Index, although Lā'ie has nearly a dozen entries.

It is interesting to note that other historical accounts describe the wahi pana (legendary place) of Wai‘āpuka, a locally-famous brackish pool just mauka of the current highway, as where Waka—described as a mo‘o wahine, or supernatural water spirit—hid Lā‘iekawai until the young girl reached maturity.³ Wai‘āpuka, included as “McAllister Site” 275, has been described as once being part of Mālaekahana but later as part of Lā‘ie. Historical topographic maps (see Figure 9 [1930] and Figures 10 [1952], below) actually show Wai‘āpuka as a survey datum along the current version of the ahupua‘a boundary between these two lands.

Lā‘ie is also described as a traditional pu‘uhonua, or a place of refuge in times of trouble (McAllister, quoted in Sterling and Summers 1978:156). The specific location in Lā‘ie of its pu‘uhonua was reportedly along its Kahana (south) boundary; it was known as “Pa-paa-koko,” or “Fence that held the blood.” (ibid.).

McAllister (1933), citing local ethnographic information as well as Rice’s (1923) *Hawaiian Legends*, recounted an unusual story that has aspects of legend but also possibly proto-history. The account centers around a powerful, local kahuna (i.e., a spiritual expert or practitioner, oftentimes translated in Western texts as “priest”) of Mālaekahana named Manuwahi. As described in the archaeological section (see Section 3.1.1), Manuwahi’s house site (designated “McAllister Site” 273) is within the northwestern portion of the subject parcel. The legend or proto-history is interesting because it claims Mālaekahana was never conquered by Kamehameha the Great, which is quite a claim, if true. At the very least, it suggests the land of Malaekahana may have been something of an outlier where its inhabitants did not immediately fall into line with the new regime from Hawai‘i Island:⁴

The site was pointed out by a descendant of Manuwahi, Kahiona Apuakehau, a very old Hawaiian living in Laie. The Hawaiians are still proud that the district of Malaekahana was never conquered by Kamehameha I. This is not recorded in Hawaiian history so far as I know. (McAllister 1933).

Other mo‘olelo associated with these ahupua‘a, which are not recounted here in detail, include narratives about Manōnihokahi (shark with one tooth) and other akua (supernatural beings) such as Kaunihokahi; both of these are associated with the area’s many subterranean passages, holes and cavities that characterize karstic sedimentary environments in this, and other parts, of O‘ahu (e.g., ‘Ewa). In addition to the mo‘o at Laniloa (see above), another mo‘o named Kalamainu‘u, considered to be an ‘aumakua (personal or family god) in some accounts, was active along the rocky shoreline at Makaleha, Lā‘ie. The famous travels of Hi‘iaka-i-ka-poli-o-Pele (Hi‘iaka) also included a stop at Laniloa and a poetical recitation of its beauty (Ho‘oulumāhie 2006).

2.1.2 Project Area – Hawaiian Cultural Landscape

Multiple lines of evidence, including some of the accounts cited above and below in the archaeological context section (see Section 3.0), as well as the analysis of historical maps and

³ David Malo (1951:82–3) considered Waka, along with others, to be a type of mo‘o wahine that “[t]he female chiefs worshipped as gods.” Also, there are other detailed accounts of this Wai‘āpuka/Lāieikawai/Lāielohelohe connection and narrative (see, e.g., Beckwith 1918; Beckwith 1970:526) that are interesting but beyond the scope of this report. Curiously, Kamakau (1992:19), in his narrative on ‘Umi-a-Liloa, the first paramount chief to unite the districts of Hawai‘i Island, mentions that one of the wives of Pi‘ilani, the paramount chief of Maui, was named “La‘ie-lohelohe-i-ka-wai,” seemingly combining the legendary twin sisters.

⁴ Other places on O‘ahu, such as parts of Wai‘anae, also share this reputation in some historical accounts.

aerial photographs (see Section 2.4), suggest the subject parcel was characterized by stabilized sand dunes just back of the shoreline with more level, but largely sandy terrain behind it. Portions of the northwestern part of the subject parcel appear to have been amenable to traditional Hawaiian settlement of a more permanent nature since this area was not dominated by sand deposits. Sand deposits, since they were suitable neither for permanent house sites nor agricultural pursuits, were commonly used by Hawaiians in pre-Contact to early historic times for human burials as well as more ephemeral (temporary) shelters for fishermen and others accessing the shoreline for subsistence purposes.

In short, most of the subject parcel—including the “construction footprint,” fell into this latter category of land use by Hawaiians practicing a traditional lifestyle. The northwestern portion—with its terrigenous (silty clay) substrate, appears to have been the location of a traditional Hawaiian house site in the proto-historic (i.e., late eighteenth century) period.

2.2 Early Historic Period

As explained above, Lā‘ie and Mālaekahana share a close relationship; the subject parcel and construction footprint, centered on Kalanai Point, may be considered the southern end of the traditional land of Mālaekahana or even a kind of boundary between the two. No systematic effort is made in the rest of the Historic Period sections below to separate out these two, closely linked ahupua‘a, although the discussion of Lā‘ie focuses on its northern half, known as Lā‘iewai, wherever possible. Specific statements about the subject parcel (i.e., Kalanai) are presented where the information is available.

The earliest written observations by British mariners who passed by, but did not make land, are somewhat conflicting as to their overall impression of the northeast corner of O‘ahu, where the north shore and windward side meet. In 1779, Captain James Cook’s officers on the H.M.S. *Resolution* were full of praise for the “rich cultivated valleys, which the whole face of country displayed” (McAllister 1933:153 quoting Lieutenant James King). They commented on the “many large Villages and extensive plantations” (Beaglehole 1967:572) quoting Captain Charles Clerk. About 15 years later, in 1794, Captain George Vancouver noted that “the country did not appear in so flourishing a state, nor to be so numerously inhabited,” chalking it up to the “constant hostilities that had existed since that period” (Vancouver 1798, Vol. 3:71), referring, of course, to the inter-island warfare between Maui and Hawai‘i Island over the control of O‘ahu. Unmentioned by Vancouver, however, must have also been the scourge of Old World diseases introduced to the Hawaiian people since 1778.

John Papa ‘Ī‘i (1959:70) recounted how Kamehameha I divided the lands of O‘ahu after conquering the island, and gave “the two Laie’s to Kalaimamahu, a half-brother to Kamehameha.”

According to Yent’s (2023:14) reading of the early Christian missionary Levi Chamberlain’s demographic observations from the 1820s (where he frequently reported the number of “scholars” actively learning to read in a given locale), there was a settlement at Mālaekahana which “was separate from Lā‘ie and Kahuku but there was little information recorded specifically for Mālaekahana” other than being “pleased with the appearance of the scholars” there (Chamberlain 1956:35).

McElroy and Duhaylonsod (2017:9) present some population estimates for greater Lā‘ie, that is, combining Lā‘iewai and Lā‘iemolo‘o, citing observations by Chamberlain as well as Maly and Rosendahl (1995):

His [Chamberlain's] journal noted that the school in Lā'ie had 60 students and that the main teacher was named Peka. In other missionary records, "missionary censuses show a Lā'ie population of 452 in 1831, out of a total Koolauloa population of 2891" (Maly and Rosendahl 1995:19) (brackets added)

In 1835, the reported population in Lā'ie was down (from 452 in 1831) to 375 (Vogeler et al. 2011:34) and, commenting on a visit to the Ko'olauloa District in 1838, an observer noted the "Much taro and lies waste, because the diminished population of the district does not require its cultivation" (E.O. Hall quoted in McAllister 1933:153).

2.2.1 Māhele 'Āina (Mid-1800s)

Beginning in the 1840s, the concept of private property was introduced to Hawai'i through formation of the Board of Commissioners to Quiet Land Titles, and the adoption of the Māhele (the division of Hawaiian lands), also known as the Māhele 'Āina (i.e., "to divide, cut up or apportion the land"). In 1845, Kamehameha III waived his right to full authority over the land, portioning out land for his personal use (Crown lands) and then dividing the rest into government land, land for the ali'i (chiefs) and konohiki (land overseers or managers), and land for commoners (kuleana land) (Alexander 1891; Board of Commissioners 1929; Moffat and Fitzpatrick 1995). Following thereafter, Land Commission Awards (LCAs) were awarded to commoners as kuleana parcels for fee ownership, and also to some higher-status individuals.

In many cases, LCA documents (which typically include witness testimony from both the claimant as well as neighbors, and also simple survey [sketch] maps) provide data on who resided on the land, how the land was used and/or improved (e.g., house sites, gardening or cultivation, fishponds and irrigation ditches, animal-grazing or pasture, etc.) and other cultural and natural resources in and near a given parcel. In general, LCAs awarded to high chiefs or politically well-connected individuals did not have to supply such detailed parcel information. The maka'āinana (commoners) fared the worst, as approximately 8,000 individuals received about 2.5 acres each, which is less than one percent of the total lands in the Hawaiian archipelago (Van Dyke 2008).

In 1848, the lands of Mālaekahana encompassing 3,280 acres were awarded to Ali'i Nui (High Chief) Ane Keohokālole, mother of King Kalākaua and Queen Lili'uokalani, as a portion, 'āpana, of LCA 8452 (Royal Patent RP] 5616). Several small (approximately 1.0 acre or less) were awarded in Mālaekahana a few hundred meters mauka of Kamehameha Highway west of the southern end of the bay. These LCA to Kakau (8355 in two 'āpana), Kahawaii (8537, also in two 'āpana) and Paukoa (7727) are in a cluster under what is now grasslands (that were completely under commercial sugar cane in the late nineteenth to early-middle twentieth century, but would have once represented a small kauhale (cluster of houses) with associated gardens. Another LCA to Puu (3870) is located further mauka. The small plots close to Kamehameha Highway are described in Māhele records as containing house lots and 'uala (sweet potatoes), mai'a (bananas) and wauke (paper mulberry for making kapa).

The adjacent lands of Lā'iewai and Lā'iemalo'o, combined into the 6,194-acre Lā'ie Ahupua'a, were awarded to King William C. Lunalilo (the sixth monarch of the Hawaiian Kingdom) as a portion of LCA 8559-B when he was only thirteen years old (Moffat et al. 2011:8). The *Indices of Awards* (Board of Commissioners 1929) lists about 73 LCAs for Lā'ie. Vogeler et al.'s (2011) analysis suggests the number is a bit lower. They write:

Approximately 65 *kuleana* were awarded to native tenants in Lā‘ie. Over half of the claims included house lots and associated habitation features. Most of the claims included *lo‘i* (taro patches) and many had *kula* (area for dryland crops or pasture) lands. Also within the claims were scattered *‘āpana* (lots) in the mountains, fisheries, fishponds, *muliwai*, (river mouth) and even a place for drying *kapa* (tapa cloth) in Hau‘ula. Historic influences can be seen in claims listing horse pastures and *pā* (a fenced piece of land).

Other parcels awarded within Lā‘ie Ahupua‘a, however, indicate that much of the lowlands in the mid-1800s was being utilized for [traditional Hawaiian] subsistence gardening, including many *lo‘i* irrigated by *‘auwai* (ditch) systems. With taro being the dominant crop, the *lo‘i* were interspersed with the *kula* lands fringing the foothills. Other crops described in Land Commission documents included melon and watermelon, coffee, gourd, *‘awa* (kava), and *weuweu* (grasses). [Kuleana parcels] were clustered around Kahawainui Stream and its many tributaries, the lower reaches of Kōloa Stream, and the lower reaches of ‘A‘akaki‘i Gulch. (brackets added)

A map graphic prepared by Vogeler et al. (2011:15), but not reproduced or adapted here, shows the location of LCAs in Lā‘ie. Their presentation of the data shows the nearest kuleana (LCA) parcel to the subject parcel is—similar to the Mālaekahana pattern—a few hundred meters mauka in the vicinity of Kamehameha Highway. The vast majority of LCA parcels in Lā‘ie, however, are closer to 0.5 miles inland and upcountry from the shoreline.

The subject parcel and construction footprint do not contain any LCAs.

2.3 Mid-1800s to Late Historic Period

An interesting piece of partially conflicting information concerns an approximately 300-acre portion of land, including nearly all of the subject parcel, that some records appear to suggest was originally part of Mālaekahana but was transferred to Lā‘ie in the Historic Period (see, e.g., McAllister 1933:156; Sterling and Summers 1978:154; and see Figure 7, below). Yent (2023:15) describes a series of land purchases that seem to represent the parcel in question:

In 1861, Henry H. Howland purchased 298.5 acres of land in Lā‘iewai from Lunalilo but by 1863, Howland had sold this land to Robert Moffitt who then transferred the property to Charles Hopkins. Hopkins created Kahuku Ranch with Lā‘ie property as well as other parcels in Mālaekahana and Kahuku. In 1872, Hopkins sold the ranch to Herman A. Widemann who then sold it to Julius L. Richardson in 1874. James Campbell purchased the ranch of 15,000 acres in 1876. In 1889, Kahuku Ranch was described as 23,608 acres extending 14 miles along the coast with a valuable fishery attached to the property (Bowser 1880:409).

Large ungulate (particularly cattle) grazing and free-ranging caused great environmental damage to the traditional cultural landscape, to the resources Hawaiians had always depended on and to their homesteads and gardens. Wilcox’s (1975:16) history of the Kahuku Sugar Mill includes native complaints these changes:

The herds and flocks ran over the small homesteads scattered here and there through the land, stripping it of verdure. The Hawaiians asked in vain for protection of their

trees and vegetable patches. They wrote to the missionary, Emerson, who urged them to build fences and appealed to authorities on their behalf asking that government pounds be set up to enforce newly established trespass laws. At the same time the hala forests began to disappear, the Hawaiian population also began to disappear. Once well-populated, Kahuku became a lonely sheep and cattle ranch, famous for its prize English breeds and its imported water fowl.

The shift from ranching to commercial agriculture, in particular, sugar cane cultivation, required significantly more infrastructure and capital investment; these increased investments, which began in the 1880s into the 1890s, included extensive water storage and distribution (irrigation) capabilities, railways to transport crops, and so on. Yent (2023:15) explains:

By the 1880s, the economy of the region was shifting from ranching to sugar. Commercial sugarcane began in the area when James Castle leased land from Campbell in 1890 and started the Kahuku Plantation (Wilcox 1996:110). The plantation consisted of only 2,500 acres in cane with challenges due to the difficult land, soil, and water (ibid). Campbell leased about 300 acres to Benjamin Dillingham in 1899 who subleased to the Oahu Railway and Land Company in 1890. This allowed construction of the railroad that transported sugar from the southern extent in Kahana Valley around Ka‘ena Point to Honolulu.

This railroad was called the Koolau Railway Company, and it eventually connected the mill at Kahuku with Kahana Bay to the south. The railroad, which once ran roughly along or next to the current Kamehameha Highway ROW, was apparently abandoned circa 1972 (Wilcox 1875:37).

According to Yent (ibid.), “[i]n addition to sugar and ranching, some pineapple was being grown in the Mālaekahana area in the 1920s and 1930s.”

Sugarcane cultivation ended in the Lā‘ie-Kahuku area by the 1970s and some agricultural lands were transitioned into truck farming. The lands around Mālaekahana Bay became a popular location for beach houses with people leasing the land from the James Campbell Estate (ibid.)

As depicted in Figure 7 (below), the subject parcel was neither within the general limits of commercial sugar cane operations nor in the general limits of grazing lands, at least according to this 1902 map; this placement of the subject parcel in land not considered economically useful in the early 1900s reflects its predominantly sand-dune terrain, which generally does not contain vegetation that is attractive to ungulates (e.g., grasses tend to be saline) and obviously is not ideal for agriculture.

Although the area is not known to have hosted any permanent military installations, it likely formed part of the broader defensive landscape of O‘ahu during World War II. Following the Attack on Pearl Harbor, the island’s coastlines—including Ko‘olauloa region—were monitored for potential enemy landings, and areas like Mālaekahana may have been used intermittently for coastal observation, patrols, or temporary training exercises. While there is no well-documented evidence of bunkers, airfields, or fixed fortifications within the park itself, its open shoreline and strategic location between Kahuku and Lā‘ie suggest it could have supported low-level, short-term military activity as part of O‘ahu’s wider wartime defense network.

Mālaekahana SRA was initially established with the acquisition of parcels at Kalanai Point in 1976. The park was then expanded in 1980 with the acquisition of 19 parcels encompassing 36 acres from Campbell Estate at the Kahuku end of the bay (Yent 2023:5)

2.4 A Sampling of Historical Maps and Aerial Images

Figure 6, a portion of 1884 map of Lā‘ie Bay, which was primarily concerned with mapping the depth and character of the ocean floor in the bay for navigation purposes, nonetheless included a few structures and features along the shoreline and just back of it. The subject parcel is labeled “level grass land” with no features. Wai‘āpuka, interesting, is labeled “Laiekawai” on this map, referring to its famous mo‘olelo. The “Mormon Settlement” to the south is depicted along with boat houses and other, likely residential structures along the shoreline in Lā‘ie. The houses labeled “Gentile Houses” southwest of the subject parcel presumably refer to non-Mormons at this time.

Figure 7, a portion of 1902 map created in the early years of the Territory of Hawai‘i, depicted the subject parcel as separate from the “approximate area of sugar plantation” and also outside of the “approximate area of grazing lands.” In general, this depiction seems consistent with what is known about the subject parcel, dominated as it is by sand dune landforms, which are not ideal for either of these commercial uses. It is worth stating, as depicted in aerial photographs below dating from the 1960s, that the northwest portion of the subject parcel—where silty clay rather than sand predominates—was clearly commercially farmed.

Figure 8, a portion of 1913 topographic map, shows the Koolau Railway tracks and an early version of the highway running past the subject parcel connecting Kahuku with the rest of the windward coast to the south. Vegetation symbols representing plantation crops on this well-known map series extend into the northwest portion of the subject parcel, as discussed above. The extreme northwestern corner of this area also appears to depict a small, fenced off area with one or two structures, possibly representing a residential plot. There appears to be a windbreak (linear planting of trees) protecting the crops directly west of it. Dunes around the shoreline of Kalanai Point are also depicted; interestingly, symbols for marshes or wetlands appear to be interspersed with the dunes.

Figure 9, a portion of 1930 topographic map, shows an unimproved road arcing around the subject parcel from its southwestern end; this road would have branched off the (then completed) Kamehameha Highway, and followed around behind and in the lee of the shoreline dunes. One or two structures appear to be depicted from Kalani Point back down to the south, within the subject parcel. A complex network of plantation-irrigation infrastructure is depicted throughout the mauka lands west of Kamehameha Highway.

Figure 10, a portion of 1952 topographic map, shows a few more structures, presumably residential, around the shoreline of the subject parcel. Green swaths may represent more windbreak plantings to protect inland areas, which were still under commercial agriculture.

Figure 11 and Figure 12, portions of 1962 and 1965 aerial photographs, respectively, clearly depict the active agricultural use of the northwestern portion of the subject parcel. The arcing road along the southeastern portion of the subject parcel appears to have been built out with a windbreak of trees.

Figure 13, a portion of 1983 topographic map, shows the establishment of the Kalanai section of the Mālaekahana SRA, which was created circa 1976. One major change to the subject parcel

depicted in this map is the new roadway into it from the northwest corner, and the abandonment of the previous southern roadway.

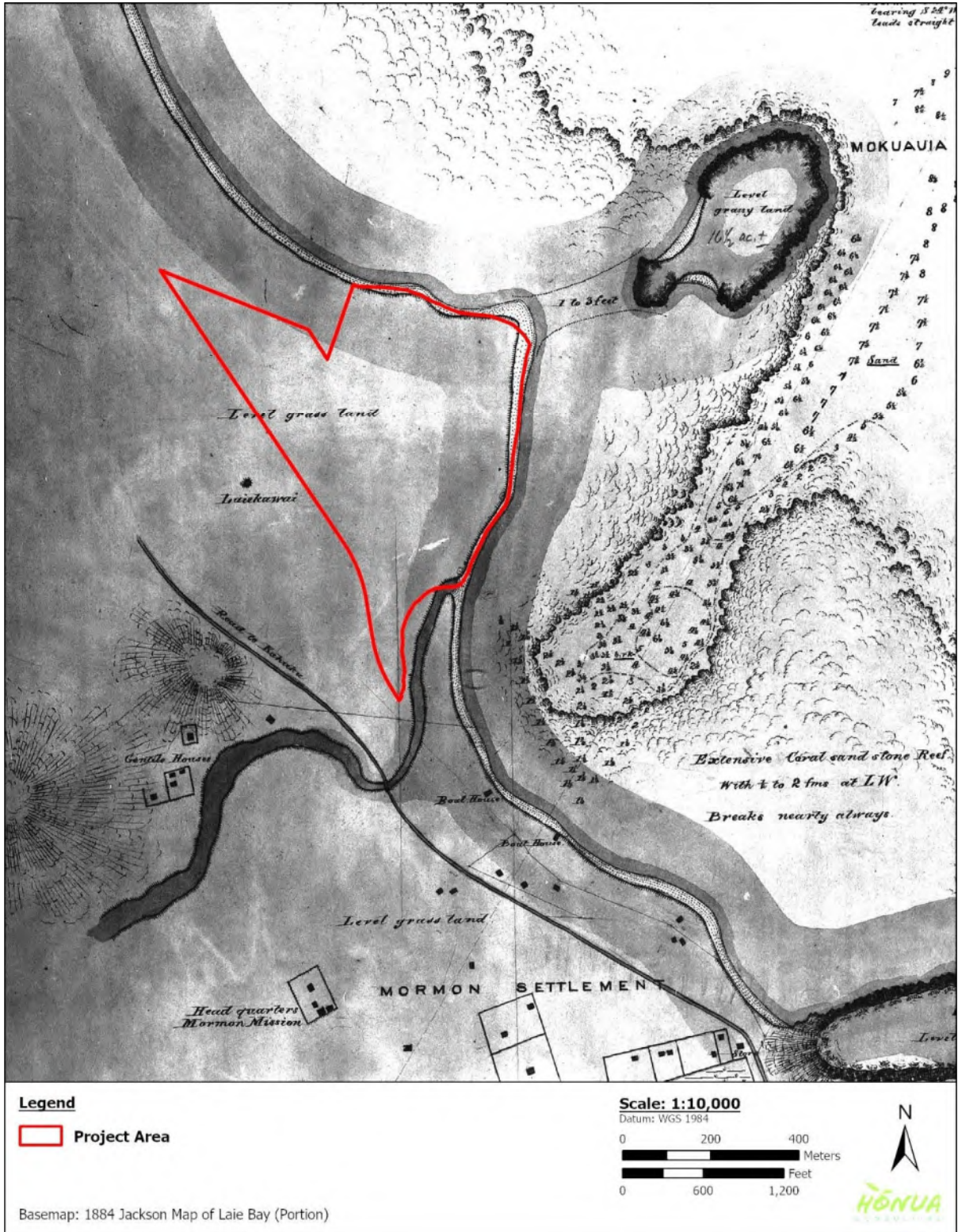


Figure 6. Detail of 1884 Jackson map showing project-area location (Registered Map 1347) (base map source: DAGS Land Survey Map Search, <http://ags.hawaii.gov/survey/map-search/>)

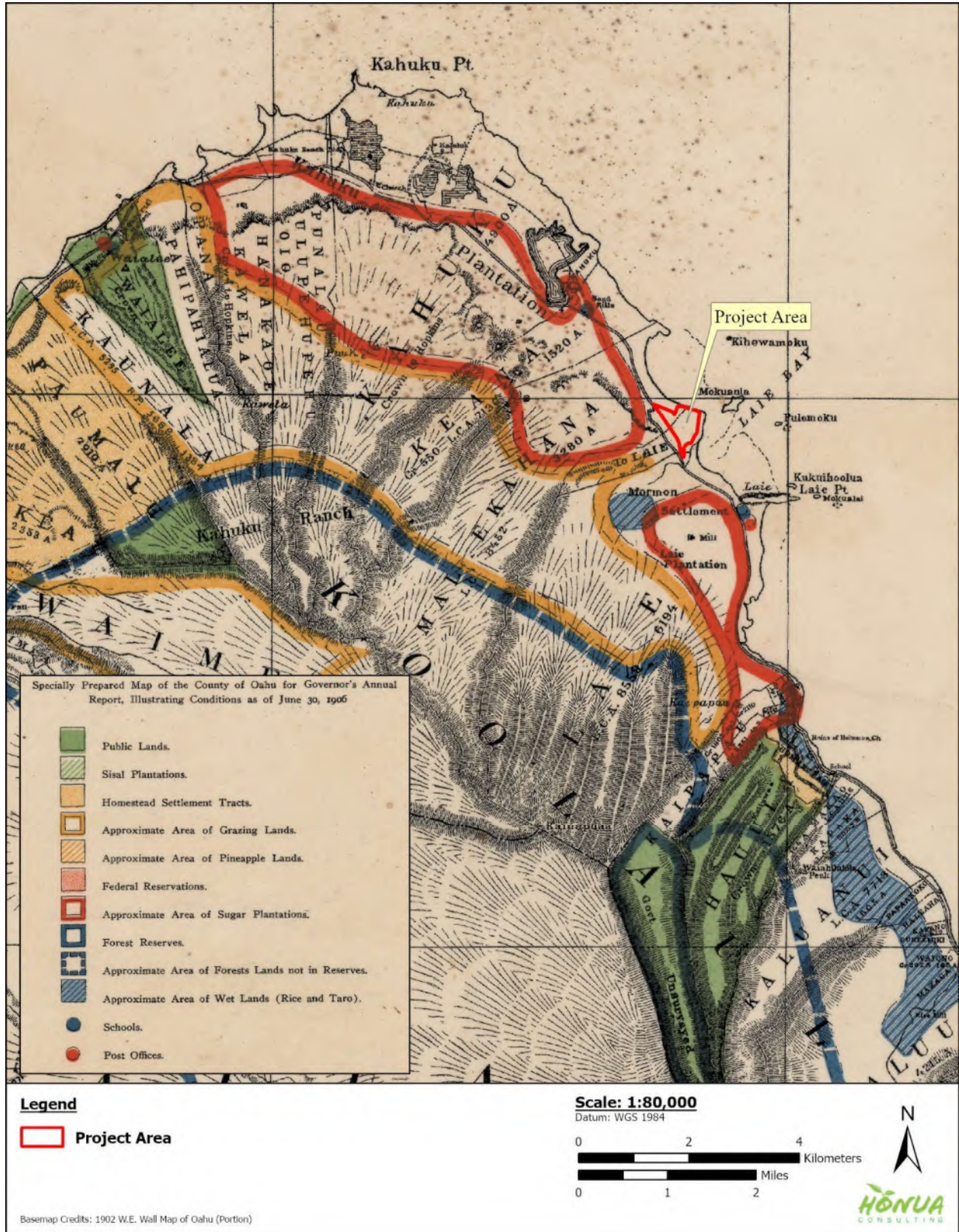


Figure 7. Portion of 1902 Wall map showing project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, <http://magis.manoa.hawaii.edu/maps/index.html>)

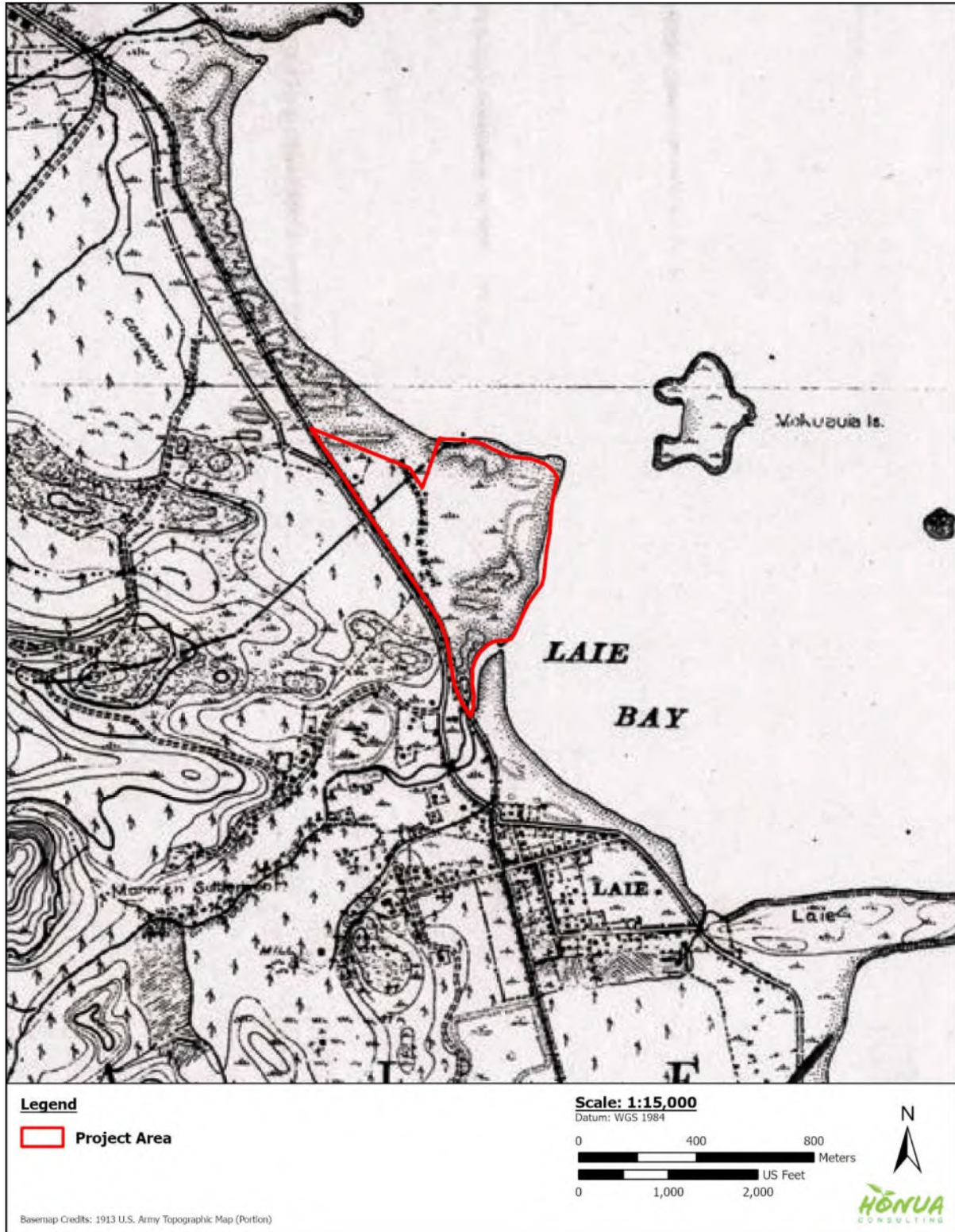


Figure 8. Portion of 1913 U.S. Army topographic map with project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, <http://magis.manoa.hawaii.edu/maps/index.html>)

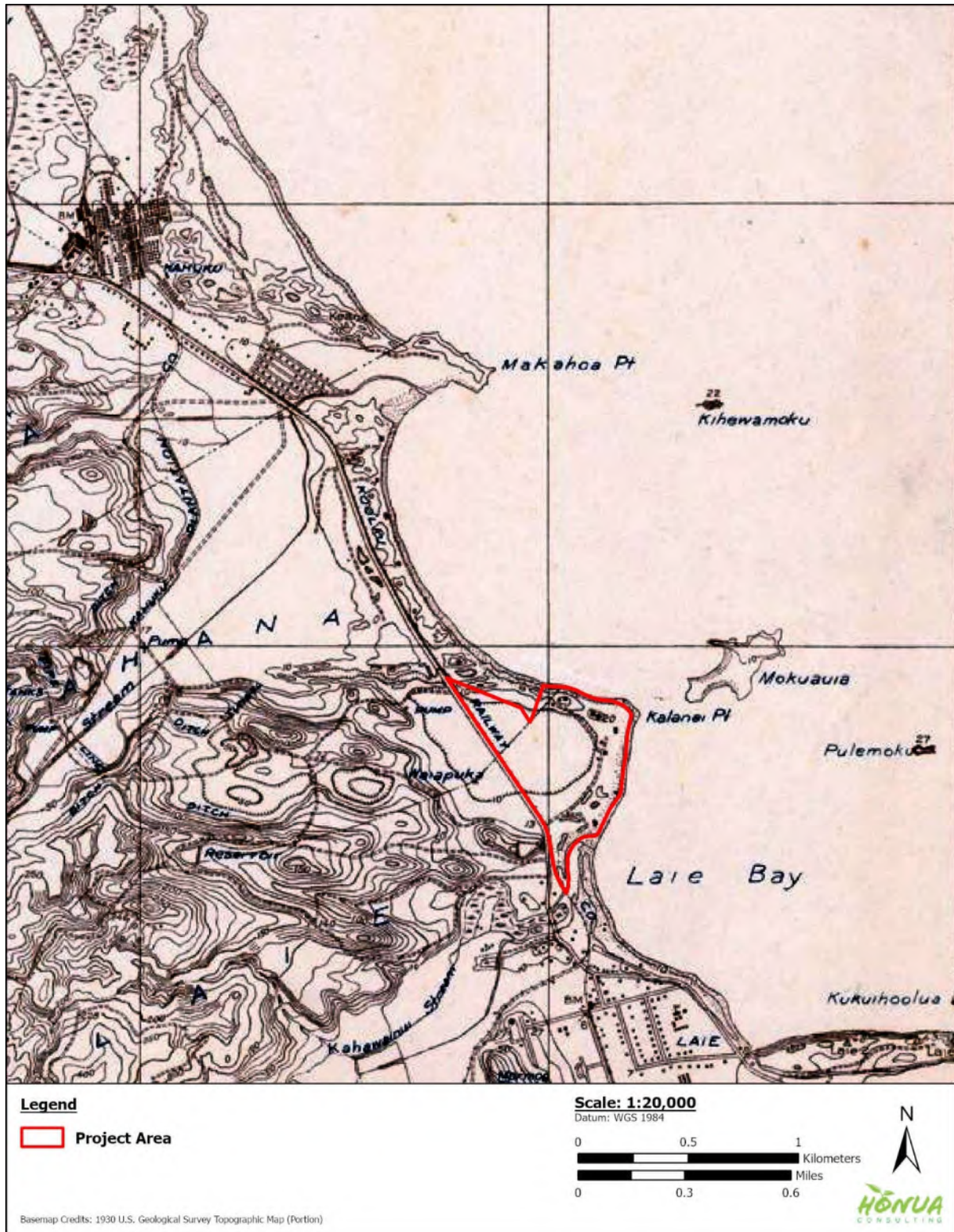


Figure 9. Portion of 1930 USGS topographic map with project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, <http://magis.manoa.hawaii.edu/maps/index.html>)



Figure 10. Portion of 1952 USGS topographic map with project-area location (base map source: University of Hawai‘i-Mānoa’s digital maps, <http://magis.manoa.hawaii.edu/maps/index.html>)



Figure 11. Portion of 1962 aerial photograph including project area (base map source: University of Hawai‘i-Mānoa’s digital maps, <http://magis.manoa.hawaii.edu/maps/index.html>)



Figure 12. Portion of 1965 aerial photograph including project area (base map source: University of Hawai‘i-Mānoa’s digital maps, <http://magis.manoa.hawaii.edu/maps/index.html>)

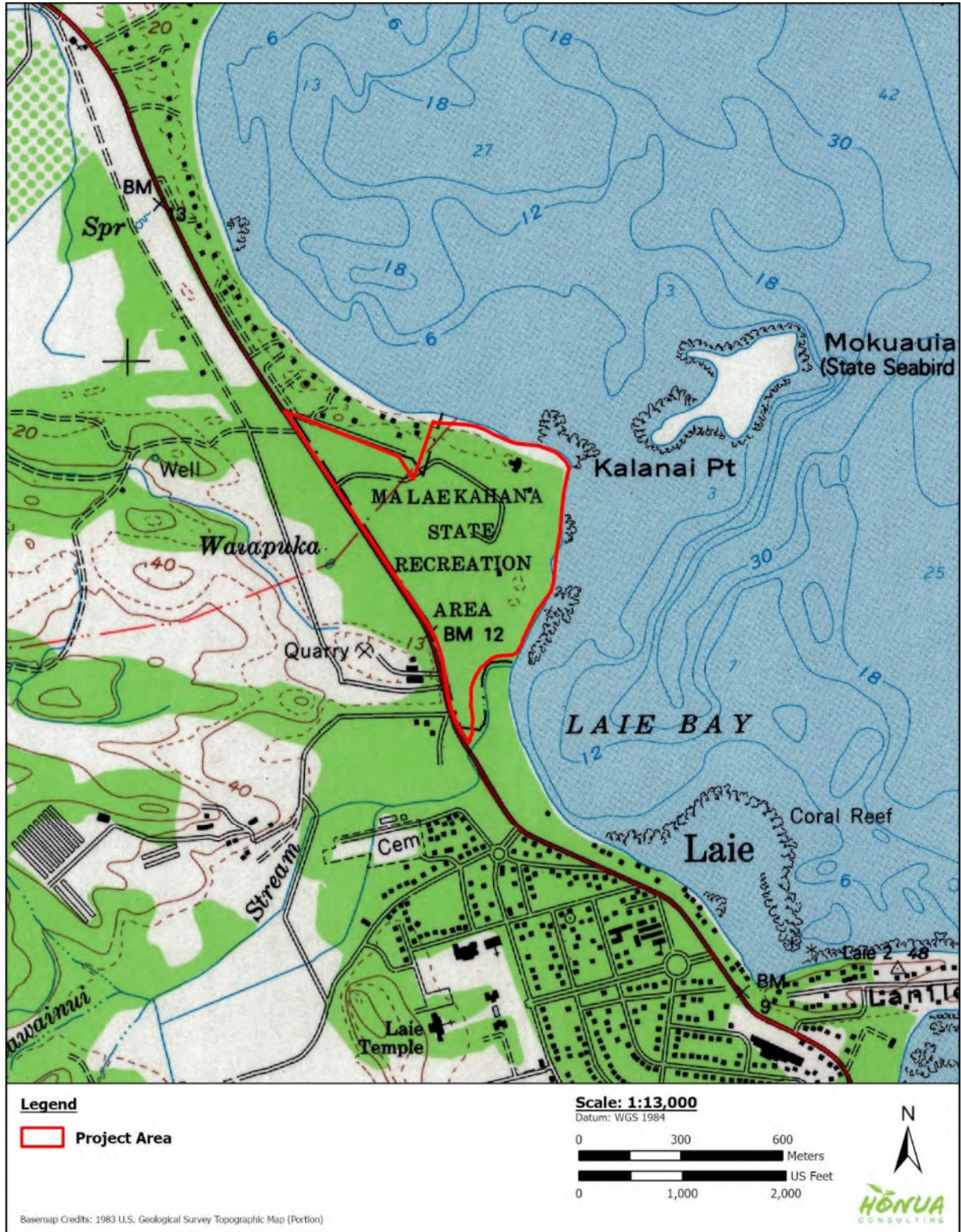


Figure 13. Portion of 1982 USGS topographic map (Kahuku quadrangle) including project area (base map source: University of Hawai‘i-Mānoa’s digital maps, <http://magis.manoa.hawaii.edu/maps/index.html>)

Section 3 Archaeological Context

In this section, we summarize relevant previous archaeological studies in and near the project area to reconstruct human use and modification of the land from pre-Contact times to the historic period. The main purpose of presenting this information is to develop predictive data about the types and distribution of archaeological historic properties and their component features we expected to encounter during the field inspection; and to assist interpretation of any new findings. If the proposed project requires a formal archaeological inventory survey (AIS) or archaeological monitoring, this section may be expanded.

Table 1, Figure 14 and Figure 15 summarize and depict the location and results of previous studies in and near the project area.

In addition to classic, foundational surveys and compilations of O‘ahu (e.g., McAllister 1933; Thrum 1938; Sterling and Summers 1978) that were completed prior to the advent and widespread adoption of historic preservation laws and rules in Hawai‘i,⁵ several previous archaeological studies have been conducted that included all or portions of the current project area. This section starts with the classic works of McAllister, Thrum and Sterling and Summers, then describes other relevant studies in chronological order grouped by project area or subject parcel wherever applicable.

3.1 Island-wide Studies that Nominally Included the Subject Parcel

The earliest professional descriptions of archaeological sites and wahi pana (legendary places) near the current project area were provided by McAllister’s (1933) Bishop Museum-sponsored inventory of O‘ahu.⁶ Thrum also published multiple listings of traditional Hawaiian heiau (temple sites) that were eventually compiled in one place (i.e., Thrum 1938, which summarized his earlier publications listing heiau). Sterling and Summers (1978), in turn, compiled these early site descriptions and other places of interest including wahi pana.

Two “McAllister sites” were identified in what is now the subject (SRA) parcel at Kalanai, and two others are mauka (inland) of Kamehameha Highway. The mauka sites are discussed first, presenting excerpts from McAllister’s (1933) original text (as written in the early 1930s) followed by additional compiled by Sterling and Summers (1978):

Site 275 – Waiapuka⁷

Waiapuka, a pool on the Kahuku side of Laie in Malaekahana, inland from the road in the midst of a cane field a pool on the Kahuku side of Laie in Malaekahana, inland from the road in the midst of a cane field.

Waiapuka is made famous by the legend of Laieikawai . . . The pool is oval in shape, measuring about 30 ft. by 60 ft. with the water about 10 ft. below the level

⁵ Sterling and Summers’s (1978) compilation of sites, wahi pana and other mo‘olelo (oral-historical accounts) mostly dates from 1959–1962 with a small number of additions made up to 1975 (ibid.:vii).

⁶ Given the enormity of McAllister’s task of identifying the “archaeological sites of O‘ahu,” he naturally focused on the most prominent and formal such as heiau, other shrines, fishponds, large archaeological complexes, and so on. Thus, the absence of “McAllister sites” in an area does not correlate with a lack of Hawaiian use of that place.

⁷ Under current SHPD numbering system, site is also State Inventory of Historic Places (SIHP) # 50-80-02-00275.

of the surrounding plain. Tides are said to affect the pool. On the Laie side is a small crevice in the rock, which is said to open into the cavern in which Laieikawai was hidden. Natives of the region remember when it was possible to swim through an underwater entrance, and it is said that the chamber could accommodate three or four people . . . The pool is significant in the minds of the Hawaiians because it was here that Waka [a mo‘o, or supernatural water spirit, worshipped by female chiefs] hid Laieikawai until she reached maturity. (brackets added)

Sterling and Summers (1978:155), quoting a well-known volume written by King David Kalākaua and R.M. Daggett (originally published in 1888, and reprinted many times),⁸ describes a trip to Wai‘āpuka in 1885. Of particular relevance is the observation of a local who appears to have entered into the depth of this pool and swum in its subterranean passage to and from the sea, mentioning that “. . . there would be found the bodies of those who sought to solve the mystery of the passage and failed.” This pool was also thought by the natives to be spring-fed from a subterranean source; based on these observations, Wai‘āpuka was undoubtedly a brackish water source.

Site 276 – Waikuukuu

Waikuku, Kahuku side of the old Pueo fishpond [some records refer to this as Paeo, e.g., Handy and Handy 1972:461], about 100 ft. up on the low ridge.

A narrow but deep crevice in the ground with water at the bottom. This is affected by the tides and the depth of the water in Waiapuka may be judged by the height of the water in this opening. The place is now [early 1930s] being used for dumping garbage. (brackets added)

This natural feature, undoubtedly part of the karstic (pit cave or sinkhole) sedimentary substrate found throughout parts of Mālaekahana and Lā‘iewai, may be spelled using modern Hawaiian diacriticals as Waiku‘uku‘u. This place name is not included in Pukui et al. (1974) but one of the meanings of the word ku‘u, or doubled as ku‘uku‘u, is release or discharge, as in fresh water (wai) discharged or released.

The two “McAllister sites” identified in what is now the subject (SRA) parcel at Kalanai are as follows, again quoting excerpts from McAllister (1933); the first of these (Site 273) is interesting for its historical value and commentary on traditional Hawaiian beliefs about the area; the second site (274) is more directly relevant to understanding the archaeological context of the current project area, specifically its subsurface deposits:

Site 273 – House Site of Manuwahi

Foundation of the house (kahuahale) of Manuwahi, keeper of the god of Malaekahana.

Only a few large rocks remain by the site [sic?] of the railroad track [roughly the current Kamehameha Highway ROW], but the site has great importance in the eyes of the natives because of the prominence of the kahuna Manuwahi.

⁸ Kalākaua, D., and R.M. Daggett (1888). *The Legends and Myths of Hawaii, the Fables and Folk-Lore of a Strange People*. Charles L. Webster & Co., New York.

The rest of this narrative is recounted in the mo‘olelo section above (see Section 2.1.1, above). The potential archaeological relevance of this site (273)—in the northwestern portion of the subject parcel, is the possibility of there being extant subsurface deposits at or around this old house site. McAllister (1933), citing Rice (1923), continues with some information about human burials:

[Citing some accounts of battles in the area, he writes] Many skeletons were unearthed in plowing the cane fields of this region and in digging the foundations for the beach houses [just north of the subject parcel], indicative, some think, of many battles in the region. (brackets added)

Site 274 – Ko‘a

Site known to Hawaiians as a fishing shrine on the land known as Kalanai, which is now included in the division of Laie but formerly belonged to Malaekahana.

The fish brought to this shrine were the kala and enenu. Several flat rocks have been placed on end; one is placed flat. Innumerable remains of fish were found about the stones and on the west side of the rocks.

Skeletal remains [here, he has shifted to referring to human skeletal remains] were found on the northwest side at an average depth of 2 feet. The body was partially flexed. The upper portion of the body was lying on its back, with the head thrown back so that the mandible was uppermost. The legs had been flexed. The entire length of the burial, from head to knee, was 4 feet. The maximum length of the right femur was 17 inches. The head was lying toward the south, and the lower portion was toward the sea.

3.2 Studies in Mālaekahana SRA

3.2.1 Hammatt 1977

Hammatt (1977) conducted testing of subsurface deposits and identified two cultural layers that were not formally designated with a site number at the time (as was the custom, pending further research, described below).

3.2.2 Olson 1979

Olson (1979) conducted analyses of volcanic glass recovered by Hammatt (1977) for dating purposes (the efficacy of which has since been called into question and is no longer considered valid). Olson also confirmed the fact that the study sample included at least three intentional (i.e., “man-made”) flakes and up to a dozen flake fragments consistent with being artifacts.

3.2.3 Yent and Estioko-Griffin 1980, Yent and Ota 1982, Griffin and Yent 1986

Archaeologists from the Division of State Parks conducted early studies of Mālaekahana SRA after its initial establishment (land purchase) in 1976 (or 1977) in advance of park improvements. Yent and Estioko-Griffin (1980) defined a discontinuous subsurface cultural layer in the park’s sand dune deposit as State Inventory of Historic Places (SIHP) # 50-80-02-02801. A multi-year program of mapping, subsurface testing, dating and analysis of recovered materials, which

Table 1. Previous Archaeological Studies and Results in and near the Project Area

Reference ¹	Type ²	Location	Results & Comments
McAllister 1933 Thrum 1938 Sterling & Summers 1978	Earliest survey / compilations of sites on O‘ahu	O‘ahu Island-wide (these studies are not depicted in Figs. 14 & 15 since they are island-wide)	Several “McAllister sites” are within 0.5 miles of current project area: 273 (traditional Hawaiian house site remains), 274 (fishing shrine [ko‘a] and human burial), 275 (Wai‘āpuka Pūnāwai) and 276 (Waiku‘uku‘u Pūnāwai) (see text for a full description); 273 & 274 are in the subject parcel but not the construction footprint
Hammatt 1977	Subsurface soil analysis	Mālaekahana SRA – current project- area parcel	Documented 2 subsurface cultural layers that were not formally designated w. site #s
Olson 1979	Analysis of volcanic glass		Identified 3 flakes and 12 fragments that were intentionally produced (i.e., they had percussion features)
Yent & Estioko-Griffin 1980	AIS*		Recorded SIHP # 02801, including 2 subsurface cultural layers identified by Hammatt (1979), the previously known ko‘a (SIHP 00274) and a human burial
Yent & Ota 1982	Subsurface testing (auger coring)		Further documentation of SIHP # 02801
Griffin and Yent 1986			Objective was to explore and define lateral limits of SIHP # 02801
Smith 1990			Nothing new identified
Carpenter 1996	AM		No historic properties identified; monitoring seepage pit installation
Carpenter 2012	AM		No historic properties identified; monitoring of IWS upgrades
Ahlo & Hommon 1981	ARS	Kahawainui Stream floodplain including south end of Mālaekahana SRA – portion of current project- area parcel	No archaeological finds reported but mentions remnant of Shinto shrine and a cemetery
Neller 1984a, b	ARS		Supplemental investigations to Ahlo and Hommon (1981) documents remains of a Japanese cemetery and Shinto shrine, plantation camp, a railroad bed, sacred stone of Hauwahine, and house ruins
Bath 1985	AIS*	Kahawainui Stream	Identified 5 site-features: 2 historic-period cemeteries, 1 rock alignment, 1 cave and 1 rock mound; 2 subsurface pre-Contact cultural layers also identified
Jensen 1989	ARS	Project area extended in a narrow swath from Kamehameha Highway back into the uplands; proposed golf course that was never built	6 sites identified in Mālaekahana, designated SIHP #s 04088-04093; sites included 3 overhang shelters/temporary habitations, 2 cave habitations, 1 plantation-era irrigation ditch and tunnel and 1 platform/mound interpreted as a possible habitation or historic-period burial

Reference ¹	Type ²	Location	Results & Comments
Kennedy 1990	ARS		Revisited and reevaluated sites identified by Jensen (1989)
Kennedy 1989	ARS	Another proposed golf course that was never built (today's approximate boundaries of Gunstock Ranch)	Identified 19 sites, including traditional Hawaiian habitation and agricultural areas, as well as a military gun emplacement and railroad bed; no SIHP #s were assigned in this report; Monahan 2005 subsumed and included Kennedy 1989 results
Dunn et al. 1992	AIS	Lā'ie Master Plan project; included portions of Lā'ie & Mālaekahana	Multiple sites identified; closest to current project area (see Fig. 15) were SIHP #s 04465 (human burial) and 04468 (human burial)
Halpern & Rosendahl 1995	Add. AIS		
Monahan 2005	AIS	500-acre triangular portion of Mālaekahana Ahupua'a from highway back mauka	43 historic properties identified; most of these (n=32) were historic-period plantation sites; the other 11 date from pre-Contact to early historic period, including 2 burial sites (SIHP #s 06775 & 06783), a subsurface cultural layer w. well-preserved imu (SIHP # 06779) and a more in-depth study including subsurface testing w. a radiocarbon date of Wai'āpuka Pool (SIHP # 00275); see text for details
McElroy 2016	AIS	Dune setting just north of current project area	No historic properties identified
McElroy & Duhaylonsad 2017	AM	Kamehameha Highway	No historic properties identified

¹ Arranged chronologically but also grouped together by project area when applicable.

² Abbreviations: Add. AIS = addendum archaeological inventory survey, AIS* = archaeological work that included mapping and subsurface excavation, thus, satisfying current AIS standards, AIS = archaeological inventory survey, ALRFI = archaeological literature review and field inspection, AM = archaeological monitoring, ARS = archaeological reconnaissance survey

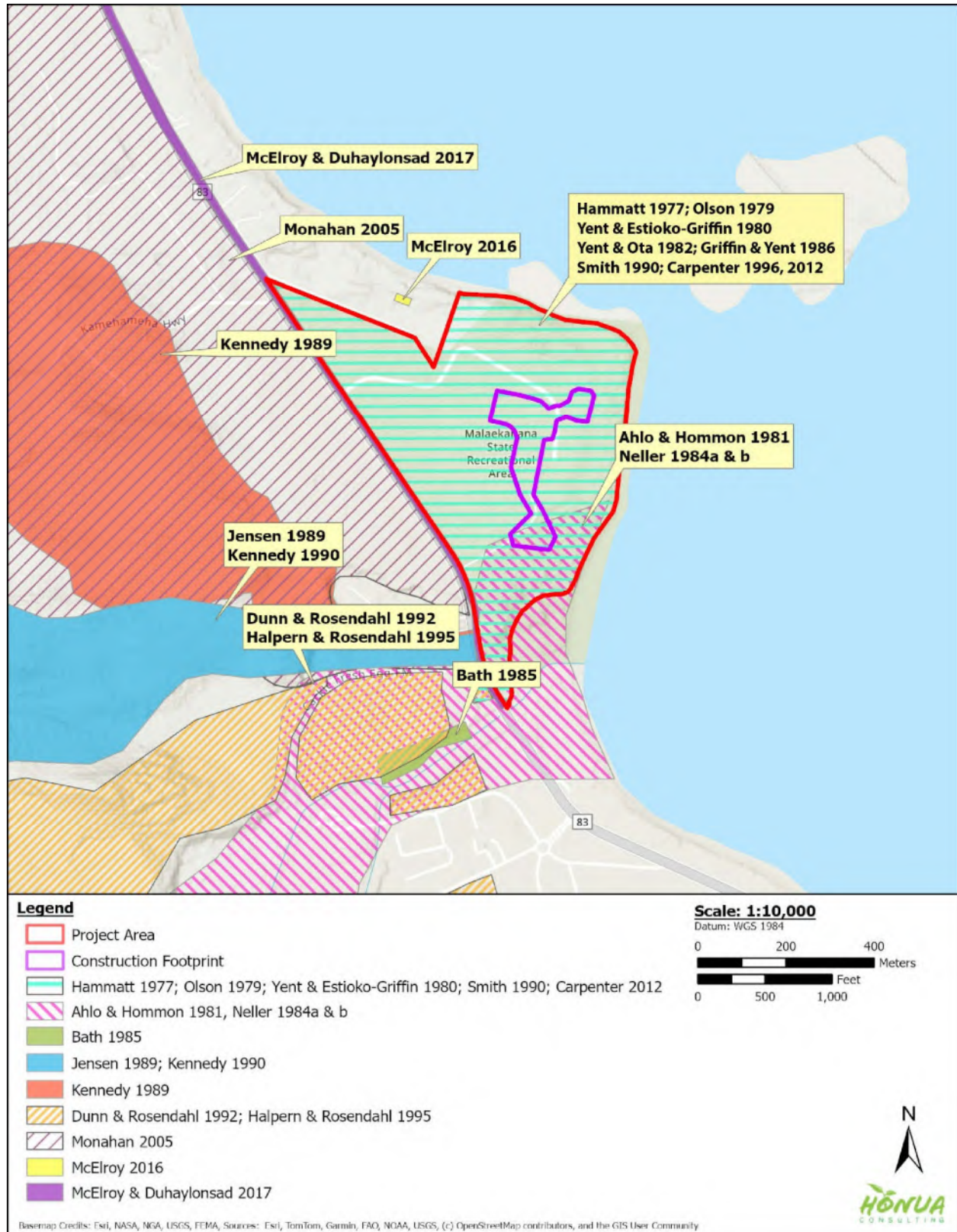


Figure 14. Previous archaeological studies near project area (see table and text above for details)

included firepits, imu (earth ovens), post holes, midden and portable artifacts interpreted as fishing and domestic implements, yielded a substantial amount of archaeological and cultural information on pre-Contact Hawaiian lifeways. The only above-ground archaeological historic property is a well-known ko‘a (fishing shrine) (SIHP 50-80-02-00274) previously identified by McAllister (1933). The discontinuous subsurface cultural layer has been identified in six areas, designated A–F, along the length of the dune system. One burial was discovered in Area A, which included the ko‘a, during subsurface testing in the 1970s. Three main periods of pre-Contact site occupation from circa AD 1600–1780 were documented. Subsequent phases of work in other portions of the Mālaekahana SRA (e.g., Yent and Ota 1983; Griffin and Yent 1986) helped further define the six areas of subsurface cultural layer. These studies clearly demonstrate the subject parcel was intensively utilized by Hawaiians practicing a traditional lifestyle in pre-Contact times.

Figure 16 shows the location of the six discontinuous areas (A–F) of subsurface cultural deposit (SIHP # 02801) from Yent and Estioko-Griffin (1980). *Portions of the proposed project’s construction footprint (see Figure 15) abut areas B and E.*

3.2.4 Carpenter 1996, 2012

More recently, State Parks conducted archaeological monitoring in support of Seepage Pit Installation (Carpenter 1996) and Integrated Water System (IWS) upgrades (Carpenter 2012). No significant historic properties were identified during either of these two studies.

3.3 Kahawainui Stream with Portions of Mālaekahana SRA

3.3.1 Ahlo and Hommon 1981

Ahlo and Hommon (1981) conducted archaeological reconnaissance survey (ARS) of a portion of the lower Kahawainui Stream floodplain, which extended into the southern portion of the subject parcel and construction footprint (see Figure 14). The authors noted that the entire area had been extensively disturbed by commercial agricultural activities in historic times, and did not document any significant sites. They did, however, document a fenced area located upon a limestone ridge with several historic-era graves, just north of the stream. This Japanese cemetery and a Shinto shrine were the only significant findings. No SIHP numbers were assigned during this work. These findings were on the west side of Kamehameha Highway.

3.3.2 Neller 1984a,b

Supplemental investigations to Ahlo and Hommon (1981) documented remains of the Japanese cemetery and Shinto shrine, as well as other features related to a sugarcane plantation camp, a railroad bed, a sacred stone of Hauwahine and house ruins. No SIHP numbers were assigned during this work. These findings were on the west side of Kamehameha Highway.

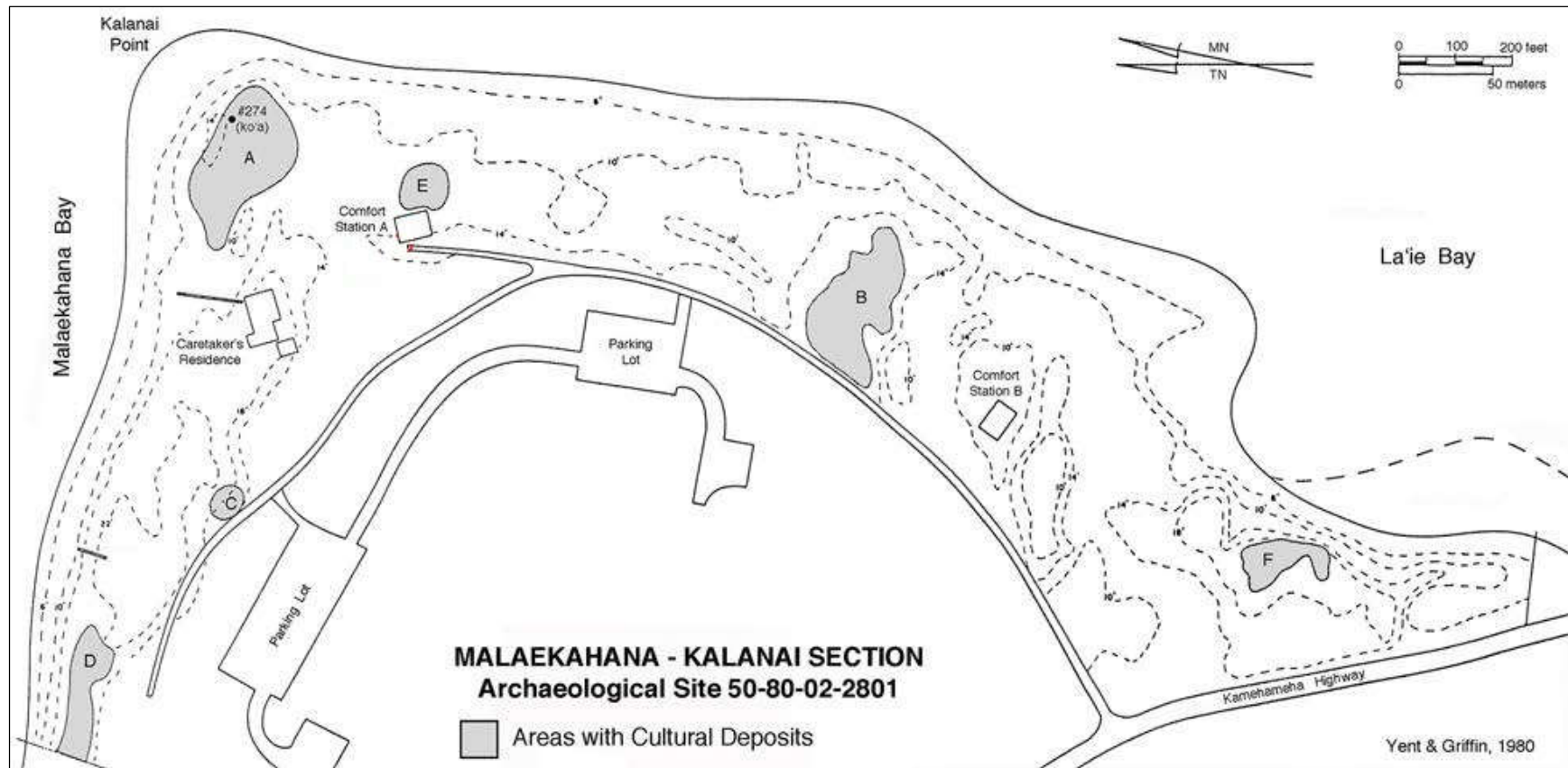


Figure 16. Areas A through F at SIHP # 50-80-02-02801 (see Figure 15 above for proposed construction footprint's proximity to Areas B and E) (source: Yent 2018:52)

3.4 Other Nearby Studies

3.4.1 Bath 1985

Bath (1985) conducted what would today be considered an archaeological inventory survey (AIS) of a small portion of the Kahawainui Stream floodplain just southwest of the current project area. This work resulted in the identification of five site-features: two historic-period cemeteries, one rock alignment, one cave and one rock mound. Two subsurface pre-Contact cultural layers also identified. No SIHP numbers were assigned during this work. These findings were on the west side of Kamehameha Highway.

3.4.2 Jensen 1989, Kennedy 1990

Paul H. Rosendahl, Inc. (PHRI) (Jensen 1989) conducted an AIS (with limited subsurface excavation) of a 228-acre project area (the then-proposed location of the “Malaekahana Golf Course,” which was not built) west of the current project area. Jensen identified six sites: (1) SIHP # 50-80-02-04088, a platform/mound “constructed of large waterworn boulders” interpreted as a possible habitation and/or historic burial site; (2) SIHP # 50-80-02-04089, a large limestone cave with internal terraces, a rock alignment and rock mound, surface midden and surface basalt debitage, interpreted as a habitation site; two radiocarbon dates were obtained in a test unit within the cave; according to Jensen (1989), one of these dates was contaminated, while the other (from 55–58 centimeters below the ground surface, or cmbs) yielded a relatively early date, calibrated to AD 1010 and 1375; (3) SIHP # 50-80-02-04090, two limestone overhang shelters, in association with surface (traditional) artifacts and midden, interpreted as a habitation site; (4) SIHP # 50-80-02-04091, a limestone overhang shelter, with an associated rock alignment, and surface artifacts (both traditional and historic) and midden; (5) SIHP # 50-80-02-04092, a small limestone cave, with little or no obvious signs of occupation, except for surface kūkui endocarp fragments; and (6) SIHP # 50-80-02-04093, a ditch/tunnel feature dating to the turn-of-the-(twentieth) century (sugarcane feature). Archaeological Consultants of Hawai‘i (ARH) (Kennedy 1990) conducted a follow-up, independent inspection of the sites identified by Jensen (1989) but did not make any major changes to the original work.

3.4.3 Kennedy 1989

ACH (Kennedy 1989) conducted an ARS of a 200-acre area west of Kamehameha Highway, corresponding more or less to the current boundaries of Gunstock Ranch. No SIHP numbers were designated as a result of Kennedy’s (1989) ARS, but the temporary numbers were eventually subsumed by Monahan’s (2005) archaeological inventory survey (AIS) (see below), which did obtain formal SIHP numbers. Kennedy (1989) identified 19 sites but did not document them in detail; no subsurface testing (archaeological excavation) was conducted.

Kennedy (1989) reported the following site types within the Gunstock Ranch area: (1) several limestone overhang shelters, and one cave; a modest amount of surface material (basalt flakes, midden) was present; (2) several areas of eroded (exposed) sand dune sediments, interpreted as ‘possible burials’ (and, for some unknown reason, assigned SIHP numbers, even though no digging was conducted, nor were any human remains or burial features observed); (3) one WW-II gun emplacement; (4) a portion of the “Koolau Railroad”; and (4) several “stacked coral” (i.e., limestone rock) features (no dimensions provided).

3.4.4 Dunn et al. 1992, Halpern and Rosendahl 1995

PHRI conducted an AIS in support of the Lā'ie Master Plan project including parcels along the boundary between Lā'ie and Mālaekahana and south into Lā'ie (Dunn et al. 1992). Halpern and Rosendahl (1995) conducted additional AIS work for the same project. Most of the identified sites were in and around the town of Lā'ie. In addition to SIHP # 04093, the ditch/tunnel described by Jensen (1989), Dunn et al. (1992) identified eight sites near the ahupua'a boundary: (1) SIHP # 50-80-02-04465, a platform-mound complex, interpreted (but not tested) as a possible burial, interpreted as dating from the late pre-Contact to early historic era; (2) SIHP # 50-80-02-04468, a cemetery (not tested), interpreted as dating from the historic period; (3) SIHP # 50-80-02-04469—An upright stone, interpreted as a marker (tested, yielding no significant finds), interpreted as a possible property marker; (4) SIHP # 50-80-02-04471—A mound-paved area complex, interpreted as a Pre-Contact agricultural site (not tested); (5) SIHP # 50-80-02-04472—A cave, interpreted as a Pre-Contact, temporary habitation with disturbed, surface human remains, presumably once part of a burial (the habitation area was tested, yielding traditional stone tool flakes and midden); (6) SIHP # 50-80-02-04473—A complex consisting of an enclosure, retaining wall, and other walls, interpreted as a Pre-Contact agricultural site (not tested); (7) SIHP # 50-80-02-04475—A retaining wall, interpreted as a Pre-Contact agricultural site; and (8) SIHP # 50-80-02-04464—A terrace-modified bedrock site, interpreted as a Pre-Contact habitation site. The closest identified sites to the current project area were SIHP #s 04465 (possible human burial) and 04468 (historic-period cemetery).

3.4.5 Monahan 2005

Scientific Consultant Services (SCS) conducted an AIS of approximately 500 acres west of Kamehameha Highway in the ahupua'a of Mālaekahana and Lā'ie. Extensive subsurface testing consisted of 52 backhoe-assisted trenches and 17 hand-excavated units at 11 site-features and within one of the trenches. Forty-four sites were documented. Thirty-two sites (73%) were interpreted as dating from the historic period, 11 were pre-Contact to early historic in age, and one site (SIHP # 50-80-02-6775, a burial) was considered indeterminate but probably early historic in age. Most of the historic sites are commercial sugarcane features from the later nineteenth century to the 1960s–70s. The Pre-Contact sites consist of three rockshelters (temporary habitations), three agricultural sites, two habitation/agricultural sites, one rockshelter (temporary habitation) with a burial, one buried cultural layer with an imu (earth oven) and the famous wahi pana of Wai'āpuka Pool ("McAllister Site" 275).

Four radiocarbon dates were obtained for four sites. The earliest date, from the base of a subsurface imu with an associated (subsurface) cultural layer (SIHP # 50-80-02-06779), yielded an early to middle fourteenth-century calibration. Another pre-Contact date was obtained for a small rockshelter (SIHP # 50-80-02-06810), yielding a middle seventeenth-century calibration. Two other sites with traditional tools and midden (SIHP #s 50-80-02-06783 and 50-80-02-06811) yielded younger dates that suggest, along with other data from these sites, late Pre-Contact to early historic era occupation.

3.4.6 McElroy 2016

Keala Pono Archaeological Consulting (Keala Pono) (McElroy 2016) conducted an AIS in a private parcel in the beach lots of Mālaekahana just north of the current subject parcel. Although

the project area was in a sand-dune setting, subsurface testing did not identify any significant historic properties.

3.4.7 McElroy and Duhaylonsad 2017

Keala Pono (McElroy and Duhaylonsad 2017) conducted archaeological monitoring in support of a resurfacing project on Kamehameha Highway from Mālaekahana Stream Bridge to Kahawainui Stream-Lā'iewai Bridge. Excavations were shallow and no archaeological resources were identified.

3.4.8 Off-shore Inadvertent Discovery of Human Skeletal Remains

SIHP # 50-80-02-04350, shown off-shore in Lā'ie Bay, consists of a human cranium discovered by SCUBA divers in about 20 ft. of water circa 1990, according to information shared by the SHPD (pers. comm.).

Section 4 Results of Field Inspection

Fieldwork for this project was conducted on December 23, 2025, by Fred LaChance, B.A., under the supervision of Christopher M. Monahan, Ph.D. (principal investigator). Fieldwork required approximately 2.5 hours to complete. Fieldwork for this project was performed under the archaeological permit number 25-28 issued to Honua Consulting by the SHPD/DLNR in accordance with HAR Chapter 13-282.

4.1 Methodology

The field inspection consisted of a pedestrian survey of the entire project area. Narrowly-spaced transects oriented east to west were walked from the north end of the construction footprint to the south. The main objective was to identify any potential archaeological historic properties (or their component features) such as rock walls or other stacked-rock features that are sometimes found on historically-altered and landscaped parcels on O‘ahu.⁹

Figure 17 and Figure 18 depict the survey path walked by the Honua archaeologist, and photographs taken along the way; photographs were geolocated using integrated GIS hardware and software that was post-processed for sub-meter accuracy following the fieldwork.

In addition, field notes and a detailed photo log (captions) were also recorded. Numbered photographs in Figure 17 and Figure 18 correspond to project-area photographs in Appendix A.

No subsurface testing (archaeological excavation or sampling) was conducted.

All data are stored and backed-up in Honua’s database.

4.2 Survey Results

Fieldwork resulted in the following main findings:

1. With one possible exception, no historic properties, or potential historic properties, were observed at the ground surface in the proposed construction footprint; prior to construction of the park’s existing facilities and infrastructure, multiple phases of archaeological survey and documentation starting in the late 1970s did not identify any archaeological site-features in the current construction footprint.
2. One above-ground concrete structure that may represent an architectural historic property, possibly a small, military pillbox appears to be located at or just outside of the boundary of the southeast corner of the current construction footprint (Figure 19, Figure 20, and Figure 21). According to recent policy directives from the SHPD, such site-features are no longer assessed and documented by archaeologists, but require the attention of a qualified architectural historian (preferably a military specialist).
3. No exposed erosional features in the construction footprint were observed; thus, it is not possible to make any definitive statements about the nature of the subsurface deposits.

⁹ Under the laws and rules of historic preservation in Hawai‘i, objects, sites or other physical remains older than 50 years ago may qualify as “significant historic properties.” Therefore, the current “cut off” date is now circa 1975.



Figure 17. Pedestrian transects walked by Honua archaeologist and key to photographs taken in the project area by Honua (see Appendix A for numbered photographs)



Figure 18. Detailed view of pedestrian transects and photo locations (see Appendix A for numbered photographs)



Figure 19. Small concrete structure, possible military pillbox, near the southeastern boundary of the construction footprint; view north-northeast



Figure 20. Another view of small concrete structure, possible military pillbox, near the southeastern boundary of the construction footprint; south-southeast



Figure 21. Detail of opening on south side of small concrete structure, possible military pillbox, near the southeastern boundary of the construction footprint; view north

Section 5 Conclusion

This archaeological literature review and field inspection (ALRFI) was completed on behalf of G70 and the Hawai‘i Department of Land and Natural Resources (DLNR), Division of State Park (DSP) in support of park facility improvements to a portion of the Mālaekahana State Recreation Area (SRA) – Kalanai Section, Lā‘iewai and Mālaekahana Ahupua‘a, Ko‘olauloa District, Island of O‘ahu, Hawai‘i. The subject parcel (“Kalanai Section”) of 73.7 acres is TMK (1) 5-6-001:004. Proposed park improvements are in a relatively small portion of the overall TMK parcel. This report includes information relevant to the cultural, historical and archaeological significance of the entire subject parcel, but specifically assesses the potential impacts of the proposed improvements on archaeological historic properties in the “construction footprint” (see orange polygon in Figure 4).

The subject parcel is owned by the State of Hawai‘i. Project funding is anticipated to come from both state and federal sources; thus, the proposed project is reviewable under both Hawai‘i Revised Statutes (HRS) Chapter 6E-8 as well as Section 106 of the National Historic Preservation Act (NHPA).

The subject parcel, located on a prominent point (Kalanai) between Mālaekahana Bay to the north and Lā‘ie Bay to the south, is bounded on its west side by Kamehameha Highway, by the ocean to the east, by Kahawainui Stream on its south side and by residential lots to the north. Kahuku town center is about 1.25 miles to the north. Lā‘ie town center is about 1.0 miles to the south.

Proposed park improvements include the following:

- Replacement of two existing comfort stations near camping areas A and B in the Kalanai section of the park;
- Construction of a new pavilion, stand-alone pot-washing station and rinsing shower; and,
- Upgrades to the park’s existing individual wastewater system.
- New group camp site

Specific scope of work details (construction plans) are not available at this time, but the proposed improvements will require ground disturbance (i.e., subsurface excavation).

The objectives of this ALRFI were: (1) documentation and description of the parcel’s land-use history in the context of both its traditional Hawaiian character as well as its historic-period changes; (2) identification of any archaeological historic properties or component features in or adjacent to the project area; and (3) providing information relevant to the likelihood of encountering historically-significant cultural deposits (i.e., archaeological historic properties and/or component features) in subsurface context during construction associated with the proposed project.

This ALRFI is not an archaeological inventory survey (AIS), and it is not intended for formal review by the State Historic Preservation Division (SHPD). It may be used, however, to support the project proponent’s consultation with the SHPD in compliance with HRS Chapter 6E-8, Section 106 of the NHPA and/or other state and federal environmental regulations.

5.1 Results

1. Archival research on the cultural and historical context of the subject parcel support the following main conclusions:
 - a. Most of the subject parcel consists of a stabilized sand dunes just back of the shoreline with more level, but still sandy terrain behind it (this includes the construction footprint).
 - b. The northwestern part of the subject parcel, but not the construction footprint, would have been amenable to traditional Hawaiian settlement and cultivation since this area was not dominated by sand deposits. This northwestern portion was used for commercial (sugarcane) in the historic period.
 - c. The sand deposits, since they were suitable neither for permanent house sites nor agricultural pursuits, were commonly used by Hawaiians in pre-Contact to early historic times for human burials as well as more ephemeral (temporary) shelters for fishermen and others accessing the shoreline for subsistence purposes. A well-known traditional Hawaiian ko‘a (fishing shrine) is located at Kalanai Point (see item #2 below).
 - d. The sand-dune and level-sand areas, including the construction footprint, were not utilized in the historic period by either commercial agriculture or ranching, since these soils and physiographic setting were not ideal for either of these common economic land uses.
2. Previous archaeological studies in the subject parcel and construction footprint have identified two archaeological historic properties:
 - a. The first, State Inventory of Historic Places (SIHP) # 50-80-02-00274 (also known as “McAllister Site 274”), is at Kalanai Point. This is the only above-ground historic property in the subject parcel. This site is not within or near the construction footprint.
 - b. Archaeological work the late 1970s and 1980s (e.g., Yent and Estioko-Griffin 1980, Yent and Ota 1982, Griffin and Yent 1986) and continuing thereafter (e.g., Smith 1990; Carpenter 1996, 2012) has identified/designated a discontinuous subsurface cultural layer in the park’s sand dune deposit as SIHP # 50-80-02-02801 with firepits, imu (earth ovens), post holes, midden and portable artifacts interpreted as fishing and domestic implements. The discontinuous subsurface cultural layer has been identified in six areas, designated A–F, along the length of the dune system. One burial was discovered in Area A, which included the ko‘a, during subsurface testing in the 1970s. Three main periods of pre-Contact site occupation from circa AD 1600–1780 were documented. These studies clearly demonstrate the subject parcel was intensively utilized by Hawaiians practicing a traditional lifestyle in pre-Contact times.

3. The proposed construction footprint is immediately adjacent to areas B and E of SIHP # 02801 (see Figure 15 and Figure 16).
4. Fieldwork resulted in the following main findings:
 - a. With one possible exception, no historic properties, or potential historic properties, were observed at the ground surface in the proposed construction footprint; prior to construction of the park's existing facilities and infrastructure, multiple phases of archaeological survey and documentation starting in the late 1970s did not identify any archaeological site-features in the current construction footprint.
 - b. One above-ground concrete structure that may represent an architectural historic property, possibly a small, military pillbox appears to be located at or just outside of the boundary of the southeast corner of the current construction footprint (Figure 19, Figure 20, and Figure 21). According to recent policy directives from the SHPD, such site-features are no longer assessed and documented by archaeologists, but require the attention of a qualified architectural historian (preferably a military specialist).

5.2 Recommendations

1. Regarding the small, above-ground concrete structure that may be a military pillbox at or near the boundary of the southeast corner of the current construction footprint (see Figure 19, Figure 20, and Figure 21), Honua recommends either (a) avoidance of this possible historic property by the proposed project, or (b) consultation with the SHPD about its assessment/evaluation by a qualified professional architectural historian; according to recent policy directives from the SHPD, such site-features are no longer interpreted by archaeologists, but require the attention of a qualified architectural historian (in this case, preferably a military specialist).
2. Consultation with the SHPD should include discussion of possible mitigation measures (i.e., either additional subsurface testing [archaeological excavation] or archaeological monitoring) in the construction footprint near areas B and E of SIHP # 02801, in particular, and the rest of the construction footprint, in general, since sand-dune deposits of this type are known to contain discontinuous (i.e., hard to predict) evidence of traditional Hawaiian cultural material as well as burials throughout O'ahu and other islands.

Section 6 References Cited

- Ahlo,, H., and R. Hommon (1981). *An Archaeological Survey of the Flood Control Study Area, Kahawainui Stream Laie, Oahu, Hawai'i*. Prepared for U.S. Army Engineer Division, Fort Shafter, Hawai'i.
- Bath, J. (1985). *Archaeological Testing and Mapping at Kahawainui Stream in Lā'ie, O'ahu, Hawai'i (TMK: 1-5-5-005, 1-5-5-009)*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.
- Beckwith, M. (1970). *Hawaiian Mythology*. University of Hawaii Press, Honolulu.
- Carpenter, A. (1996). *Archaeological Monitoring of Seepage Pit Installation at Mālaekahana State Recreation Area, Lā'ie, O'ahu TMK: 5-6-01:4*. Memo to file for DLNR, Division of State Parks.
- Carpenter, A. (2012). *Draft Archaeological Monitoring Plan for IWS Upgrades at Mālaekahana State Recreation Area, Mālaekahana Ahupua'a, Ko'olaupua District, Island of O'ahu, TMK: 5-6-01:51,57, 59, 65*. Prepared for DLNR, Division of State Parks.
- Chamberlain, L. (1956). *Tour Around Oahu, 1828*. Hawaiian Historical Society Annual Report 56:25–41.
- Dunn, A., P. Rosendahl, S. Goodfellow, L. Kalima, and L. Scott Cummings (1992). *Archaeological Inventory Survey, Lā'ie Master Plan Project, Lands of Malaekahana and Lā'ie, Ko'olaupua District, Island of Oahu (TMK 1-5-5-005, 1-5-5-006, 1-5-5-007)*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.
- Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens (1972). *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai. State of Hawaii, U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C.*
- Giambelluca, T., Q. Chen, A. Frazier, J. Price, Y. Chen, P. Chu, J. Eischeid, & D. Delparte (2013). *Rainfall Atlas of Hawai'i, Interactive Map*. Geography Department, University of Hawai'i-Mānoa. Accessed at <<http://rainfall.geography.hawaii.edu/interactivemap.html>>.
- Griffin, A., and M. Yent (1986). *Auger Coring at Malaekahana State Park, Phase II, TMK: 5-6-01:53*. Memo prepared for DLNR, Division of State Parks.
- Halpern, M., and P. Rosendahl (1995). *Addendum: Archaeological Inventory Survey Lā'ie Master Plan Project. Lands of Mālaekahana and Lā'ie Ko'olaupua District, Island of O'ahu, (TMK 1-5-5-005: 1-5-5-006)*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.
- Hammatt, H.H. (1977). *Soil Analysis for Archaeological Investigation of Malaekahana State Park*. Hallett H. Hammatt, Honolulu.
- Handy, E.S.C. (1940). *The Hawaiian Planter – Volume I*. B.P. Bishop Museum Bulletin 161, Honolulu.
- Handy, E.S.C., and E.G. Handy (1972). *Native Planters in Old Hawaii, Their Life, Lore, and Environment*. Bishop Museum Press, Honolulu.
- Jensen, P. (1989). *Archaeological Inventory Survey, Punamano and Malaekahana Golf Courses, Lands of Ulupehupehu, Punalau, Kahuku, Malaekahana, and Laie, Koolauloa District, Island of Oahu*. Paul H. Rosendahl, Ph.D., Inc.

- Juvik, S.P., and J.O. Juvik (Eds.) (1998). *Atlas of Hawai‘i, 3rd edition*. University of Hawai‘i Press, Honolulu.
- Kennedy, J. (1989). *Archaeological Inventory Survey for the Proposed Malaekahana Golf Course, a Portion of the Country Courses at Kahuku*. Prepared by Archaeological Consultants of Hawai‘i.
- Kennedy, J. (1990). *Archaeological Assessment and Reevaluation Report Concerning the Recently Surveyed Proposed Punamano Golf Course: A Portion of the Country Courses at Kahuku*. Prepared by Archaeological Consultants of Hawai‘i
- Kamakau, S.M. (multiple translators). (1992) *Ruling Chiefs of Hawaii* (Revised edition). Kamehameha Schools Press, Honolulu.
- McAllister, J.G. (1933). *Archaeology of Oahu*. Bishop Museum Bulletin 104, Bishop Museum Press, Honolulu.
- McElroy, W. (2016). *Archaeological Assessment for TMK: (1) 5-6-001:028 (por.), Mālaekahana Ahupua‘a, Ko‘olaupua District, Island of O‘ahu, Hawai‘i*. Prepared by Keala Pono Archaeological Consulting, Kāne‘ohe, Hawai‘i.
- McElroy, W., and D. Duhaylonsad (2017). *Archaeological Monitoring Report for Kamehameha Highway Resurfacing from Mālaekahana Stream Bridge to Kahawainui Stream-Lā‘iewai Bridge, Mālaekahana and Lā‘iewai Ahupua‘a, Ko‘olaupua District, O‘ahu, TMK: (1) 5-5-009, 5-6-001 through 006, and 5-6-009 (por.)*. Prepared by Keala Pono Archaeological Consulting for Road and Highway Builders.
- Monahan, C.M. (2005). *An Archaeological Inventory Survey Report on an Approximately 500-Acre Area in Mālaekahana, Mālaekahana and Lā‘ie Ahupua‘a, Ko‘olaupua District, O‘ahu Island, Hawai‘i [TMK: (1) 5-6-006: 006 and 058]*. Prepared by Scientific Consultant Services, Inc., Honolulu.
- Neller, E. (1984a). “Comments on the Kahawainui Stream Flood Control Study from the Perspective of Historic Preservation and Cultural Resources Management.” Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai‘i.
- Neller, E. (1984b). “Comments on the Kahawainui Stream Flood Control Study’s Archaeological Reconnaissance Survey, Including the Results of an Archaeological Reconnaissance Survey along Lā‘iewai Stream, Lā‘ie, O‘ahu (TMK 1-5-5-005:, 1-5-5-009).” Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai‘i.
- Olson, L. (1979). *Volcanic Glass Research Report: Malaekahana & Keawaula Dune*. University of Hawai‘i-Mānoa Archaeology Laboratory, Honolulu.
- Pukui, M.K., S.H. Elbert, and E.T. Mookini (1974). *Place Names of Hawaii*. University of Hawaii Press, Honolulu.
- Rice, W.H. (1923). *Hawaiian Legends*. Bernice P. Bishop Museum Bulletin 3. Bishop Museum Press, Honolulu.
- Smith, M. (1990). *Subsurface Testing at Malaekahana State Recreation Area, Phase I, Sewer and Water Improvements (Job No. 85-OP-F2), Laie and Malaekahana, Koolauloa, Oahu*, Division of State Parks, Honolulu.
- Sterling, E.P., and C.C. Summers (Compilers) (1978) *Sites of Oahu*. Department of Anthropology, B.P. Bishop Museum, Honolulu.

- Thrum, T.G. (1938). Complete List of Heiaus (Temples) and Sites. *Hawaiian Annual for 1938*, pp. 121-142. Printshop Co., Ltd., Honolulu.
- Wilcox, B. (1975). *The Kahuku Sugar Mill Story*. Island Heritage, Honolulu, Hawai'i.
- Yent, M. (2018). *Section 106 Consultation. Installation of Water Bottle Filling Stations at Hawai'i State Parks Statewide*. Prepared for DLNR, Division of State Parks.
- Yent, M., and A. Estioko-Griffin (1980). *Archaeological Investigations at Malaekahana (50-80-02-2801), Windward Oahu*. Prepared for DLNR, Division of State Parks.
- Yent, M., and J. Ota (1982). *Results of Auger Coring Conducted at Malaekahana State Recreation Area, Phase II, Koolauloa, Oahu*. Memo prepared for DLNR, Division of State Parks.

APPENDIX A – Subject Parcel Photographs taken by Honua

This appendix contains eighteen (18) photographs of the project area taken by Honua on December 23, 2025.

Photo Number	Date & Time	Image Link	Comments	GPS Location
1	2025-12-23T08:40:44.07569	Click for Larger Image.	NW corner of PA	-157.93005651422601, 21.660104196379201



Photo Number	Date & Time	Image Link	Comments	GPS Location
2	2025-12-23T08:40:44.07569	Click for Larger Image.	NW corner of PA	-157.93005651422601, 21.660104196379201



Photo Number	Date & Time	Image Link	Comments	GPS Location
3	2025-12-23T08:47:14.708266	Click for Larger Image.	North Comfort Station A	-157.92799042468701, 21.660203456662099



Photo Number	Date & Time	Image Link	Comments	GPS Location
4	2025-12-23T07:58:09.253221	Click for Larger Image.	Comfort Station A	-157.92971102627101, 21.657240425136798



Photo Number	Date & Time	Image Link	Comments	GPS Location
5	2025-12-23T09:12:27.917882	Click for Larger Image.	Interior of pillbox	-157.92891241584499, 21.657173760663198



2025-12-23 09:12:46 AM
21.6571909°N, 157.9289290°W, 45.9°

Photo Number	Date & Time	Image Link	Comments	GPS Location
6	2025-12-23T09:12:27.917882	Click for Larger Image.	Exterior and Entry of pillbox	-157.92891241584499, 21.657173760663198



Photo Number	Date & Time	Image Link	Comments	GPS Location
7	2025-12-23T08:56:05.246973	Click for Larger Image.	Parking area near Comfort Station A	-157.928959181598, 21.659922072696499



Photo Number	Date & Time	Image Link	Comments	GPS Location
8	2025-12-23T09:18:32.464844	Click for Larger Image.	Retaining wall outside in the Vicinity of Comfort Station B	-157.92902774512399, 21.657217813471



Photo Number	Date & Time	Image Link	Comments	GPS Location
9	2025-12-23T09:15:43.748514	Click for Larger Image.	Southeast corner of PA near Comfort Station B	-157.928945144957, 21.657126932356



Photo Number	Date & Time	Image Link	Comments	GPS Location
10	2025-12-23T09:02:21.478748	Click for Larger Image.	Comfort Station B	



Photo Number	Date & Time	Image Link	Comments	GPS Location
11	2025-12-23T08:59:40.911907	Click for Larger Image.	Parking area within southern portion of project area for access to Camp Area B	-157.929417506449, 21.6581587269316



Photo Number	Date & Time	Image Link	Comments	GPS Location
12	2025-12-23T08:59:40.911907	Click for Larger Image.	Parking area within southern portion of project area	-157.929417506449, 21.6581587269316



Photo Number	Date & Time	Image Link	Comments	GPS Location
13	2025-12-23T09:05:56.815558	Click for Larger Image.	Comfort Station B	-157.92902984117501, 21.657163696686698



Photo Number	Date & Time	Image Link	Comments	GPS Location
14	2025-12-23T09:09:37.755296	Click for Larger Image.	Pill box?	-157.928891367576, 21.657232194527399



Photo Number	Date & Time	Image Link	Comments	GPS Location
15	2025-12-23T08:26:18.809187	Click for Larger Image.	Western wooded corner of PA	-157.93014372855399, 21.659621875248099



Photo Number	Date & Time	Image Link	Comments	GPS Location
16	2025-12-23T09:08:03.795688	Click for Larger Image.	Pillbox?	-157.92890503442101, 21.657144148221601



Photo Number	Date & Time	Image Link	Comments	GPS Location
17	2025-12-23T08:45:39.494595	Click for Larger Image.	Comfort Station A	-157.92838315565899, 21.660039327702702

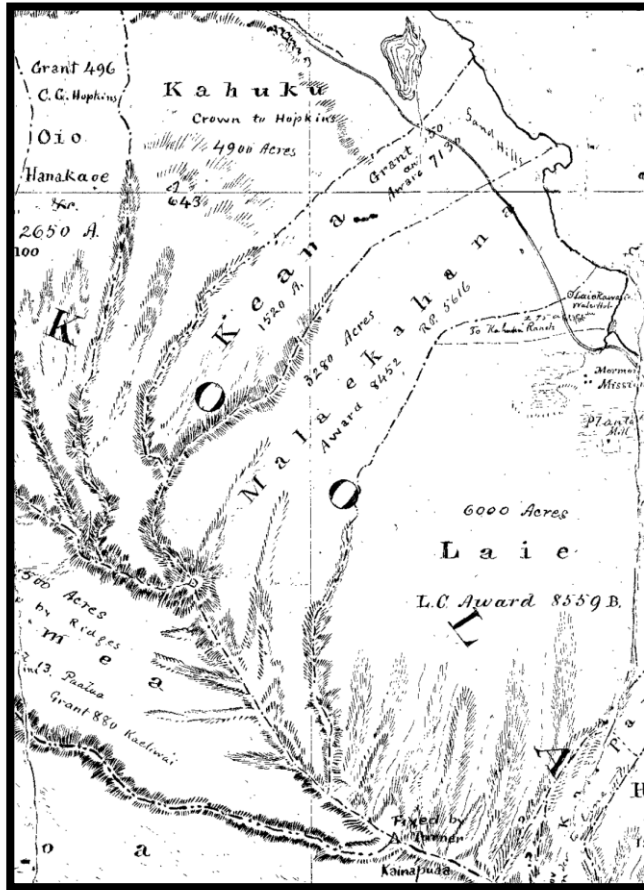


Photo Number	Date & Time	Image Link	Comments	GPS Location
18	2025-12-23T09:03:00.4008	Click for Larger Image.	Comfort Station A	-157.92928358941001, 21.657508174533699



Appendix D

Cultural Impact Assessment



Cultural Impact Assessment
for the Mālaekahana State Park Improvements,
Lā'iewai-Mālaekahana Ahupua'a, Ko'olauloa District, O'ahu Island
TMKs: [1] 5-6-001:004

Prepared by



December 2025

Authors and Lead Researchers

Trisha Kehaulani Watson, J.D., Ph.D.

Assistant Researchers and Authors

Nathan J. DiVito, B.A.

Frederick LaChance, B.A.

Matthew Kawaiola Sproat

Associate Researchers and Authors

Kepa Maly

Onaona Maly

Note on Hawaiian language usage

In keeping with other Hawaiian scholars, we do not italicize Hawaiian words. Hawaiian is both the native language of the paeʻāina of Hawaiʻi and an official language of the State of Hawaiʻi. Some authors will leave Hawaiian words italicized if part of a quote; we do not. In the narrative, we use diacritical markings to assist our readers, except in direct quotes, in which we keep the markings used in the original text. We provide translations contextually when appropriate.

Note on accessibility

In conformance with state and federal law, Honua Consulting prepares and provides all cultural impact assessment deliverables in formats that are compliant with the Americans with Disabilities Act (ADA). Reports and materials are developed to support accessibility, readability, and equitable access to information for diverse audiences and users.

Front Cover Credit

State of Hawaii (Territory Government)

1876 Hawaii Government Survey Map, No. 1380.

Executive Summary

At the request of G70, on behalf of the State of Hawaiʻi Department of Land and Natural Resources (DLNR), Honua Consulting, LLC prepared this Cultural Impact Assessment (CIA) for the proposed Mālaekahana State Recreation Area Improvements within the Kalanai Section of Mālaekahana State Recreation Area, located in the ahupuaʻa of Mālaekahana, Koʻolauloa District, Island of Oʻahu (TMK [1] 5-6-001:004).

The purpose of this CIA is to identify cultural, historic, and natural resources within the project area and surrounding cultural landscape; assess the extent to which traditional and customary Native Hawaiian practices are exercised in the area; evaluate potential impacts of the proposed improvements on those practices and resources; and identify feasible measures to avoid, minimize, or mitigate impacts, consistent with the analytical framework established in *Ka Paʻakai o ka ʻĀina v. Land Use Commission* and the requirements of Act 50, Session Laws of Hawaiʻi 2000.

The proposed project involves improvements to existing, aging park infrastructure within previously developed areas of the state park. Improvements include replacement of comfort stations and wastewater systems, construction of an open-air pavilion, upgrades to camping facilities, including ADA-accessible sites, establishment of limited campervan and group camping areas, and minor circulation and site amenity enhancements. No shoreline hardening, expansion of the park footprint, or new shoreline access points are proposed. All ground-disturbing activities are intended to occur within areas that have experienced prior disturbance to the extent practicable.

Research conducted for this CIA included an extensive review of Hawaiian-language newspapers, archival materials, historic maps, prior studies, and ethnographic documentation, as well as interviews with cultural practitioners and individuals with long-standing connections to the area. Hawaiian-language sources were reviewed by qualified researchers to ensure that Native Hawaiian voices, ʻike kupuna, and place-based knowledge informed the analysis. Particular attention was given to moʻolelo ʻāina, place names, traditional land and marine use, and the identification of both tangible and intangible cultural resources.

Mālaekahana is recognized as a culturally significant coastal ahupuaʻa with a long history of Native Hawaiian habitation, subsistence, spiritual practice, and stewardship. The area is associated with numerous wahi pana, moʻo traditions, fishing shrines (kūʻula), freshwater sources, offshore islets, and storied locations documented in oral traditions and historic records. Mālaekahana is also closely linked to prominent moʻolelo, including the traditions of Manuahi and Laʻieikawai, which situate the ahupuaʻa within a broader genealogical, political, and spiritual landscape of Koʻolauloa.

Traditional and customary practices historically associated with the project area and its surroundings include fishing, shoreline and marine resource gathering, limu collection, surfing, travel along coastal trails, ceremonial practices, kilo (environmental observation), lāʻau lapaʻau, mele, and continued use of the shoreline for family-based recreation and cultural transmission. While contemporary use patterns reflect the area's role as a state park,

**Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupuaʻa, Koʻolaupoko District, Oʻahu Island**

these practices remain culturally relevant and are supported by continued access to the shoreline and nearshore environment.

Based on the analysis presented in this CIA, the proposed Mālaekahana State Recreation Area Improvements are not expected to cause significant adverse impacts on identified cultural resources, traditional and customary practices, or cultural landscapes, provided that appropriate Best Management Practices (BMPs) are implemented. The project primarily involves upgrading existing facilities within an established recreational area and does not propose changes that would restrict access, alter shoreline processes, or disturb known cultural sites.

However, ethnographic evidence and cultural context indicate that construction activities can adversely affect sensitive biocultural resources if not carefully managed. Accordingly, this CIA recommends implementing culturally informed BMPs, including construction monitoring protocols, measures to protect coastal and marine resources, minimization of disturbance outside established footprints, and continued coordination with DLNR and cultural practitioners as project design progresses.

This CIA concludes that, with the incorporation of recommended BMPs and continued adherence to state environmental and cultural review processes, the proposed improvements can be implemented in a manner that is consistent with the protection of Native Hawaiian rights, respects Mālaekahana's cultural significance, and supports the long-term stewardship of this important coastal landscape.

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS 8

1.0 INTRODUCTION..... 9

 1.1 PROJECT DESCRIPTION 12

 1.2 BACKGROUND 13

 1.3 GEOGRAPHIC EXTENT 14

 1.4 GOAL OF CULTURAL IMPACT ASSESSMENT 14

 1.5 REGULATORY BACKGROUND..... 14

 1.6 COMPLIANCE 15

2.0 METHODOLOGY..... 17

 2.1 IDENTIFYING TRADITIONAL OR CUSTOMARY PRACTICES 20

 2.2 TRADITIONAL KNOWLEDGE, OR ETHNOSCIENCE, AND THE IDENTIFICATION OF CULTURAL RESOURCES 21

 2.3 MO‘OLELO ‘ĀINA: NATIVE TRADITIONS OF THE LAND 22

 2.4 HISTORIC MAPS..... 22

 2.5 ARCHAEOLOGICAL STUDIES 23

 2.6 ETHNOGRAPHIC METHODOLOGY 23

3.0 DESCRIPTION OF PROJECT AREA..... 24

 3.1 BACKGROUND 24

 3.2 PLACE NAMES 25

 3.2.1 *Moku‘auia* 28

 3.2.2 *Kīhewamoku* 29

 3.3 PRE-CONTACT PERIOD..... 30

 3.3.1 *Legend of Manuahi* 32

 3.3.2 *Romance of Laieikawai*..... 38

 3.3.3 *Laniloa, The Mo‘o*..... 40

 3.3.4 *Story of Punaaiikoe* 41

 3.3.5 *Legend of Manonihokahi* 42

 3.4 HISTORIC PERIOD 43

4.0 CULTURAL RESOURCES 53

 4.1 HISTORIC PROPERTIES AND CULTURAL SITES..... 53

 4.2 NATURAL RESOURCES WITH CULTURAL SIGNIFICANCE..... 53

 4.2.1 *Flora*..... 55

 4.2.2 *Fauna* 55

 4.2.3 *Water Resources* 55

 4.2.4 *Rains* 57

 4.2.5 *Winds*..... 58

 4.3 INTANGIBLE CULTURAL RESOURCES 58

 4.3.1 *‘Ōlelo No‘eau* 59

 4.3.2 *Mele*..... 59

5.0 ETHNOGRAPHIC DATA..... 61

 5.1 1970 ORAL HISTORY WITH WILLIAM ISAAC KANAKANUI AND MALAEA LAHELA KANAKANUI 61

 5.2 1979 ORAL HISTORY OF BELLA LINKEE AND RUBY ENOS..... 62

 5.3 INTERVIEW WITH TAU HANNEMAN..... 63

 5.4 INTERVIEW WITH KEALI‘I BUSH 66

**Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupua‘a, Ko‘olaupia District, O‘ahu Island**

5.5 INTERVIEW WITH MATTHEW SPROAT	69
6.0 TRADITIONAL OR CUSTOMARY PRACTICES HISTORICALLY IN THE STUDY AREA AND SURROUNDING AREA	73
6.1 MO‘OLELO	73
6.1.1 Mo‘o Traditions.....	74
6.2 HABITATION.....	74
6.3 TRAVEL AND TRAIL USAGE.....	75
6.4 FARMING	77
6.5 LĀ‘AU LAPA‘AU	77
6.6 KILO.....	78
6.7 CEREMONIAL PRACTICES.....	80
6.8 HAKU MELE, HAKU OLI, AND HULA	80
6.9 RANCHING AND PANIOLA CULTURE.....	81
6.10 SURFING	83
6.11 FISHING, SPEARFISHING, AND LIMU PICKING	84
6.12 BEACH ACCESS	85
7.0 IMPACT ASSESSMENT	87
7.1 IMPACTS TO FLORA	87
7.2 IMPACTS TO FAUNA	87
7.3 IMPACTS TO HISTORIC SITES	87
7.4 IMPACTS TO INTANGIBLE CULTURAL RESOURCES	87
7.5 IMPACTS TO CULTURAL PRACTICES	88
7.6 CUMULATIVE AND INDIRECT IMPACTS	88
7.7 MITIGATION AND BEST MANAGEMENT PRACTICES	88
8.0 KA PA‘AKAI ANALYSIS	89
9.0 CONCLUSION	92
10.0 REFERENCES	93
APPENDIX I: GLOSSARY OF HAWAIIAN TERMS	97

List of Figures

Figure 1. Project Area shown in red within the Kalanai Section of Mālaekahana State Recreation Area..... 9

Figure 2. Tax Map Key (TMK) showing the project area..... 10

Figure 3. Aerial image showing the project area. 11

Figure 4. Diagram of elements that contribute to traditional or customary practices (Honua Consulting)..... 20

Figure 5. USGS 7.5-minute topographic map (Kahuku Quadrangle) showing the project area at Mālaekahana, Ko‘olauloa, O‘ahu, including Makahoa Point, Kalanai Point, and the Mālaekahana State Recreation Area, with the offshore islets of Kihewamoku, Moku‘auia, and Pulemoku Rock, and the ahupua‘a of Lā‘ie to the south. Source: USGS, via TopoZone (<https://www.topozone.com/map-print/?lat=21.6735013&lon=-157.933445>). 25

Figure 6. 1884 map showing the neighboring Mormon Settlement. 47

Figure 7. 1930 map showing the railroad running through the area..... 49

Figure 8. 1952 map showing the project area and growth in the area. 50

Figure 9. 1983 map showing the Malaekahana State Recreation Area. 52

List of Tables

Table 1. List of Inoa ‘Āina (Place Names) in the vicinity of Mālaekahana 26

Abbreviations and Acronyms

APE: Area of Potential Effect
BMP: Best Management Practices
CIA: Cultural Impact Assessment
DLNR: Department of Land and Natural Resources
EA: Environmental Assessment
EAL: Environment action level
EIS: Environmental Impact Statement
HAR: Hawaii Administrative Rules
HC&S: Hawaiian Commercial & Sugar Company
HRS: Hawaii Revised Statutes
HSL: Hawaii State Legislature
ILK: Indigenous local knowledge
LCA: Land commission award
LRFI: Literature Review and Field Investigation
NCSS: National Cooperative Soil Series
OHA: Office of Hawaiian Affairs
SHPD: State Historic and Preservation Division
TEK: Traditional ecosystem knowledge
TMK: Tax Map Key
USGS: United States Geological Survey

1.0 Introduction

At the request of G70, on behalf of the State of Hawaii Department of Land and Natural Resources, Honua Consulting, LLC prepared a Cultural Impact Assessment (CIA) for the proposed Mālaekahana State Recreation Area Improvements within the Kalanai Section of Mālaekahana State Recreation Area. The Project is located on TMK [1] 5-6-001:004.



Figure 1. Project Area shown in red within the Kalanai Section of Mālaekahana State Recreation Area.

Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupua'a, Ko'olauloa District, O'ahu Island

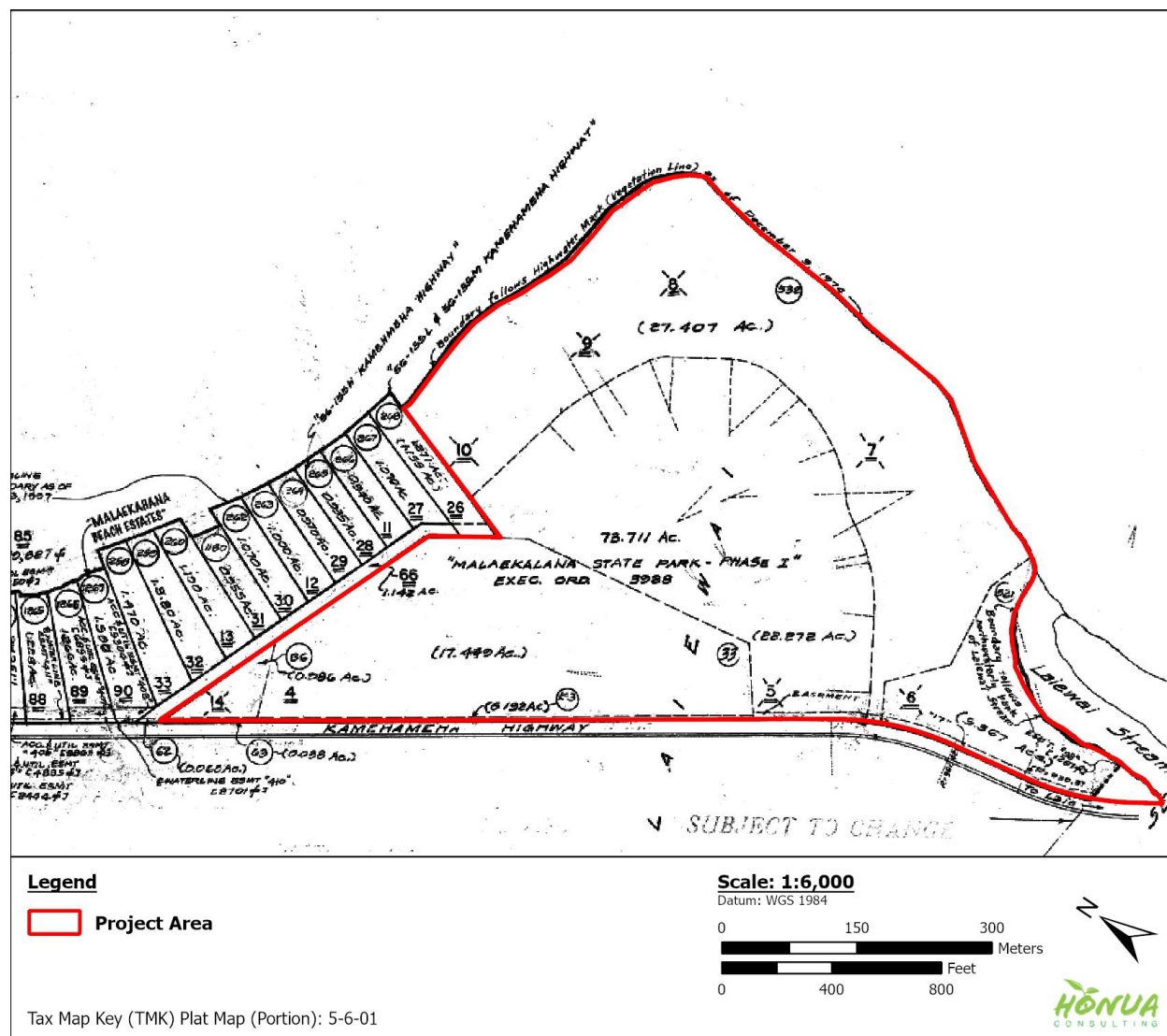


Figure 2. Tax Map Key (TMK) showing the project area.

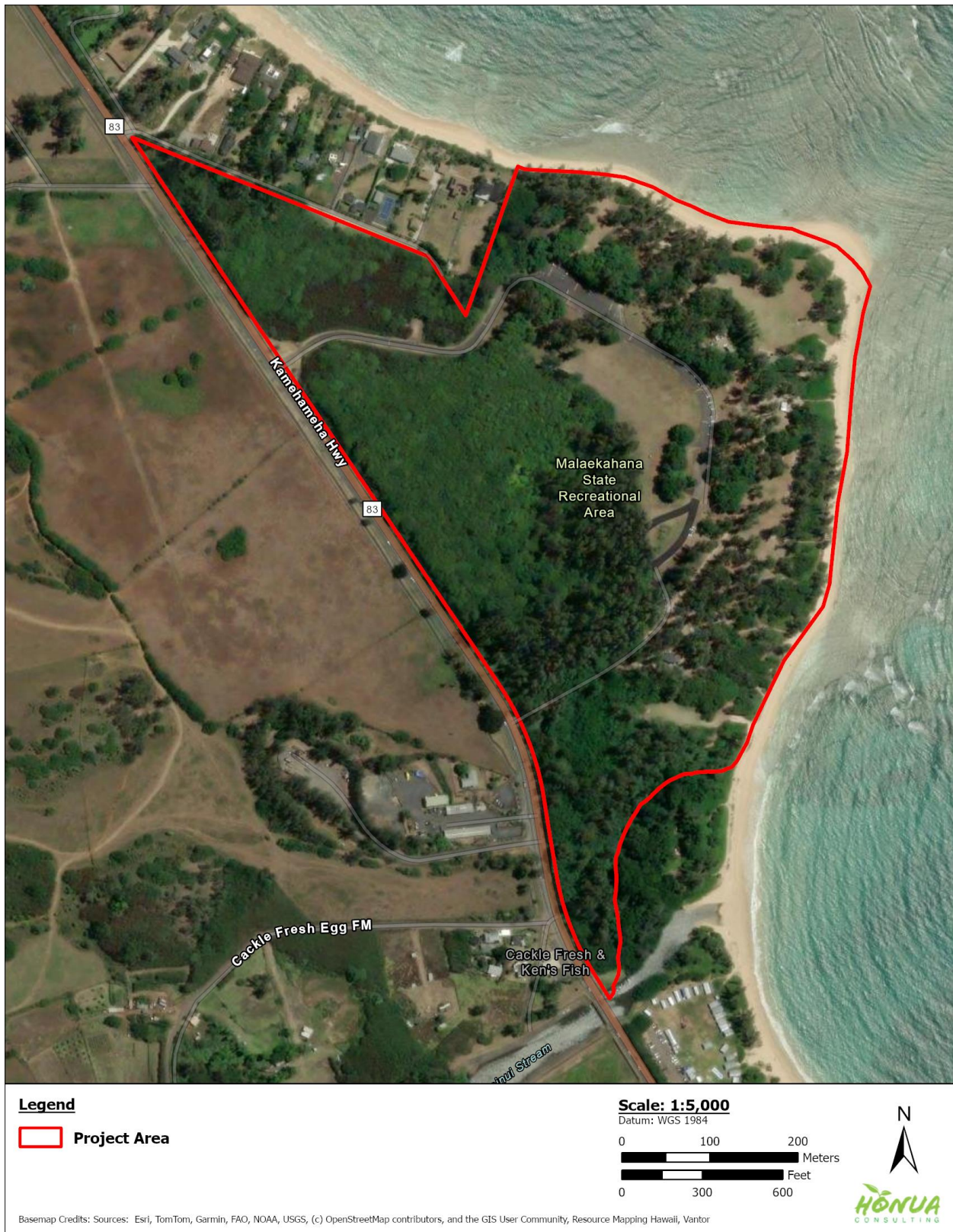


Figure 3. Aerial image showing the project area.

1.1 Project Description

The proposed project involves improvements to the Kalanai Section of Mālaekahana State Recreation Area, located along the northeastern shoreline of O‘ahu within the ahupua‘a of Mālaekahana. The project area includes lands identified as TMK (1) 5-6-001:004 and extends mauka of the shoreline and makai of Kamehameha Highway. The area supports a range of recreational uses, including day use, overnight camping, shoreline access, and associated outdoor activities, and is part of the Hawai‘i State Parks system.

Existing park facilities within the Kalanai Section are aging and approaching the end of their useful life. The purpose of the project is to upgrade and reconfigure existing infrastructure to better serve current and future park users, improve accessibility, and reduce environmental impacts associated with ongoing recreational use, while maintaining the area’s open-space and coastal character. The proposed improvements would remain within the existing park footprint, and building sizes and design details would be refined during subsequent planning and environmental review phases. New facilities are anticipated to be similar in scale and location to existing structures.

Proposed activities include replacing two existing comfort stations serving Camp Areas A and B and upgrading the individual wastewater systems to meet current health and environmental standards. An open-air pavilion is proposed to support both day-use and camping activities. Additional site amenities would include pot-washing stations and rinsing showers intended to improve sanitation and reduce improper wastewater disposal. Existing maintenance and service areas, including the maintenance shed and enclosure, would continue to be used, with minor upgrades as needed.

Camping area improvements would include the reconfiguration of Camp Area A into furnished campsites, including the addition of two updated ADA-accessible sites. The project also proposes the addition of three to four campervan sites within the existing campground footprint and the establishment of a large group campground area to better accommodate organized group use and reduce informal or dispersed camping.

Site circulation and use areas would generally remain as they exist today, with retention of day-use and overnight parking areas and minor adjustments to internal circulation routes to improve safety, accessibility, and overall site functionality. Shoreline access would continue to be provided using existing access points, and no shoreline hardening or expansion is proposed.

All construction and ground-disturbing activities would be focused on previously developed or disturbed areas to the extent practicable. The project would be subject to applicable state and federal environmental review requirements, as well as cultural and historic preservation review processes. Additional permits and approvals, including wastewater system approvals and shoreline-related permits, would be obtained prior to construction.

The project is currently in an early consultation and planning phase. Preparation of a draft environmental assessment is anticipated in 2026, followed by completion of a final environmental assessment after agency review and public input.

The project area is situated within Mālaekahana Ahupua‘a (traditional land division) along the coastal plain of the northern windward coast of O‘ahu.

1.2 Background

The State and its agencies have an affirmative obligation to preserve and protect Native Hawaiians’ customarily and traditionally exercised rights to the extent feasible.¹ State law further recognizes that the cultural landscapes provide living and valuable cultural resources where Native Hawaiians have and continue to exercise traditional and customary practices, including hunting, fishing, gathering, and religious practices. In *Ka Pa‘akai*, the Hawai‘i Supreme Court provided government agencies an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development interests. This is accomplished through:

- 1) The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area;
- 2) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
- 3) The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.

The appropriate information concerning the project area has been collected, focusing on areas near or adjacent to the project area. A thorough analysis of this project and potential impacts to cultural resources, historical resources, and archaeological sites is included in this survey.

This ethnographic survey provides an overview of cultural and historic resources in the project area using thorough literature review, community and cultural practitioner consultation, and high-level, project-specific surveys. This survey focuses on identifying areas in which disturbance should be avoided or minimized to reduce impacts to historic properties or culturally important features. The paramount goal is to minimize impact through avoidance of sensitive areas and mitigation if avoidance is not feasible.

¹ Article XII, Section 7 of the Hawai‘i State Constitution, *Ka Pa‘akai O Ka ‘Āina v. Land Use Commission*, 94 Haw. 31 [2000] (*Ka Pa‘akai*), Act 50 SLH 2000.

1.3 Geographic Extent

The geographic extent for impacts to cultural resources and historic properties includes the project area and localized surroundings. This CIA also reviews some of the resources primarily covered by the regulatory review. It primarily researches and reviews the range of biocultural resources identified through historical documents, traditional knowledge, information found in the Hawaiian language historical cache, and oral histories and knowledge collected from cultural practitioners and experts.

The best practice for ethnographic surveys is to define a geographic extent beyond the identified or typical boundaries of the geographic project area. The recommended area is typically the size of the traditional land area (ahupua‘a) or region (moku), but this can be larger or smaller depending on what best helps to identify the resources appropriately.

The geographic extent of the survey is based on the position that the “Project Area” is part of an existing or former cultural landscape or cultural landscapes, and that therefore it is most appropriate to set and study the proposed alternatives within that cultural context. This approach is not to imply that an eligible cultural landscape currently exists in the region.

1.4 Goal of Cultural Impact Assessment

This cultural impact assessment looks to partially fulfill the requirement of taking into account the Project’s potential impacts on historic and cultural resources and, at a minimum, describe: a) any valued cultural, historic, or natural resources in the area in questions, including the extent to which traditional and customary native Hawaiian rights are exercised in the area, b) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the Project; and c) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist.

1.5 Regulatory Background

Articles IX and XII of the State Constitution, other state laws, and the courts of the state require government agencies to protect and preserve cultural beliefs, practices, and resources of Kānaka ‘Ōiwi (Native Hawaiians) and other ethnic groups. To assist decision makers in the protection of cultural resources, Chapter 343, HRS and Hawai‘i Administrative Rules (HAR) § 11-200.1 rules for the environmental impact assessment process require project proponents to assess proposed actions for their potential impacts to cultural properties, practices, and beliefs.

This process was clarified by Act 50, Session Laws of Hawai‘i (SLH) 2000. Act 50 recognized the importance of protecting Native Hawaiian cultural resources and required that EAs include the disclosure of the effects of a proposed action on the cultural practices of the community and state, and the Native Hawaiian community in particular. Specifically, the Environmental Council suggested that the CIAs include information on the practices and beliefs of a particular cultural or ethnic group or groups. Such information may be obtained through public scoping, community meetings, ethnographic interviews, and oral histories.

It is important to note that while similar in their areas of studies, archaeological surveys and CIAs are concerned with distinct and different foci. Archaeological studies are primarily concerned with historic properties and tangible heritage, whereas CIAs look at cultural practices and beliefs, which can be associated with a specific location, but also often intangible in nature.

1.6 Compliance

The State and its agencies have an affirmative obligation to preserve and protect Native Hawaiians’ customarily and traditionally exercised rights to the extent feasible.² State law further recognizes that the cultural landscapes provide living and valuable cultural resources where Native Hawaiians have and continue to exercise traditional and customary practices, including hunting, fishing, gathering, and religious practices. In *Ka Pa‘akai*, the Hawai‘i Supreme Court provided government agencies an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development interests. This is accomplished through:

- 1) The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area;
- 2) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
- 3) The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.

While not attached to a HRS Chapter 343 action, this CIA was prepared under HRS Chapter 343 and Act 50 SLH 2000 as those are the prevailing standards and best practices for CIAs. The appropriate information concerning the ahupua‘a of Mālaekahana has been collected, focusing on areas near or adjacent to the project area. A thorough analysis of this project and

² Article XII, Section 7 of the Hawai‘i State Constitution, *Ka Pa‘akai O Ka ‘Āina v. Land Use Commission*, 94 Haw. 31 [2000] (*Ka Pa‘akai*), Act 50 SLH 2000.

potential impacts to cultural resources, historical resources, and archaeological sites is included in this assessment.

The present analyses of archival documents, oral traditions (oli or chants, mele or songs, and/or hula or dance texts), and Hawaiian language sources including books, manuscripts, and newspaper articles, are focused on identifying recorded cultural and archaeological resources present on the landscape, including: Hawaiian and non-Hawaiian place names; landscape features (ridges, gulches, cinder cones); archaeological features (kuleana parcel walls, house platforms, shrines, heiau or places of worship, etc.); culturally significant areas (viewsheds, unmodified areas where gathering practices and/or rituals were performed); and significant biocultural resources. The information gathered through research helped to focus interview questions on specific features and elements within the project area.

Interviews with lineal and cultural descendants are instrumental in procuring information about the project area’s transformation through time and changing uses. Interviews were conducted with recognized cultural experts and summaries of those interviews are included herein.

2.0 Methodology

The approach to developing the CIA is as follows:

- 1) Gather Best Information Available
 - a) Gather historic cultural information from stories and other oral histories about the affected area to provide cultural foundation for the report;
 - b) Inventory as much information as can be identified about as many known cultural, historic, and natural resources, including previous archaeological inventory surveys, CIAs, etc. that may have been completed for the possible range of areas; and
 - c) Update the information with interviews with cultural or lineal descendants or other knowledgeable cultural practitioners.
- 2) Identify Potential Impacts to Cultural Resources
- 3) Develop Reasonable Mitigation Measures to Reduce Potential Impacts
 - a) Involve the community and cultural experts in developing culturally appropriate mitigation measures; and
 - b) Develop specific Best Management Practices (BMPs), if any are required, for conducting the project in a culturally appropriate and/or sensitive manner as to mitigation and/or reduce any impacts to cultural practices and/or resources.

While numerous studies have been conducted on this area, very few have effectively utilized Hawaiian language resources and Hawaiian knowledge. This appears to have impacted modern understanding of this location, as many of the relevant documents are native testimonies given by Kanaka Hawaiʻi (Hawaiians) who lived on this land.

While hundreds of place names and primary source historical accounts (from both Hawaiian and English language narratives) are cited on the following pages, it is impossible to tell the whole story of these lands in any given manuscript. A range of history, spanning the generations, has been covered. Importantly, the resources herein are a means of connecting people with the history of their communities—that they are part of that history. Knowledge of place will, in turn, promote appreciation for place and encourage acts of stewardship for the valued resources that we pass on to the future.

Background research for the literature review was conducted using materials obtained from the State Historic Preservation Division (SHPD) library in Kapolei and the Honua Consulting LLC report library. On-line materials consulted included the Ulukau Electronic Hawaiian Database (www.ulukau.com), Papakilo Database (www.papakilodatabase.com), the State Library on-line (<http://www.librarieshawaii.org/Serials/databases.html>), and Waihona ʻĀina Māhele database (<http://www.waihona.com>). Hawaiian terms and place names were translated using the on-line Hawaiian dictionaries (Nā Puke Wehewehe ʻŌlelo Hawaiʻi)

(www.wehewehe.com), *Place Names of Hawaiʻi* (Pukui et al. 1974), and *Hawaiʻi Place Names* (Clark 2002). Historic maps were obtained from the State Archives, State of Hawaiʻi Land Survey Division website (<http://ags.hawaii.gov/survey/map-search/>), UH-Mānoa Maps, Aerial Photographs, and GIS (MAGIS) website (<http://guides.library.manoa.hawaii.edu/magis>). Maps were geo-referenced for this report using ArcGIS 10.3. GIS is not 100% precise and historic maps were created with inherent flaws; therefore, geo-referenced maps should be understood to have some built-in inaccuracy.

While conducting the research, primary references included, but were not limited to: land use records, including the Hawaiian L.C.A. records from the Māhele ʻĀina (Land Division) of 1848; the Boundary Commission Testimonies and Survey records of the Kingdom and Territory of Hawaiʻi; and historical texts authored or compiled by: David Malo (1987); Samuel M. Kamakau (1964, 1991, 1992); records of the American Board of Commissioners of Foreign Missions (A.B.C.F.M.) (1820–1860); Charles Wilkes (1845); Alexander & Preston (1892–1894); Abraham Fornander (1916–1919); and many other native and foreign writers. The study also includes several native accounts from Hawaiian language newspapers (primarily compiled and translated from Hawaiian to English by K. Maly), and historical records authored by nineteenth century visitors, and residents of the region.

Historical and archival resources were located in the collections of the Hawaiʻi State Archives, Survey Division, Land Management Division, Survey Division, and Bureau of Conveyances; the Bishop Museum Library and Archives; the Hawaiian Historical Society and the Hawaiian Mission Children’s Society Library; University of Hawaiʻi-Hilo Moʻokini Library; the National Archives and Records Administration (NARA), Maryland; the Library of Congress, Washington D.C.; the National Oceanic and Atmospheric Administration National Library, Maryland; the Smithsonian Institution Natural History and National Anthropological Archives libraries, Washington, D.C.; the Houghton Library at Harvard; the United States Geological Survey (USGS) Library, Denver; the Paniolo Preservation Society and Parker Ranch collections; private family collections; and in the collection of Kumu Pono Associates LLC. This information is generally cited in categories by chronological order of the period depicted in the narratives.

M. P. Nogelmeier (2010) discusses the adverse impacts of methodology that fails to properly research and consider Hawaiian language resources. He strongly cautions against a mono-rhetorical approach that marginalizes important native voices and evidence from consideration, specifically in the field of archaeology. For this reason, Honua Consulting consciously employs a poly-rhetorical approach, whereby all data, regardless of language, is researched and considered. To fail to access these millions of pages of information within the Hawaiian language caché could arguably be a violation of Act 50, as such an approach would fundamentally fail to gather the best information available, especially considering the

voluminous amounts of historical accounts available for native tenants in the Hawaiian language.

Hawaiian culture views natural and cultural resources as largely being one and the same: without the resources provided by nature, cultural resources could and would not be procured. From a Hawaiian perspective, all natural and cultural resources are interrelated, and all natural and cultural resources are culturally significant. Kepā Maly (2001), ethnographer and Hawaiian language scholar, points out, “In any culturally sensitive discussion on land use in Hawai'i, one must understand that Hawaiian culture evolved in close partnership with its natural environment. Thus, Hawaiian culture does not have a clear dividing line of where culture ends and nature begins” (Maly 2001:1). As a leading researcher and scholars on Hawaiian culture, Maly, along with his wife, Onaona, have conducted numerous ground-breaking studies on cultural histories throughout Hawai'i. A substantial part of the archival research utilized in this study was previously compiled and published by Kepā and Onaona Maly, who have granted their permission to use this important work and are identified properly as associated authors and researchers to this study.

This study also specifically looks to identify intangible resources. Tangible and intangible heritage are inextricably linked (Bouchenaki 2003). Intangible cultural resources, also identified as intangible cultural heritage (ICH), are critical to the perpetuation of cultures globally. International and human rights law professor Federico Lenzerini notes that, “At present, we are aware on a daily basis of the definitive loss—throughout the world—of language, knowledge, knowhow, customs, and ideas, leading to the progressive impoverishment of human society” (Lenzerini 2011:12). He goes on to warn that:

the rich cultural variety of humanity is progressively and dangerously tending towards uniformity. In cultural terms, uniformity means not only loss of cultural heritage—conceived as the totality of perceptible manifestations of the different human groups and communities that are exteriorized and put at the others' disposal—but also standardization of the different peoples of the world and of their social and cultural identity into a few stereotyped ways of life, of thinking, and of perceiving the world. Diversity of cultures reflects diversity of peoples; this is particularly linked to ICH, because such a heritage represents the living expression of the idiosyncratic traits of the different communities. Preservation of cultural diversity, as emphasized by Article 1 of the UNESCO Universal Declaration on Cultural Diversity, ‘is embodied in the uniqueness and plurality of the identities of the groups and societies making up humankind’. Being a ‘source of exchange, innovation and creativity’, cultural diversity is vital to humanity and is inextricably linked to the safeguarding of ICH. Mutual recognition and respect for cultural diversity—and, *a fortiori*, appropriate safeguarding of the ICH of the diverse peoples making up the world—is essential for promoting

harmony in intercultural relations, through fostering better appreciation and understanding of the differences between human communities. (Lenzarini 2011:103)

Therefore, tradition and practice, as elements of Hawaiian ICH, are essential to the protection of Hawaiian rights and the perpetuation of the Hawaiian culture.

2.1 Identifying Traditional or Customary Practices

It is within this context that traditional or customary practices are studied. The concept of traditional or customary practices can often be a challenging one for people to grasp. Traditional or customary practices can be defined as follows:



Figure 4. Diagram of elements that contribute to traditional or customary practices (Honua Consulting)

The first element is knowledge. This has been referred to as traditional ecological knowledge (TEK), Indigenous local knowledge (ILK), or ethnoscience. In the context of this study, it is the information, data, knowledge, or expertise that Native Hawaiians or local communities possess about an area's environment. In a traditional context, this would have included information Hawaiians possessed in order to have the skills to utilize the area's resources for a range of purposes, including, but not limited to, travel, food, worship or habitation. This element is largely intangible.

The second element are the resources themselves. These are primarily tangible resources, either archaeological (e.g., habitation structures, walls) or natural (e.g., plants, animals). These can also be places, such as a sacred or culturally important sites or wahi pana. Sometimes these wahi pana are general locations; this does not diminish their importance or value. Nonetheless, it is important to recognize that potential eligibility as a "historic site" on the National Register of Historic Places (NRHP) would require identifiable boundaries of a site.

The third element is access. The first two elements alone are not enough to allow for traditional or customary practices to take place. The practitioners must have access to the resource in order to be able to practice their traditional customs. Access does not just mean the ability to physically access a location, but it also means access to resources. For example,

if a particular plant is used for medicinal purposes, there needs to be a sufficient amount of that plant available to practitioners for use. Therefore, an action that would adversely impact the population of a particular plant with cultural properties would impact practitioners' ability to access that plant. By extension, it would adversely impact the traditional or customary practice.

Traditional or customary practices are, therefore, the combination of knowledge(s), resource(s) and access. Each of these individual elements should be researched and identified in assessing any potential practices or impacts to said practices.

2.2 Traditional Knowledge, or Ethnoscience, and the Identification of Cultural Resources

The concept of ethnoscience was first established in the 1960s and has been defined “the field of inquiry concerned with the identification of the conceptual schemata that indigenous peoples use to organize their experience of the environment” (Roth 2019). Ethnoscience includes a wide range of subfields, includes, but is not limited to, ethnoecology, ethnobotany, ethnozology, ethnoclimatology, ethnomedicine and ethnopedology. All of these fields are important to properly identify traditional knowledge within a certain area.

Traditional Native Hawaiian practitioners were scientists and expert natural resource managers by necessity. Without modern technological conveniences to rely on, Hawaiians developed and maintained prosperous and symbiotic relationships with their natural environment for thousands of years. Their environments were their families, their homes, and their laboratories. They knew the names of every wind and every rain. The elements taught and inspired. The ability of Indigenous people to combine spirituality and science led to the formation of unique land-based methodologies that spurred unsurpassed innovation. Therefore, identifying significant places requires a baseline understanding of what made places significant for Hawaiians.

Hawaiians were both settlers and explorers. In *Plants in Hawaiian Culture*, B. Krauss explains: “Exploration of the forests revealed trees, the timber of which was valuable for building houses and making canoes. The forests also yielded plants that could be used for making and dying tapa, for medicine, and for a variety of other artifacts” (Krauss 1993). Analysis of native plants and resource management practices reveals the depth to which Hawaiians excelled in their environmental science practices:

[Hawaiians] demonstrated great ability in systematic differentiation, identification, and naming of the plants they cultivated and gathered for use. Their knowledge of the gross morphology of plants, their habits of growth, and the requirements for greatest yields is not excelled by expert agriculturists of more complicated cultures. They

worked out the procedures of cultivation for every locality, for all altitudes, for different weather conditions and exposures, and for soils of all types. In their close observations of the plants they grew, they noted and selected mutants (spores) and natural hybrids, and so created varieties of the plants they already had. Thus over the years after their arrival in the Islands, the Hawaiians added hundreds of named varieties of taro, sweet potatoes, sugarcane, and other cultivated plants to those they had brought with them from the central Pacific (Krauss 1993).

Thus, Native Hawaiians reinforced the biodiversity that continues to exist in Hawai‘i today through their customary traditional natural resource management practices.

The present analyses of archival documents, oral traditions (oli or chants, mele or songs, and/or hula dances and ha‘i mo‘olelo or storytelling performances), and Hawaiian language sources including books, manuscripts, and newspaper articles, are focused on identifying recorded cultural resources present on the landscape, including: Hawaiian and non-Hawaiian place names; landscape features (ridges, gulches, cinder cones); archaeological features (kuleana parcel walls, house platforms, shrines, heiau [places of worship], etc.); culturally significant areas (viewsheds, unmodified areas where gathering practices and/or rituals were performed); and significant biological, physiological, or natural resources. This research also looks to document the wide range of Hawaiian science that existed within the geographic extent.

2.3 Mo‘olelo ‘Āina: Native Traditions of the Land

Among the most significant sources of native mo‘olelo are the Hawaiian language newspapers which were printed between 1838 and 1948, and the early writings of foreign visitors and residents. Most of the accounts that were submitted to the papers were penned by native residents of areas being described and noted native historians. Over the last 30 years, Kepā Maly has reviewed and compiled an extensive index of articles published in the Hawaiian language newspapers, with particular emphasis on those narratives pertaining to lands, customs, and traditions. Many traditions naming places around Hawai‘i are found in these early writings. Many of these accounts describe native practices, the nature of land use at specific locations, and native mo‘olelo (history, narrative, story). Thus, we are given a means of understanding how people related to their environment and sustained themselves on the land.

2.4 Historic Maps

Historic maps are critically important to understanding Mālaekahana and the broader Ko‘olauloa region because they document how land, resources, and access were understood and organized over time. Early maps illustrate traditional ahupua‘a boundaries, trails, shorelines, and place names, providing insight into Native Hawaiian land tenure systems that linked upland and coastal resources. These maps help identify areas associated with

traditional agriculture, fisheries, and habitation that may no longer be visible on the modern landscape.

Historic maps also record changes resulting from the Māhele, plantation-era land divisions, ranching, and the later establishment of public lands and state parks. By comparing historic and contemporary maps, researchers can trace shoreline modification, road development, and shifts in land use that have affected cultural sites and natural resources. In a regulatory and preservation context, historic maps are essential tools for identifying potential historic properties, understanding cultural landscapes, and informing responsible planning. For Mālaekahana, they help situate the park within a continuous cultural and historical framework, reinforcing its significance as part of an enduring Koʻolaupia landscape rather than an isolated recreational area.

2.5 Archaeological Studies

A literature and field inspection has been completed by Honua Consulting (Monahan, 2026).

2.6 Ethnographic Methodology

Information from lineal and cultural descendants helps in procuring information about the project area's transformation over time and its changing uses. The present analyses of archival documents, oral traditions (including oli or chants, mele or songs), and/or hula dance), and Hawaiian language sources including books, manuscripts, and newspaper articles, are focused on identifying recorded cultural and archaeological resources present on the landscape, including: Hawaiian and non-Hawaiian place names; landscape features (ridges, gulches, cinder cones); archaeological features (kuleana parcel walls, house platforms, shrines, heiau or places of worship, etc.); culturally significant areas (viewsheds, unmodified areas where gathering practices and/or rituals were performed); and significant biocultural resources. The information gathered through research helped to focus interview questions on specific features and elements within the project area.

3.0 Description of Project Area

Mālaekahana State Recreation Area is a coastal park located on the northeastern shoreline of O‘ahu within the ahupua‘a of Mālaekahana, in the district of Ko‘olauloa. The park consists of two sections—the Kalanai Section and the Mahie Point Section—and this study is specific to the Kalanai Section. The park encompasses a broad sandy beach, coastal dunes, and nearshore waters fronting the Kaiwi Channel, with views toward Kualoa and the windward coastline. The project area is characterized by a relatively undeveloped shoreline compared to other areas of O‘ahu, retaining a rural setting that reflects long-standing patterns of land use and stewardship in Ko‘olauloa.

The shoreline at Mālaekahana consists of sandy beach interspersed with areas of rocky substrate and shallow nearshore reef. These coastal and marine environments have historically supported fishing and shoreline gathering practices and continue to function as important natural and cultural resources. Inland from the beach, the landscape transitions to open grassy areas and stands of coastal vegetation, with remnants of traditional land use and historic activities associated with ranching, agriculture, and recreation.

Mālaekahana State Recreation Area is widely used for camping, picnicking, and shoreline access, serving both local families and visitors. Despite its contemporary recreational use, the area remains closely associated with Native Hawaiian history and mo‘olelo, including traditions that recognize Mālaekahana as a wahi pana linked to kahuna practice and chiefly-era events. The park’s location within Ko‘olauloa situates it within a broader cultural landscape that includes traditional trails, fisheries, and agricultural lands extending mauka to makai.

Today, Mālaekahana State Recreation Area functions as both a public recreational resource and a culturally significant landscape, where ongoing use occurs within a setting shaped by generations of interaction between people, land, and ocean.

3.1 Background

Background research for the literature review was conducted using materials obtained from the State Historic Preservation Division (SHPD) library in Kapolei and the Honua Consulting LLC. report library. Online materials consulted included the Ulukau Electronic Hawaiian Database (www.ulukau.com, Soehren 2002-2010), Papakilo Database (www.papakilodatabase.com), the State Library online (<http://www.librarieshawaii.org/Serials/databases.html>), and Waihona ‘Aina Mahele database (<http://www.waihona.com>). Hawaiian terms and place names were translated using the on-line Hawaiian Dictionary (Nā Puke Wehewehe ‘Ōlelo Hawai‘i) (www.wehewehe.com) and Place Names of Hawaii (Pukui et

al. 1974). Historic maps were obtained from the State Archives, State of Hawai'i Land Survey Division website (<http://ags.hawaii.gov/survey/map-search/>), UH-Mānoa Maps, Aerial Photographs, and GIS (MAGIS) website (<http://guides.library.manoa.hawaii.edu/magis>). Maps were geo-referenced for this report using ArcGIS 10.3. GIS is not 100% precise and historic maps were created with inherent flaws; therefore, geo-referenced maps should be understood to have some built-in inaccuracy.

3.2 Place Names



Figure 5. USGS 7.5-minute topographic map (Kahuku Quadrangle) showing the project area at Mālaekahana, Ko'olauloa, O'ahu, including Makahoa Point, Kalanai Point, and the Mālaekahana State Recreation Area, with the offshore islets of Kihewamoku, Moku'auia, and Pulemoku Rock, and the ahupua'a of Lā'ie to the south. Source: USGS, via TopoZone (<https://www.topozone.com/map-print/?lat=21.6735013&lon=-157.933445>).

The entire property area and project area are located within the ahupua'a (traditional land division) of Mālaekahana. Mālaekahana is remembered in Hawaiian mo'olelo not only as a

place, but as the name of revered women whose genealogies and actions shaped the landscape. In the mo‘olelo of La‘ieikawai, Mālaekahana is identified as the mother of La‘ieikawai, anchoring the ahupua‘a within chiefly genealogy and feminine lineage. The name Mālaekahana also appears in other traditions, including a Waipi‘o mo‘olelo describing a chiefly woman of great beauty and spiritual power whose travels drew abundant fish across O‘ahu. These accounts reflect the enduring association of Mālaekahana with female leadership, movement, and abundance.

Mālaekahana has a rich and interesting cultural history, and many mo‘olelo and legends are associated with this ahupua‘a. Several Hawaiian place names are known for features of the Mālaekahana region and environment. Historic maps of the area show place names in the near vicinity. Table 1 lists place names in the vicinity of the project area, a description of the locations, their English translations, and sources of information. Selected names are also discussed below.

Table 1. List of Inoa ‘Āina (Place Names) in the vicinity of Mālaekahana

Place Name	Type of Feature	Definition / Description
Aahupalu	Cave	A cave feature within Mālaekahana; caves often served as shelters, refuge places, or storied locations associated with mo‘olelo.
Hāli‘i	Mo‘o	A place associated with a mo‘o (water guardian or supernatural being), indicating spiritual significance and a relationship to water or landscape features.
Hina Gulch	Stream (gulch)	A gulch containing a stream; the name Hina may reference the akua Hina, connecting the feature to cosmological traditions.
Kahakaiokaha	Mo‘o	Literally “the beach of Kaha”; associated with a mo‘o and indicating a coastal or nearshore spiritual presence.
Kailikahi	Mo‘o	A location associated with a mo‘o; the name suggests a single or distinctive ridge, current, or boundary.
Kalanainui	Mo‘o	“The great chief”; a mo‘o-associated place name suggesting chiefly or powerful presence tied to landscape.
Kalawaha	Mo‘o	A mo‘o place name; often associated with openings, pathways, or transitional spaces in the landscape.
Kalepilo	Mo‘o	A mo‘o-associated location; names of this type often mark sacred or kapu places connected to water.

Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupua‘a, Ko‘olaupia District, O‘ahu Island

Place Name	Type of Feature	Definition / Description
Kamapa	Kū‘ula	A fishing shrine; kū‘ula were places where offerings were made to ensure abundance and success in fishing.
Kauaku	Mo‘o	A mo‘o-associated place; “kau aku” can imply perching or resting, possibly indicating a lookout or boundary area.
Kawaiu	Mo‘o	“The twisted water”; a mo‘o place name tied to water movement, springs, or streams.
Kawaiuiki	Mo‘o	“The little twisted water”; a smaller or related feature to Kawaiu, also associated with a mo‘o.
Kihewamoku	Islet	A small offshore islet associated with Mālaekahana, forming part of the coastal seascape and traditional fishing grounds.
Kuele	Mo‘o	A mo‘o-associated place; names like Kuele may reference movement, currents, or shifting water.
Kukulumalalo	Mo‘o	A mo‘o place name; traditionally recorded in land and oral traditions associated with Mālaekahana.
Lamaloa Gulch	Stream (gulch)	A gulch with flowing water; gulches were important for agriculture, water access, and travel.
Luahinekua	Mo‘o	“The pit of the god’s wife”; a spiritually charged mo‘o place name suggesting sacred or kapu associations.
Lupepa	Mo‘o	A mo‘o-associated location; the name may refer to flatness or spreading, often linked to water or plains.
Makahoa Point	Point	A coastal point marking a prominent landform used for navigation, fishing, or boundary recognition. Written in Hawaiian language newspapers as Lae o Makahoa.
Makanikeoloi	Mo‘o	A mo‘o place name; such names often denote areas of caution, power, or guardianship.
Mālaekahana	Ahupua‘a	The traditional land division extending from uplands to sea, encompassing agricultural lands, streams, coastal resources, and nearshore fisheries.
Mālaekahana Stream	Stream	The primary stream flowing through the ahupua‘a, supporting agriculture, habitation, and ecological systems.
Niu	Kū‘ula	A fishing shrine associated with offerings and ritual practices to ensure marine abundance.
Olohanua	Mo‘o	A mo‘o-associated place name; may relate to movement, slipping, or dynamic water features.

Place Name	Type of Feature	Definition / Description
Pu‘ulu	Mo‘o	A mo‘o place name; “pu‘ulu” can suggest a cluster or mound, possibly referencing landform shape.
Ulenohu	Kū‘ula	A fishing shrine; indicates a location of ritual practice tied to fishing and ocean productivity.
Wā‘a	Mo‘o	“Canoe”; a mo‘o-associated place name suggesting travel, landing areas, or movement across land and sea.
Waiapuka	Spring	A freshwater spring; historically noted as an important water source and associated with caves and movement.
Waipunaea	Fishpond	A traditional Hawaiian fishpond, reflecting aquaculture practices and sophisticated coastal management.
Waipunaea	Mo‘o	A mo‘o-associated feature bearing the same name, reflecting layered meanings and multiple cultural associations.
Wawaekuia	Mo‘o	A mo‘o place name; “wāwae” (foot) may suggest movement, paths, or boundary crossings.

Several mo‘olelo pertaining to the Mālaekahana region have been recorded and include themes associated with mo‘o, supernatural beings, ‘awa cultivation, and the bountiful coastal fishing grounds. Interestingly, mention is made of Kaua‘i chiefs in several of the stories which may indicate possible familial or marriage connections to the area. The mo‘olelo were compiled in *Hawaiian Legends* by William Hyde Rice and in *Hawaiian Mythology* by Martha Beckwith, based on earlier compilations from early Hawaiian-language newspapers and by a variety of authors, including Samuel Kamakau and David Kalākaua (Rice 1923 and Beckwith 1970), and are included in Section 3.3.

The Mālaekahana includes small offshore islets, which are described below. These islets are part of the Mālaekahana cultural landscape, as they are associated with the area through mo‘olelo (see **Section 3.3.3** and **Section 6.1.1**). The five islets are named Malualai (also recorded as Mokuālai), Keauakaluapa‘a, Pulemoku, Mokuaniwa (also recorded as Moku‘auia), and Kīhewamoku (also recorded as Kukuiho‘olua). The most discussed in the written record are Moku‘auia and Kīhewamoku. Both are discussed further below.

3.2.1 Moku‘auia

Moku‘auia, located just off Kalanai Point at the eastern end of Mālaekahana Bay on O‘ahu’s northeastern coast, is closely associated with Mālaekahana through traditional subsistence use, coastal movement, and ‘ike place-based knowledge. It is commonly known as “Goat Island.” From Mālaekahana, Moku‘auia is clearly visible and historically functioned as a

reference point within the seascape, helping orient fishers, travelers, and residents navigating the nearshore waters. The island’s proximity made it part of Mālaekahana’s broader resource sphere, particularly for fishing, bird gathering, and seasonal observation of marine conditions. Oral traditions and place-based knowledge describe offshore islets like Moku‘auia not as isolated features, but as integral extensions of the ahupua‘a’s ecological system. Currents, winds, and fish movements around Moku‘auia would have been well understood by those living at Mālaekahana, informing when and where to fish along the shoreline or venture offshore. The relationship also reflects the Hawaiian practice of managing resources across land and sea as a connected whole, where the productivity of the nearshore waters depended on the health of upland and coastal areas. In this way, Moku‘auia reinforces Mālaekahana’s identity as a place defined not only by its land base, but by its enduring relationship to the ocean and offshore features that supported daily life and cultural practice. It is also known as “Goat Island,” as is referred to as such in the ethnographic data.

3.2.2 Kīhewamoku

Kīhewamoku, the small offshore islet fronting Mālaekahana on O‘ahu’s North Shore, has a documented history as a site of military training involving live ordnance, despite later denials by the military that such activities occurred there. English-language newspaper reporting from the early 1980s documents the discovery and controlled detonation of old bombs and unexploded munitions in waters off Kahuku, identifying the nearshore area surrounding Kīhewamoku as a location where military explosives remained decades after their original use. These reports acknowledge the presence of ordnance but frame it as legacy material rather than evidence of sustained training activity (Honolulu Star-Bulletin, June 19, 1982, p. 2).

In contrast, a much earlier Hawaiian-language newspaper account provides a clearer and more direct record. In 1922, *Ka Nupepa Kuokoa* described repeated artillery bombardment of Kīhewamoku, fired day and night from American military positions, explicitly identifying the islet as a target for live-fire exercises. That article situates the activity within lived community experience and eyewitness observation, leaving little ambiguity about Kīhewamoku’s use as a military training ground (*Ka Nupepa Kuokoa*, Vol. LXI, No. 33, August 17, 1922, p. 4). Together, these sources demonstrate that while later accounts minimized or obscured the extent of military use, Hawaiian-language newspapers preserved a contemporaneous and detailed record of what occurred on the landscape.

Kīhewamoku is associated with Mālaekahana through shared coastal use patterns and the recognition of offshore features as navigational, ecological, and cultural reference points. While not intensively accessed, it functions as part of a broader marine setting that supports reef health, fish habitat, and biodiversity along the northeast O‘ahu coast. Contemporary management emphasizes protection of marine resources through regulatory frameworks, community awareness, and broader conservation planning for nearshore ecosystems.

Kīhewamoku’s ongoing role highlights the shift from daily subsistence use to stewardship-based relationships, where preservation of marine function and habitat is prioritized to ensure long-term ecological resilience. This modern conservation context aligns with traditional values that emphasize restraint, observation, and intergenerational responsibility.

3.3 Pre-Contact Period

Mālaekahana is a traditional coastal ahupua‘a located within the moku of Ko‘olauloa on the northeastern shore of O‘ahu. Prior to Western contact, Mālaekahana formed part of a highly productive and culturally significant landscape extending from nearshore fisheries and sandy coastal lands mauka into the foothills of the Ko‘olau Range. Like other ahupua‘a in Ko‘olauloa, Mālaekahana was organized according to the traditional Hawaiian land tenure system, which integrated marine, agricultural, and forest resources into a single management unit overseen by ali‘i and konohiki and sustained by the labor and ‘ike of the maka‘āinana (Handy & Handy, 1972; Malo, 1951).

The coastal zone of Mālaekahana was a primary area of settlement and subsistence activity. Nearshore waters supported fishing for reef and pelagic species, as well as the gathering of limu and other marine resources. The sandy shoreline provided areas for canoe landings, fish processing, habitation, and ritual activity. In his archaeological survey of O‘ahu, McAllister documented multiple coastal features in and near Mālaekahana associated with traditional use, including fishing shrines and former pools of water, underscoring the importance of shoreline and nearshore environments to daily life (McAllister, 1933).

As population increased, land use expanded inland to support agricultural production, particularly wetland taro cultivation. McAllister recorded that Mālaekahana contained agricultural terraces irrigated by Kawaikāne (or Kawaikahāna) Stream, indicating intensive lo‘i kalo production within the ahupua‘a (McAllister, 1933). These irrigated fields formed the subsistence backbone of the community and were supplemented by dryland crops such as ‘uala, ‘ulu, niu, and kō, consistent with agricultural patterns documented throughout Ko‘olauloa (Handy, 1940; Handy & Handy, 1972). Agricultural terraces, irrigation channels, and associated habitation areas would have extended along stream courses and lower valley slopes, creating a productive and carefully managed agricultural landscape.

The inland and mauka zones of Mālaekahana provided essential forest resources. These areas supplied timber for housing and canoes, plant materials for tools and cordage, medicinal plants, and feathers used in ceremonial contexts. Access to upland resources was regulated through kapu and seasonal practices to ensure sustainability. The mauka–makai organization of Mālaekahana reflects a foundational Hawaiian principle: the well-being of the community depended on the balanced management of all ecological zones within the ahupua‘a (Kamakau, 1992; Malo, 1951).

Mālaekahana is also recognized as a wahi pana deeply embedded in Hawaiian oral tradition and historical memory. McAllister documented numerous named locations within Mālaekahana, including former pools, shrines, and habitation areas, indicating a landscape rich in cultural meaning and ancestral presence (McAllister, 1933). Among the most significant recorded locations is the house site of Manuahi, identified by McAllister as the foundation of the house of a kahuna described as the “keeper of the god of Mālaekahana.” At the time of McAllister’s survey, foundation stones were still visible, and the site was regarded by Hawaiians as highly significant due to Manuahi’s prominence and reputation (McAllister, 1933).

McAllister further recorded that Manuahi was remembered as a very old Hawaiian living at Lā‘ie and as a kahuna whose influence extended throughout the district of Ko‘olauloa. Importantly, McAllister noted that Manuahi was “never conquered by Kamehameha,” a statement that aligns closely with mo‘olelo later retold in newspaper accounts describing Manuahi’s successful outwitting of Kamehameha I at Mālaekahana (Apple, 1979; Apple, 1989; McAllister, 1933). This convergence of archaeological documentation and oral tradition reinforces Mālaekahana’s role as a center of kahuna authority and resistance through knowledge rather than warfare.

The association of Mālaekahana with Manuahi situates the ahupua‘a within a broader cultural narrative emphasizing the power of ‘ike kahuna and place-based knowledge. Kahuna such as Manuahi were central figures in Hawaiian governance, serving as advisors to ali‘i, ritual specialists, keepers of genealogy, and guardians of kapu. Their authority derived from genealogy, training, and intimate familiarity with place. In Ko‘olauloa, a district long recognized for strong religious, agricultural, and intellectual traditions, such figures played a critical role in maintaining social, political, and spiritual balance (Kamakau, 1992; Malo, 1951).

Hawaiian place names recorded by McAllister further underscore the deep relationship between people and landscape at Mālaekahana. Named pools, fishing areas, and habitation sites functioned as mnemonic anchors for history, instruction, and identity. These place names preserved knowledge of resources, events, and spiritual associations, ensuring that ‘ike kupuna remained tied to specific locations across generations (McAllister, 1933; Pukui, Elbert, & Mookini, 1974).

Socially and politically, Mālaekahana was integrated into a network of neighboring ahupua‘a within Ko‘olauloa, including Lā‘ie, Hau‘ula, and Kahuku. These communities were linked through marriage alliances, chiefly governance, ritual obligations, and the exchange of resources. Trails connecting Mālaekahana to adjacent lands facilitated travel between coastal settlements, agricultural fields, and upland forests, supporting both subsistence activities and ceremonial movement (Handy & Handy, 1972).

Governance of Mālaekahana prior to contact followed traditional Hawaiian political structures. Ali‘i nui exercised authority at the moku level, while ali‘i ‘ai ahupua‘a and konohiki managed land use and resource distribution locally. Maka‘āinana families held customary rights to cultivate specific plots, fish designated areas, and gather resources under konohiki oversight and kapu regulation (Malo, 1951; Kamakau, 1992). This system emphasized reciprocity, stewardship, and collective responsibility rather than private ownership.

The pre-contact cultural landscape of Mālaekahana was thus shaped by continuous interaction between people and place over many generations. Habitation areas, lo‘i systems, fishing grounds, trails, and sacred sites formed an integrated system maintained through observation, adaptation, and the transmission of ‘ike kupuna. Although many physical traces have been altered or obscured over time, McAllister’s documentation, together with oral traditions and ethnographic sources, affirms the depth and complexity of Hawaiian occupation.

As shown in research and mo‘olelo, pre-contact Mālaekahana was a thriving ahupua‘a within Ko‘olauloa, characterized by abundant marine and agricultural resources, strong community organization, and profound cultural and spiritual significance. McAllister’s documentation of agricultural terraces, fishing shrines, named landscape features, and the house site of the kahuna Manuahi situates Mālaekahana as a place where leadership, knowledge, and land were inseparable. Recognizing this history is essential to understanding Mālaekahana State Recreation Area today as part of a living cultural landscape shaped by centuries of Native Hawaiian stewardship. The selected mo‘olelo provided below provide insight into the traditional and practices that occurred in this ahupua‘a.

3.3.1 Legend of Manuahi

Mālaekahana occupies a powerful place in Hawaiian mo‘olelo as a landscape where the authority of ali‘i, the intelligence of kahuna, and the agency of ‘āina converge. Within this setting unfolds one of the most enduring narratives of restraint and balance in Hawaiian tradition: the encounter between Kamehameha I and the kahuna Manuahi. Preserved in oral tradition and retold in the late twentieth century by Russ Apple, this mo‘olelo is not simply a tale of cleverness, but a reflection of Hawaiian systems of leadership, genealogy, and knowledge transmission. At its center stands Manuahi (also often written as Manuwahi), a figure remembered not for conquest, but for wisdom, foresight, and the quiet authority of ‘ike kupuna rooted in O‘ahu (Apple, 1979; Apple, 1985; Apple, 1989).

Manuahi is consistently identified in these traditions as a kahuna of great renown, closely associated with Mālaekahana and the Ko‘olauloa district. While Western historiography often relegates kahuna to the margins of political history, Hawaiian tradition places them at the heart of governance. Kahuna were not merely ritual specialists; they were advisors,

strategists, healers, genealogists, and keepers of 'ike essential to the survival and stability of society. Manuahi belongs to this lineage of leaders whose authority derived from genealogy, training, and intimate knowledge of place rather than from chiefly rank alone (Malo, 1951; Kamakau, 1992).

Although the surviving newspaper accounts do not provide a full genealogical chant for Manuahi, Hawaiian tradition makes clear that kahuna authority was never self-generated. Kahuna genealogies were often distinct from ali'i lines but no less prestigious, tracing descent from ancestral specialists, deities associated with knowledge, or chiefly ancestors who had relinquished political power in favor of spiritual stewardship. Manuahi's standing on O'ahu suggests descent from such a lineage—one embedded in Ko'olauloa, a district long recognized for its strong religious traditions, agricultural productivity, and strategic importance (Fornander, 1969).

Ko'olauloa, including Mālaekahana, was historically a region where ali'i authority coexisted with strong local leadership. The district supported large populations, sustained by lo'i kalo, fisheries, and coastal resources, and was home to important heiau and ritual sites. Kahuna associated with this region would have played a central role in regulating seasonal practices, advising chiefs, and maintaining balance between human activity and the spiritual realm. Manuahi's ability to stand firm against Kamehameha suggests that he was not an isolated figure, but one supported by community recognition and ancestral legitimacy (Kamakau, 1992).

In Hawaiian society, leadership was relational rather than absolute. Ali'i depended on kahuna to interpret signs, maintain kapu, and ensure divine favor. When ali'i exceeded their bounds, kahuna possessed both the moral authority and ritual means to resist. Manuahi's leadership thus reflects a broader Hawaiian political philosophy in which power was distributed across roles and checked by knowledge. His actions at Mālaekahana exemplify this principle in practice rather than theory.

The mo'olelo recounts that Kamehameha, still in the process of consolidating power, became aware of Manuahi's reputation. At this stage in his life, Kamehameha was known for testing rivals and potential threats, particularly those whose influence might rival his own. Kahuna, especially those commanding local loyalty, could pose significant challenges to chiefly ambition. The decision to pursue Manuahi aligns with known patterns of Kamehameha's early campaigns, which included both military action and strategic neutralization of influential figures (Apple, 1979; Kamakau, 1992).

Yet Manuahi's response diverges sharply from the expectations of warfare. Rather than confronting Kamehameha directly, he relied on perception, preparation, and psychological insight. In the accounts preserved by Apple, Manuahi anticipates Kamehameha's arrival and

arranges circumstances so that the aliʻi is misled, delayed, or rendered ineffective. The kahuna's bald head—often emphasized in retellings—is not merely a physical detail, but a narrative marker, symbolizing both recognition and misdirection. Manuahi allows himself to be seen and not seen, controlling the encounter on his own terms (Apple, 1989).

Mālaekahana itself is integral to this outcome. Hawaiian epistemology understands ʻāina as animate and participatory; land is not a backdrop but an actor. Manuahi's intimate knowledge of Mālaekahana—its trails, vegetation, coastal features, and sacred sites—allowed him to move strategically and maintain advantage. In this sense, Manuahi's leadership is inseparable from place. His authority arises from his relationship to Mālaekahana as a wahi pana imbued with ancestral presence and spiritual protection.

The 1979 article's framing of this episode as “Where Kamehameha Failed” is particularly revealing. Hawaiian tradition does not diminish Kamehameha through this story; rather, it humanizes him. Kamehameha's failure at Mālaekahana underscores that even the most powerful aliʻi remained subject to cultural law and spiritual order. His inability to overcome Manuahi through force reinforces a central Hawaiian value: ʻike outweighs aggression, and authority must be exercised within ethical bounds (Apple, 1979).

Manuahi's leadership, as celebrated in the 1985 tribute, extended beyond this single encounter. He is remembered as a figure whose influence persisted through memory and storytelling, suggesting that his genealogy and teachings continued through descendants, students, or associated families. Hawaiian knowledge transmission relied heavily on such remembrance. To honor Manuahi generations later implies that he represented an ideal of leadership grounded in foresight, restraint, and service to community rather than personal ambition (Apple, 1985).

The relationship between Manuahi and Kamehameha also illuminates Kamehameha's own development as a leader. Later in life, Kamehameha increasingly emphasized governance, law, and stability, culminating in the establishment of the Māmalahoe Kānāwai. Hawaiian historians note that his reign evolved from constant warfare toward consolidation through justice and order. Encounters such as the one at Mālaekahana likely contributed to this evolution, reinforcing the lesson that enduring rule required wisdom as much as strength (Kamakau, 1992).

Within the broader sweep of Hawaiian history, Manuahi stands as an exemplar of non-aliʻi leadership. His genealogy, though less documented than that of chiefs, would have been deeply known within his community. His authority derived from trust, knowledge, and alignment with ancestral values. In this way, Manuahi represents a class of leaders often overlooked in colonial histories but central to Hawaiian governance: kahuna whose influence shaped events without leaving monuments or written records.

The late twentieth-century retelling of Manuahi’s mo‘olelo carries contemporary significance. At a time when Native Hawaiians were reasserting cultural identity and land-based knowledge, stories of kahuna resisting domination resonated deeply. Manuahi’s success through intelligence rather than violence offered a model of resistance rooted in Hawaiian values, affirming the continued relevance of ‘ike kupuna in modern struggles over land, authority, and self-determination.

Ultimately, the mo‘olelo of Manuahi at Mālaekahana affirms that Hawaiian history is not solely the story of conquest and kingship, but also of wisdom, balance, and the enduring power of place-based knowledge. Manuahi emerges as a leader whose genealogy, authority, and legacy are inseparable from O‘ahu and from the Hawaiian worldview itself. Mālaekahana endures as the landscape where this lesson was enacted, remembered, and passed forward.

At Laie lived Manuwahi [] with his son, Ka-haku-loa, The-Lord-of-a-Long-Land; his grandson, Kaiawa, Bitter Sea, and his great-grandson, Kauhale-kua, The-Village-on-the-Ridge. These men were the keepers of the akua at Laie. Manuwahi and his children were hairless and were possessed of supernatural powers.

Manuwahi planted black and white awa far up the mountains for the use of the akua. Every awa root planted was given one of these names, Kaluaka, The-Hole-That-Gives-a-Shadow; Kumumu, Blunt-Edged; Kahiwa, Best-Awa, or Kumilipo, The-Root-of-Unconsciousness. This was done so that Manuwahi, when sending one of his sons for a piece of awa could designate the exact one he wished.

When the awa was given to him, Manuwahi would prepare it, and then summon the akua from the North, South, East, West, as well as from above and below, to drink of it. They prayed in this wise, before they drank:

Gods of the morning,
Gods of the night
Look at your progeny:
Grant them health,
Grant them long life;
Amama ua noa—it is free!

It happened that during that during this time, Kamehameha I, had come to conquer Oahu. He had succeeded in subduing all the island except Malae-kahana, between Laie and Kahuku. Determined to add this place to his conquests, the king sent one of his body guard, Ka-hala-iu, In-the-Shadow-of-the-Hala-Tree, with many of his bravest soldiers to subdue Malae-kahana.

Ka-hala-iu marched as far as Hanapepe the first day, where he spent the night. Early the next morning he set out and meeting Manuwahi, whom he did not recognize, asked him where the powerful kahuna of Malae-kahana lived. Manuwahi answered, "Pass over the river and you will see a spring and nearby a hut with trees about it. This is his home."

Ka-hala-iu did as he was told and had soon surrounded the hut with his soldiers. When Manuwahi's son came out Ka-hala-iu asked him, "Where is your father?"

"Did you meet a bald-headed man?" asked the boy in turn.

"Yes," replied Ka-hala-iu.

"Well, that was my father. Why did you come here?"

"I came to kill your father by the orders of King Kamehameha," answered the King's man. Deciding it would profit them nothing to kill the son, the soldiers departed for Hanapepe by the makai side of the hill and failed to meet Manuwahi, who had returned to his home by the mauka side.

The next morning the King's body-guard again surrounded with his soldiers the home of the kahuna. Manuwahi came out and asked, "What are you here for? Did you come for battle?"

"Yes," answered the fearless soldier, "We came to kill you."

Whereupon Manuwahi called to his assistance all the akua from the North, South, East and West as well as those from above and below. They came at once and gave battle to the soldiers of the king. The akua fought by biting and scratching their assailants and before long they had killed all but Ka-hala-iu. Ka-hala-iu cried out, "Spare my life, kahuna of the gods, and I will stay with you."

"What can you do if you stay with me?" asked Manuwahi.

"I will plant awa for you. I came from Hawaii, where I lived by planting awa," answered Ka-hala-iu.

But Manawahi said, "I do not need you. Go back and tell your king that even his bravest soldiers were not able to conquer Malae-kahana. Tell him that all but you were killed by the akua there."

When Kamehameha had heard these words he sent Ka-hala-iu back with another body of soldiers with orders that he must conquer Malae-kahana.

In the meantime, Manuwahi had moved with his sons up to the cave of Kaukana-leau, where the natives made their stone adzes. There the King's soldiers met them. As before, Manuwahi called all the akua to his aid. Again the soldiers were quickly put to death and only Ka-hala-iu was left. So Malae-kahana was not conquered.

Ka-hala-iu respected and admired Manuwahi so much that he was very anxious to remain with him, and so he asked again to be allowed to remain as an awa grower. Manuwahi consented this time and gave him one side of the valley to cultivate in awa.

One day as Ka-hala-iu was preparing the side hill for its cultivation, he noticed that on the opposite side of the valley, trees and bushes were falling in every direction, as if a whirlwind were uprooting them. This frightened him very much, as he could not understand the phenomenon, so he ran in great haste to Manuwahi, and asked what it meant. Manuwahi told him that his akua were helping in the clearing of the side hill, and that if he wished them to help him, they would gladly do so. Ka-hala-iu was only too happy to have help, so he called upon the akua, and in a short time both sides of the valley were cleared, and were growing luxuriantly with the most beautiful awa.

After the battle, between Ka-hala-iu and the akua for the possession of Malae-kahana, Manu-ka, Frightener-of-Birds, one of Manuwahi's sons, moved to Kaneohe, where he died some time later. He was buried makai of the present road. The natives dug a very large grave, but before they could cover the body, the akua brought red dirt from Ewa, in a cloud, which filled the grave, and made a red hill above it, which can be seen to this day. There is no other red dirt in that district. (Rice 113-115)

3.3.2 Romance of Laieikawai

The mo'olelo of La'iekawai is one of the most important and richly layered narratives in Hawaiian tradition, conveying themes of genealogy, chiefly legitimacy, feminine power, and the intimate relationship between people and place. Recorded in Hawaiian-language sources and later translated and analyzed by scholars such as Martha Beckwith, the story centers on La'iekawai, a chiefly woman whose sacred origins and trials affirm her right to rule and her

connection to the natural and spiritual realms (Beckwith, 1970). The mo'olelo is deeply grounded in specific landscapes on O'ahu, particularly within the moku of Ko'olauloa.

Mālaekahana is closely associated with the La'iekawai tradition through wahi pana tied to water, caves, and pools that appear in both oral tradition and early site documentation. McAllister records Waipūka'a, a pool located on the Kahuku side of Lā'ie near Mālaekahana, as a place made famous by the legend of La'iekawai (McAllister, 1933). In the mo'olelo, pools and subterranean passages function as liminal spaces—gateways between the human world and the realm of the gods—where testing, transformation, and revelation occur. These features reflect the broader Hawaiian understanding of water as a source of life, knowledge, and chiefly power.

The association of La'iekawai with Mālaekahana situates the ahupua'a within a sacred narrative landscape where genealogy, gender, and place converge. Rather than existing as an abstract story, the mo'olelo is anchored to real locations known to the people of Ko'olauloa, reinforcing Mālaekahana's identity as a wahi pana shaped by both subsistence and story. Through La'iekawai, Mālaekahana is remembered not only as a place of habitation and production, but as a landscape imbued with ancestral memory and spiritual significance.

Laie-i-ka-wai and her twin sister Laie-lohelohe are born at Laie on Oahu of Kahauokapaka the father, chief of the northern lands of the island, and Mālaekahana the mother. Since the father has vowed to let no daughter born to his wife live until she bears him a son, the mother conceals the birth of the twins and gives them to her own relatives to rear, Laie-lohelohe to Ka-puka-i-haoa to bring up at the heiau at Ku-kani-loko, and Laie-i-ka-wai to Waka, who first hides her in a cave near Laie which can be reached only by diving into the pool which conceals the entrance, and then takes her to the uplands of Puna. Here she builds a tapu house for her ward thatched with bird feathers, and gives her birds to wait upon her and mists to hid her from sight of men until such time as a suitable lover shall appear to make her his wife.

The first whose suit seems acceptable is Kauakahi-ali'i, ruling chief of Kauai and husband of Ka-ili-o-ka-lau-o-ke-koa (skin like the leaf of the koa). The reappearance of his wife whom he had mourned for dead prevents the appointed meeting, but on his return to Kauai he relates the adventure and the young chiefs of that island are stirred by the story. Aiwohikupua meets her nightly in dream and goes to woo her, but even the presence of his four sweet-scented kupua sisters, named after the four varieties of maile vine whose scent they inherit, cannot shake her refusal. Enraged by the insult, he abandons the sisters in the forest. His fifth and favorite sister, Ka-hala-o-mapuana (the fragrant hala blossom) refuses to abandon them. Through her clever

management she attracts the attention of Laie-i-ka-wai and the five are adopted as sisters and made the guardians of Paliuli. They drive off their brother upon his second attempt to win the chiefess, and a guardian mo'ō named Kiha-nui-lulu-moku (great mo'ō shaking the island) completes the discomfiture. Another and more favored young chief from Kauai named Hauailike is also expelled by the watchful youngest sister.

Waka now arranges a match with Ke-kalukalu-o-ke-wa, younger brother of Kaili-o-ka-lau-o-ke-koa and successor with her to Kauakahi as ruling chief of Kauai. Just as the formal marriage (hoao) is about to be consummated, a young rascal from Puna named Hala-aniani, aided by his sorceress sister, carries her off on his surfboard in place of the legitimate lover. Waka finds them sleeping together and abandons the girl in a rage, stripping her of mist and bird guardians and of the house thatched with feathers whose protection her loose conduct has forfeited. The five sisters and the great mo'ō, however, refuse to abandon their mistress. Since the Kauai chief has made her twin sister Laie-lohelohe his wife in place of their disgraced mistress, they determine to retrieve her fortunes by providing a more splendid match, and the clever youngest sister is dispatched, with the great mo'ō as carrier, to fetch their oldest brother who lives as a god in a tapu house in the very center of the sun in the highest heavens. While she is away on this errand the group leave Paliuli and travel about the island and, meeting an old family guardian and seer named Hulu-maniani, make their home with him as adopted daughters at Honopuwai-akua on Kauai. Throughout the course of the story this old seer (kaula) has been following around the islands after the rainbow sign which hovers over the place where Laie-i-ka-wai is hidden, determined to make this new divinity his chief and thus provide for his own old age.

Ka-onohi-o-ka-la (eyeball of the sun) looks favorably upon his sister's proposal and, putting off his nature as a god, he descends to earth, strips the enemies of Laie-i-ka-wai of their lands and power and, leaving Ke-kalukalu-o-ke-wa and the twin sister rulers over Kauai, gives to each of the sisters rule over one of the other islands of the group and takes Laie-i-ka-wai up on a rainbow to live with him in Ka-hakaekaea. All goes well until, on one of his visits to earth to see that all goes well there, he notices the budding beauty of his sister-in-law. He presses his attentions and succeeds in securing her. His wife in the heavens wonders what important affairs keep him so long on earth. In the temple at Kahakaekaea stands the gourd Lau-ka-palili which reveals to one who looks within what is going on below. Laie-i-ka-wai discovers her husband's infidelity and reports him to his parents, who live with her in the heavens. They banish him to become a wandering spirit, the first lapu (ghost) in Hawaii. Laie-i-ka-wai

returns to earth and lives like a god with her sister. Today she is worshipped as Ka-wahine-o-ka-liula (Lady of the twilight, mist, or mirage) (Beckwith 1970:526-528).

3.3.3 Laniloa, The Moʻo

The moʻolelo of Laniloa is a powerful place-based narrative that anchors Hawaiian history, cosmology, and landscape to the coastline of Koʻolaupua, particularly the region encompassing Lāʻie and Mālaekahana. In this tradition, Laniloa is the name of a point of land extending into the ocean from Lāʻie, remembered in ancient times as a moʻo—an enormous reptilian being that stood upright and preyed upon travelers. Moʻo in Hawaiian tradition often embody dangerous or unregulated forces within the landscape, frequently associated with water, liminal spaces, and the testing of human behavior and chiefly authority.

The moʻolelo situates Laniloa within the larger cycle of stories surrounding the hero Kana, whose feats are closely tied to the restoration of balance across the islands. After rescuing his mother from Molokaʻi, Kana undertook a circuit of the pae ʻāina to destroy moʻo that threatened communities. When he arrived at Lāʻie, he confronted and killed the Laniloa moʻo, ending the deaths that had plagued the area. Kana's actions are not merely heroic but corrective, reinforcing his role as a culture hero who reorders the landscape and restores safety and abundance.

The physical geography of Mālaekahana is integral to this narrative. According to the moʻolelo, Kana severed the moʻo's head and cut it into five pieces, casting them into the sea. These fragments are said to remain visible today as the small offshore islets of Malualai, Keauakaluapāʻa, Pūlemoku, Mokuʻaniwa, and Kihewamoku, located off the coast of Mālaekahana. At the place where the moʻo was slain, a deep, unfathomable hole is said to remain, marking the enduring presence of the event in the landscape (Rice, 1923). Through this moʻolelo, Mālaekahana is understood as a transformed and sanctified place, where myth, geography, and memory converge.

Laniloa is the name given to a point of land which extends into the ocean from Laie. In ancient times this point was a moʻo, standing upright, ready to kill the passerby.

After Kana and his brother had rescued their mother from Molokai and had taken her back to Hawaii, Kana set out on a journey around the islands to kill all the moʻo. In due time he reached Laie, where the moʻo was killing many people. Kana had no difficulty in destroying this monster. Taking its head, he cut it into five pieces and threw them into the sea, where they can be seen today

as the five small islands lying off Mālaekahana: Malualai, Keauakaluapaaa, Pulemoku, Mokuaniwa and Kihewamoku.

At the spot where Kana severed the head of the mo'ō is a deep hole which even to this day has never been fathomed. (Rice 1923:112)

3.3.4 Story of Punaikoae

The mo'olelo of Kalamainu'u is a richly layered narrative that weaves together themes of desire, danger, transformation, and the intimate relationship between mo'ō beings, landscape, and subsistence practices. Set on O'ahu, the story situates Kalamainu'u, a mo'ō woman, in a cave at Makaleha in Lā'ie, within the broader cultural landscape connecting Ko'olauloa, Waialua, and Ka'ena. As in many Hawaiian traditions, mo'ō figures embody both generative and destructive forces, often associated with water, caves, and liminal spaces where human and spirit realms intersect.

In this mo'olelo, Kalamainu'u leaves her cave in search of a husband and encounters the young Kaua'i chief Puna-ai-koae while he is surfing at Ka-lehua-weha. Her ability to lure him onto her surfboard and carry him across districts and mountain ranges underscores the supernatural mobility and power attributed to mo'ō beings. The journey from Lā'ie to Ka'ena, across the Wai'anae Mountains to Pu'u-ka-pele and down to Wailea Stream, situates the narrative firmly within known geographic features, transforming the island itself into a living stage for the story.

The mo'olelo also functions as an origin story, explaining the invention of the basket trap used to catch hinalea fish. Through Kalamainu'u's actions and guidance, practical knowledge for fishing is embedded within the narrative, and Kalamainu'u becomes recognized as an 'aumakua associated with hinalea fishing in the area. In this way, the mo'olelo ties spiritual beings directly to subsistence practices, reinforcing the Hawaiian understanding that survival knowledge is inseparable from ancestral and spiritual relationships (Beckwith, 1970).

The mo'ō woman Kalamainu'u lives in a cave at Makaleha in Laie, Waialua District, on Oahu. Going forth one day in search of a husband she finds the young Kauai chief Puna-ai-koae (Puna-tropic-bird eater) surfing on the waves of Ka-lehua-weha, lures him to her own board and carries him away to Kaena point, where they land and, ascending the Waianae mountains to Pu'u-ka-pele, descend to the stream of Wailea on the west side of which her cave is still seen today. After several months of love making and feasting Puna longs again for surf riding and his wife fetches a board from the corner of the cave but warns him against speaking to anyone while he is away. On his way to the sea two

relatives of the mo'ō woman, Hinalea and Aikilolo, hail him and warn him of his wife's true nature. They tell him that the board he carries is in reality her mo'ō tongue and that unless he can escape he must ultimately perish. He returns secretly to the cave and spies upon his wife in her mo'ō form. Because of her nature as a spirit she knows what has happened and prepares to eat him, but since he shows no fear when she shows him her terrible forms, she forgives him and goes forth to slay his informants. They evade her for a time by creeping into a crack of the sea floor. Kuaō and Ahilea tell her how to set a trap to catch them. Thus the basket trap for catching hinalea fish came to be invented, and Kalamainu'u is still an aumakua for catching hinalea fish in that vicinity. (Beckwith 1970:194)

3.3.5 Legend of Manonihokahi

The mo'olelo of Mano-niho-kahi is a cautionary place-based narrative rooted in the coastal landscape of Mālaekahana, where human behavior, supernatural power, and communal responsibility intersect. Set near a freshwater hole in Mālaekahana, between Lā'ie and Kahuku, the story identifies the area as both life-giving and dangerous—a liminal space where freshwater meets the sea and where spiritual imbalance can manifest. In Hawaiian tradition, sharks (mano) often appear as 'aumākua or powerful ancestral beings; however, this mo'olelo presents a darker inversion of that relationship, in which supernatural ability is abused rather than stewarded.

Mano-niho-kahi is described as a man who could transform himself into a shark, distinguished by the single shark's tooth concealed beneath a tapa cloth on his back. By preying upon women gathering fish and limu, he violated fundamental Hawaiian values of mālama and pono, particularly the protection of those engaged in subsistence practices essential to community survival. His repeated killings disrupted social order and created fear along the Mālaekahana shoreline, emphasizing the consequences of unchecked power exercised outside of communal accountability.

The resolution of the mo'olelo reinforces the importance of leadership, ritual authority, and collective action. When the chief, guided by his kahuna, required the people to disrobe, the hidden nature of Mano-niho-kahi was revealed, restoring balance through exposure and justice. His death ends the killings and reestablishes safety. Through this narrative, Mālaekahana is remembered not only as a subsistence landscape, but as a moral landscape where leadership and spiritual discernment safeguard the community (Rice, 1923).

Near the water hole in Malae-kahana, between Laie and Kahuku, lived a man called Mano-niho-kahi who was possessed of the power to turn himself into a

shark. Mano-niho-kahi appeared as other men except that he always wore a tapa cloth which concealed the shark's mouth in his back.

Whenever he saw women going to the sea to fish or to get limu he would call out, "Are you going into the sea to fish?"

Upon hearing that they were, he would hasten in a roundabout way to reach the sea, where he would come upon them and, biting them with his one shark's tooth, kill them.

This happened many times. Many women were killed by Mano-niho-kahi. At last the chief of the region became alarmed and ordered all the people to gather together on the plain. Standing with his kahuna, the chief commanded all the people to disrobe. All obeyed but Mano-niho-kahi, Shark-with-One-Tooth. So his tapa was dragged off and there on his back was seen the shark's mouth. He was put to death at once and there were no more deaths among the women. (Rice 1923:111)

3.4 Historic Period

Following Western contact in 1778, the ahupuaʻa of Mālaekahana and neighboring Lāʻie experienced gradual but consequential changes as Native Hawaiian communities navigated disease, shifting governance, and evolving land tenure systems. During the early post-contact period, Koʻolauloa remained a largely rural district, characterized by subsistence fishing, taro cultivation, and small, dispersed coastal settlements. Unlike Honolulu or Lahaina, the region did not immediately attract large numbers of foreign settlers, allowing many traditional lifeways to persist into the nineteenth century.

Early historical accounts describe Lāʻie as a small, sparsely populated village that held the distinction of being a puʻuhonua, or place of refuge. Puʻuhonua functioned as sacred sanctuaries where individuals fleeing punishment could seek protection under traditional kapu law. This status underscores the spiritual and political importance of Lāʻie within Koʻolauloa prior to 1819. With the abolition of the kapu system by Kamehameha II in 1819, puʻuhonua were formally abolished, and there is no evidence that Lāʻie continued to function as a sanctuary thereafter (Wallace, 2001). While Mālaekahana is not documented as a puʻuhonua, its close proximity to Lāʻie situates it within a landscape shaped by sacred authority and customary law.

The abolition of the kapu system marked a profound shift for Native Hawaiian society. In Koʻolauloa, including Mālaekahana, religious practices were transformed, though many cultural traditions continued in modified forms. Missionaries soon expanded along the

windward and north shore regions, establishing schools and chapels in nearby communities. Although Mālaekahana itself did not become a missionary center, missionary records from surrounding areas provide some of the earliest post-contact demographic data for the region. These records indicate that the population remained overwhelmingly Native Hawaiian through the early nineteenth century, but declined sharply due to introduced diseases and migration toward emerging population centers such as Honolulu.

By the 1830s, Lā‘ie’s population was reported to be approximately 400 people, increasing only modestly to about 450 by 1853 (Hill, 1978). This slow growth reflects broader regional trends affecting Mālaekahana as well: declining birth rates, disease-related mortality, and economic pressures that drew residents away from rural ahupua‘a. Despite these challenges, communities in Ko‘olauloa continued to rely on subsistence practices tied to land and sea. Fishing along the Mālaekahana shoreline and cultivation in inland valleys remained essential to survival and cultural continuity.

Hydrology played a critical role in shaping settlement and agricultural potential in the region. Prior to 1865, the ahupua‘a of Lā‘ie was traversed by at least ten named streams, more than any of the surrounding ahupua‘a, including Mālaekahana, Hau‘ula, Keana, and Kahuku. These streams supported extensive lo‘i kalo cultivation and contributed to Lā‘ie’s agricultural productivity. By contrast, Mālaekahana had fewer perennial water sources, shaping a subsistence pattern more heavily oriented toward coastal fishing supplemented by inland cultivation where water was available. This hydrological contrast underscores the interconnected but distinct roles of neighboring ahupua‘a within Ko‘olauloa.

Land tenure in Mālaekahana and Lā‘ie remained under traditional Hawaiian governance until the mid-nineteenth century. Under the ahupua‘a system, ali‘i and konohiki managed land and resources, while maka‘āinana held customary rights to farm, fish, and gather resources from mauka to makai. This system emphasized reciprocal responsibility rather than ownership. However, growing foreign influence and pressure for Western-style property rights led to fundamental restructuring through the Great Māhele between 1847 and 1855.

The Māhele transformed Hawaiian land tenure by dividing lands among the Crown, the government, and ali‘i and konohiki. Under this system, all lands and associated fisheries were placed into one of three categories: Crown Lands, Government Lands, and Konohiki Lands. The subsequent Kuleana Act of 1849–1850 established a legal pathway for hoā‘āina (native tenants) to claim fee-simple title to lands they occupied and cultivated prior to 1845. The Act also reaffirmed customary rights of access, subsistence, and resource use, including fishing rights, though the legal burden of proof made successful claims difficult for many Native Hawaiians (Kamakau, 1961).

The ahupua‘a of Lā‘ie was traditionally divided into two units—Lā‘iewai and Lā‘iemalo‘o—both of which were retained by Kamehameha I following his conquest of O‘ahu. These lands passed through chiefly lines, from Kalaimamahū to his daughter Kekāuluohi, and later to her son William Charles Lunalilo. During the Māhele, Lā‘iewai Ahupua‘a, which encompasses areas near Mālaekahana, was awarded to Lunalilo as Āpana 35 of Land Commission Award 8559B in 1850. These transfers illustrate how chiefly lands in Ko‘olauloa became consolidated under prominent ali‘i families during the Māhele.

For communities such as Mālaekahana, the Māhele marked the beginning of increasing vulnerability. While some Native Hawaiian families may have secured kuleana awards or continued occupying land through informal arrangements, many were unable to navigate the new legal system. As a result, traditional land-use patterns persisted in practice but weakened in law. By the mid-1800s, Mālaekahana remained largely rural and undeveloped, characterized by fishing, small-scale cultivation, and limited grazing, even as land ownership structures shifted around it.

By the time of the mid-nineteenth century, Mālaekahana and Lā‘ie stood at a crossroads. Traditional subsistence practices and cultural connections to land and sea endured, but demographic decline, religious transformation, and legal restructuring had fundamentally altered the foundations of Hawaiian land tenure. These changes laid the groundwork for later developments, including land consolidation, ranching, and eventual institutional ownership in the latter half of the nineteenth century. The early post-contact period thus represents a time of both resilience and profound transition, shaping the trajectory of Mālaekahana within the evolving history of Ko‘olauloa.

By the early nineteenth century, Mālaekahana remained a largely rural ahupua‘a within the moku of Ko‘olauloa, characterized by shoreline fishing, small-scale inland cultivation, and continued Native Hawaiian occupation. Following Western contact and especially after the Māhele, Native Hawaiian communities in Ko‘olauloa experienced profound demographic and economic disruption. The smallpox epidemic of 1853 was particularly devastating, accelerating population decline along the windward coast and north shore and contributing to the gradual abandonment of traditional settlement areas (Maly & Rosendahl, 1995).

As commercial whaling declined in the mid-1800s, Hawai‘i’s economy shifted toward ranching and plantation agriculture. These changes reshaped land use throughout Ko‘olauloa, including Mālaekahana. Following the Māhele, lands formerly held under chiefly tenure were transferred into private ownership. In 1861, lands of Lā‘iewai and Lā‘iemalo‘o—closely associated with the Mālaekahana region—were sold from the estate of William C. Lunalilo to Henry H. Howland. Howland subsequently sold portions of these lands to Robert Moffitt and then to Charles Hopkins, who consolidated extensive holdings across Kahuku and most of Mālaekahana (Maly & Rosendahl, 1995).

Hopkins established the Kahuku Ranch, marking a shift from subsistence-based land use to large-scale ranching. Ranch operations focused on cattle and sheep grazing, transforming the landscape into open, treeless pasture. Ownership of the ranch passed to Herman A. Widemann in 1872, Julius L. Richardson in 1874, and James Campbell in 1876. An 1881 Hawaiian Government survey map shows a 275-acre portion of Kahuku Ranch extending into Lā‘iewai Ahupua‘a just northwest of present-day Mālaekahana State Recreation Area, demonstrating the reach of ranching into lands adjacent to Mālaekahana (Covington, 1881).

By the 1880s, ranching dominated land use in the area, while Mālaekahana itself remained sparsely developed relative to plantation centers. The ranch continued under James Campbell’s ownership until 1899, when it was leased to Benjamin F. Dillingham, and operations persisted into the mid-twentieth century (Maly & Rosendahl, 1995). Although ranching altered vegetation and land cover, Mālaekahana retained open space and coastal access that distinguished it from intensively cultivated plantation districts.

Developments in neighboring Lā‘ie exerted significant influence on Mālaekahana during this period. Beginning in 1850, missionaries from the Church of Jesus Christ of Latter-day Saints (LDS) established a growing presence in Hawai‘i. After an unsuccessful colony on Lāna‘i, LDS Mission President Francis A. Hammond purchased approximately 6,000 acres in Lā‘ie in 1865 from Thomas Dougherty to establish a mission settlement (Figure 5). Plantation agriculture began in 1868, with sugarcane replacing earlier crops such as cotton and corn. Extensive irrigation infrastructure, flumes, and mills were constructed over subsequent decades (Maly & Rosendahl, 1995).



Figure 6. 1884 map showing the neighboring Mormon Settlement.

By the late nineteenth century, Lā'ie had become a thriving Mormon settlement, while Mālaekahana remained peripheral to plantation development. Henry M. Whitney's (1895) *Tourists' Guide Through the Hawaiian Islands* describes Lā'ie as a prosperous Mormon colony with sugar fields, ranch lands, taro patches, and a substantial Native Hawaiian population. Whitney also references a "famous water-hole" near the road, identified with Mālaekahana, associated with a traditional mo'olelo of refuge and intelligence during Kamehameha's

campaigns. This account demonstrates that Mālaekahana continued to be recognized as a culturally significant place even amid economic transformation.

At the turn of the twentieth century, sugar production in Lāʻie expanded rapidly following the installation of large artesian pumps in 1898. Between 1895 and 1917, sugar output increased tenfold, eventually exceeding the capacity of local mills and leading to processing at the Kahuku Sugar Mill (Baldrige, 1979). Plantation labor demographics shifted dramatically during this period, as Chinese, Japanese, Filipino, and Puerto Rican workers replaced a workforce once dominated by Native Hawaiians (Berge, 2010). Mālaekahana, however, remained largely outside intensive plantation cultivation and continued to function as open ranch land and shoreline.

Infrastructure development further integrated the region. The Koʻolau Railway, completed in 1903, connected Kahuku, Lāʻie, and surrounding areas to Honolulu, facilitating the transport of sugar, livestock, and people (Conde & Best, 1973). While the railway passed near Mālaekahana (Figure 6), the area itself remained lightly developed, retaining open coastal lands and traditional access.

Today, Mālaekahana is recognized as both a recreational resource and a culturally significant landscape within Koʻolauloa. Management of the area increasingly acknowledges its Native Hawaiian history, archaeological sensitivity, and layered past. From nineteenth-century ranching and plantation-era transformation to modern conservation and recreation, Mālaekahana reflects the broader historical forces that shaped Oʻahu's north shore while remaining a place of continuity, memory, and open land.

Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupua'a, Ko'olauloa District, O'ahu Island

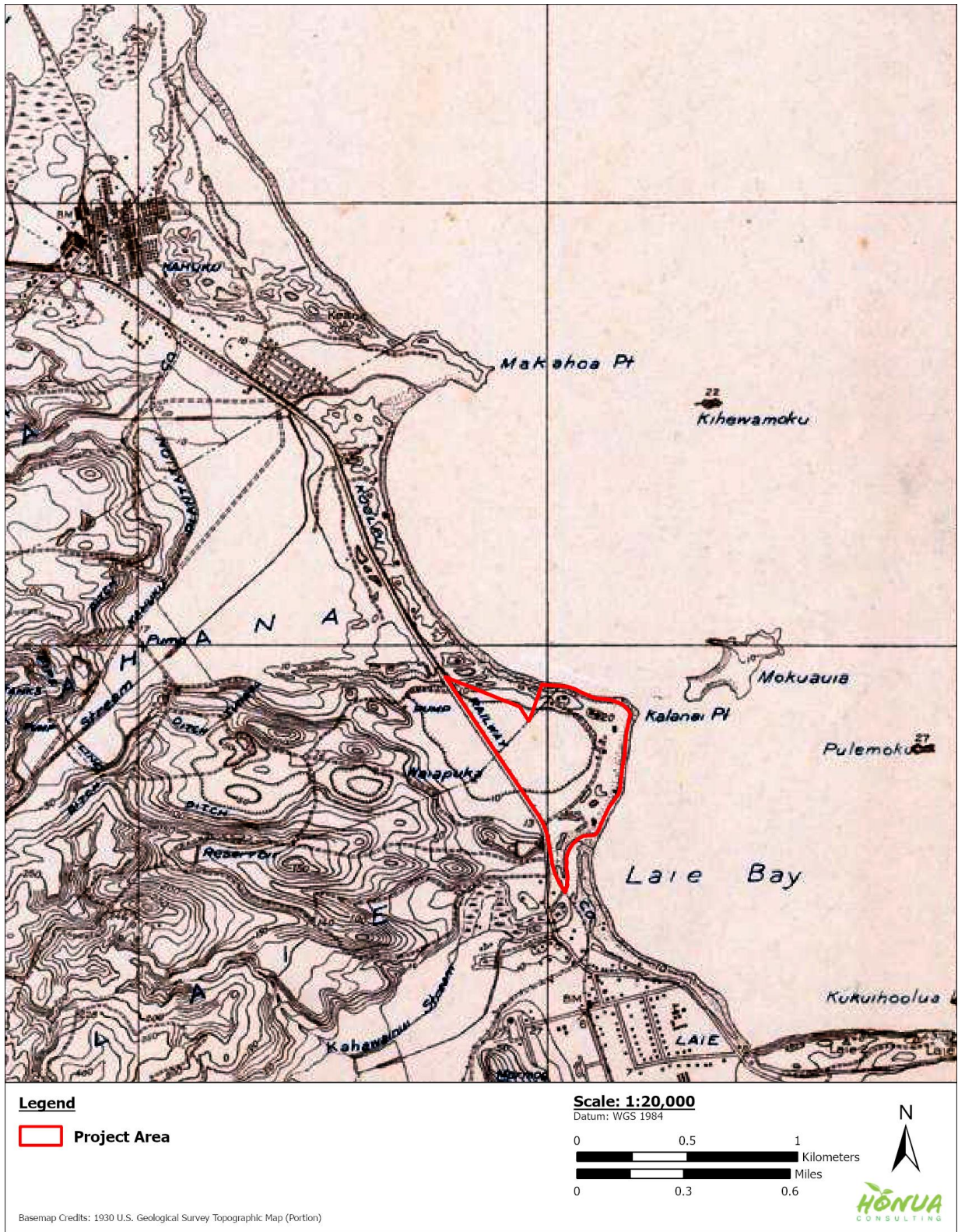


Figure 7. 1930 map showing the railroad running through the area.

Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupua'a, Ko'olauloa District, O'ahu Island



Figure 8. 1952 map showing the project area and growth in the area.

The sugar economy declined in the early twentieth century. By 1920, the Lāʻie Plantation faced mounting debt, and by 1931 it closed entirely. The Great Depression further weakened agricultural activity, leaving irrigation systems and plantation infrastructure in disrepair. Despite these changes, traditional Hawaiian practices persisted. Ethnographic accounts and oral histories document continued taro cultivation by Hawaiian families in Koʻolauloa into the 1920s and 1930s (Baldrige, 1979; Safsten & Baldrige, 1981). Handy (1940) recorded extensive remnants of loʻi kalo, terraces, springs, and habitation sites in Lāʻie and surrounding areas, including lands near Mālaekahana, illustrating the endurance of traditional agriculture alongside ranching and plantation systems.

Following World War II, institutional and recreational land uses reshaped the region. The LDS Church established the Church College of Hawaiʻi in 1955 (now Brigham Young University–Hawaiʻi), followed by the opening of the Polynesian Cultural Center in 1963. These developments transformed Lāʻie into a major educational and tourism center. Although Mālaekahana was not developed for tourism on this scale, increased population and visitation heightened demand for shoreline access and open space.

In response, the State of Hawaiʻi acquired lands at Mālaekahana for public use, establishing Mālaekahana State Recreation Area (Figure 8). The park preserved one of the last large, undeveloped coastal stretches on Oʻahu’s northeast shore, providing camping, shoreline access, and recreational opportunities. While framed as a public park, Mālaekahana retained deep cultural significance, including associations with moʻolelo, freshwater features, offshore islets, and traditional subsistence practices.

Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupua'a, Ko'olauloa District, O'ahu Island



Figure 9. 1983 map showing the Malaekahana State Recreation Area.

4.0 Cultural Resources

4.1 Historic Properties and Cultural Sites

Honua Consulting completed an Archaeological Literature Review and Field Investigation (LRFI) to identify historic properties within the project area.

4.2 Natural Resources with Cultural Significance

To employ the Hawaiian landscape perspective and emphasize the symbiosis of natural and cultural resources, Honua Consulting uses the term ‘biocultural’ to refer to natural and cultural resources, with additional sub-classifications by attributes.

A brief further discussion of environmental zones and traditional Hawaiian land management practices is necessary to understand the tangible and intangible aspects of the Hawaiian landscape. Additionally, it is important to point out once again that in the Hawaiian landscape, all natural and cultural resources are interrelated and culturally significant. Natural unaltered landscape features such as rocky outcrops, cinder cones, intermittent streams, or an open plain can carry as much significance as a planted grove of wauke (*Broussonetia papyrifera*) or a boulder-lined ‘auwai (canal).

Maly presents a narrative of traditional Hawaiian land management strategies and the different environmental zones recorded in *Ka Hoku o Hawaii* (September 21, 1916):

Hawaiian customs and practices demonstrate the belief that all portions of the land and environment are related, like members of an extended family, each environmental zone was named, and their individual attributes were known. Acknowledging the relationship of one environmental zone (wao) to another, is rooted in traditional land management practices and values. Just as place names tell us that areas are of cultural importance, the occurrence of a Hawaiian nomenclature for environmental zones also tells us that there was an intimate relationship between Hawaiians and their environment.

The native tradition of Ka-Miki provides readers with a detailed account of Hawaiian land divisions and environmental zones. While competing in a riddling contest at the court of the chief, Palikū-a-Kīko‘oko‘o, the hero, Ka-Miki sparred with Pīna‘au, the foremost riddler of the district of Hilo Palikū (northern Hilo). The riddles covered topics describing regions from the mountain tips to the depths of the ocean, and descriptions of kalo (taro growth), the ala loa (trail

systems), and nā mea lawai‘a (fishing practices). As the contest unfolded, it was seen that each of the competitors were well matched. In one of the riddles, Ka-Miki described the various regions of the island of Hawaii, extending from the mountain to the sea. Ka-Miki then told his opponent, that if he could rise to the challenge of answering the riddle, his knowledge could be compared to one who has ascended to the summit of the “mauna o Paliahu” (mountain of Poli‘ahu, or Mauna Kea) (in *Ka Hoku o Hawaii*, September 21, 1916).

Through one of the riddles [the] reader learn[s] about the traditional wao or regions of land, districts, and land divisions of the administrators who kept peace upon the land. The environmental zones include:

1 – Ke kuahiwi; 2 – Ke kualono; 3 – Ke kaumauna; 4 – Ke ku(a)hea; 5 – Ke kaolo; 6 – Ka wao; 7 – Ka wau ma‘u kele; 8 – Ka wao kele; 9 – Ka wao akua; 10 – Ka wao lā‘au; 11 – Ka wao kānaka; 12 – Ka ‘ama‘u; 13 – Ka ‘āpa‘a; 14 – Ka pahe‘e; 15 – Ke kula; 16 – Ka ‘ilima; 17 – Ka pu‘eone; 18 – Ka po‘ina nalu; 19 – Ke kai kohola; 20 – Ke kai ‘ele; 21 – Ke kai uli; 22 – Ke kai pualena; 23 – Kai Pōpolohua-a-Kāne-i-Tahiti.

1 – The mountain; 2 – The region near the mountain top; 3 – The mountain top; 4 – The misty ridge; 5 – The trail ways; 6 – The inland regions; 7 and 8 – The rain belt regions; 9 – The distant area inhabited by gods; 10 – The forested region; 11 – The region of people below; 12 – The place of ‘ama‘u (fern upland agricultural zone); 13 – The arid plains; 14 – The place of wet land planting; 15 – The plain or open country; 16 – The place of ‘ilima growth (a seaward, and generally arid section of the kula; 17 – The dunes; 18 – The place covered by waves (shoreline); 19 – The shallow sea (shoreline reef flats); 20 – The dark sea; 21 – The deep blue-green sea; 22 – The yellow (sun-reflecting sea on the horizon); and 23 – The deep purplish black sea of Kāne at Tahiti (Maly 2001: 3).

This section discusses the natural resources within the project area, specifically those natural resources that may have cultural significance or use. These natural resources were identified through the biological assessment prepared for the project and through primary research into historic resources.

4.2.1 Flora

The flora of the Mālaekahana area reflects a mix of native coastal vegetation, Polynesian-introduced plants, and later introduced species shaped by long-term human use, ranching, and recreational activity. Coastal strand species, grasses, and shrubs characterize much of the shoreline and dune environment, while inland areas include open fields and remnant vegetation associated with historic land use. Many plants in the area hold cultural significance for Native Hawaiians, including uses related to food, medicine, tools, and ceremonial practice. Detailed identification, mapping, and evaluation of plant communities and sensitive biological resources are addressed in the project’s Biological Assessment.

4.2.2 Fauna

Faunal resources at Mālaekahana include both terrestrial and marine species that have long supported subsistence, cultural practice, and community well-being in Ko‘olauloa. Marine resources such as reef fish, nearshore pelagic species, limu, and other shoreline organisms were historically central to fishing and gathering practices, while birds and other terrestrial fauna contributed to food systems, tools, and ceremonial uses. These resources are part of an interconnected mauka–makai system in which the health of marine environments is closely linked to land management practices. Detailed analysis of wildlife species, habitats, and sensitive biological resources is provided in the project’s Biological Assessment.

4.2.3 Water Resources

Fresh water (wai) is of tremendous significance to Native Hawaiians. It is closely associated with a variety of Hawaiian gods. According to traditional accounts, Kāne and Kanaloa were the “water finders:” “Ka-ne and Kanaloa were the water-finders, opening springs and pools over all the islands, each pool known now as Ka-Wai-a-ke-Akua (The water provided by a god)” (Westervelt 1915: 38). Kāne is widely known to be closely associated with all forms of water, as outlined in the mele “He Mele No Kane.”

There was no element more important or precious than water. There was no god more powerful than Kāne. Pua Kanahale recounts the oli “‘O Kāne, ‘o wai ia ali‘i o Hawai‘i?” and notes of the oli: “The chant begins with Kāne and focuses on this deity as the connective force of all the po‘e akua, or god family. All the entities mentioned in each paukū, or verse, are a manifestation of Kāne” (2011: 24). The association between water and Kāne is logical considering certain interpretations of Hawaiian mythology identify Kāne as the most powerful of all the Hawaiian gods.

Further investigation into the relationship between Kāne and Pele would be appropriate and helpful. Some interpretations identify Kāne as Pele’s father (Westervelt 1915). A full analysis of the different perspectives on Pele and Kāne would be helpful to refining an approach in

developing community education programs for geothermal energy and culture. A brief analysis is provided below.

He Mele No Kane asks:

E ui aku ana au ia oe,
Aia i hea ka Wai a Kane?
Aia i lalo, i ka honua, i ka Wai hu,
I ka wai kau a Kane me Kanaloa-
He waipuna, he wai e inu,
He wai e mana, he wai e ola,
E ola no, ea!

One question I ask of you:
Where flows the water of Kane?
Deep in the ground, in the gushing spring,
In the ducts of Kane and Kanaloa,
A well spring of water, to quaff,
A water of magic power- The water of life!
Life! O give us this life!

This mele and other mo‘olelo are clear: Kāne is water. It is deeply valued among the Hawaiian people. The only exceptions may be mist, known to be associated with Lilinoa, and snow, associated with Poliahu. There is an extensive body of traditional knowledge about the expeditions of Kāne and Kanaloa during which Kāne drove his ‘ō‘ō (digging stick) into the earth in search of water.

Contemporaneous protections around water as a “public trust resource” extend back to the Kingdom, where the concept of owning water contradicted Hawaiian cultural values and traditions. Under the monarchy, control of water was reserved for use by the people who lived on and worked the land. The use of surface water was strictly controlled through the kapu system to ensure that all land tenants enjoyed an abundant availability of water. Farming, particularly kalo or taro, occurred regularly, especially in places with notably fertile lands like those found in the watersheds of East Maui. As early as 1839, the public use of water was codified by Kauikeaouli, Kamehameha III. His “Respecting Water for Irrigation” law stated: “In all places which are watered by irrigation, those farms which have not formally received a division of water, shall, when this new regulation respecting lands is circulated, be supplied in accordance with this law, the design of which is to correct in full all those abuses which men have introduced. All those farms which were formally denied a division of water, shall receive their equal proportion. Those bounties which God has provided for the several places should be equally distributed, in order that there may be an equal distribution of happiness among all those who labor in those places” (Cited in *Reppun v. Board of Water Supply*, 656 P.2d 57 1982). This public right eventually found its way into existing law, where the Hawaii Water Code continues to recognize and protect traditional farming and mahi ‘ai (farmers).

It is critical for this CIA to consider impacts to cultural practices, even when the practices may take place outside the project area if project activities within the project area have the

potential to impact traditional practices and customs. In this particular case, it is appropriate to carefully consider the impact water usage may have on farmers and other practitioners within the watershed(s) from which the water for this project will be drawn. If the water usage potentially results in an allocation of water that diverts these resources from cultural and/or traditional uses, that potential impact should be considered. The project should remain mindful of its water consumption and ensure that its usage does not exceed the sustainable yield for any of the aquifers from which it draws water. The nearest fresh water source is the Kahawainui Stream, which is adjacent to the project area.

4.2.4 Rains

Akana and Gonzalez in *Hānau Ka Ua: Hawaiian Rain Names* explain the significance of the wind and rain in Native Hawaiian culture:

In the mind...of our Hawaiian kūpuna [(ancestors)], every being and every thing in the universe was born. Our kūpuna respected nature because we, as kānaka, are related to all that surrounds us – to plants and creatures, to rocks and sea, to sky and earth, and to natural phenomena, including rain and wind. This worldview is evident in a birth chant for Queen Emma, “Hānau ke aliʻi, hānau ka ua me ka makani” (The chiefess was born, the rain and wind, too, were born). Our kūpuna had an intimate relationship with the elements. They were keen observers of their environment, with all of its life-giving and life-taking forces. They had a nuanced understanding of the rains of their home. They knew that one place could have several different rains, and that each rain was distinguishable from another. They knew when a particular rain would fall, its color, duration, intensity, the path it would take, the sound it made on the trees, the scent it carried, and the effect it had on people (Akana and Gonzalez 2015: xv).

To the Native Hawaiians, no two rains are ever the same. Rain can be distinguished based on its intensity, the way it falls, and its duration, among other things. There are no rain names specifically identified for Mālaekahana. Three rains are identified for the larger region: Kīkēhala, Maʻakua, and Nāulu.

4.2.5 Winds

Mālaekahana, within the Koʻolauloa district of Oʻahu, is shaped by a constellation of named winds that reflect both their physical force and their cultural meaning. Among the most prominent is Mālualua, a powerful northeast sea wind known for blowing hard and unevenly, at times pāhili—lashing the land with force, as reflected in ʻōlelo Hawaiʻi descriptions of winds

that batter vegetation and shift abruptly in direction (Pukui & Elbert, 1986). Closely related is Moa‘e, the prevailing trade wind of this coast, steady and persistent, and sometimes intensified as *Moa‘e kū*, forming the dominant wind pattern influencing daily conditions along the Ko‘olauloa shoreline (Pukui & Elbert, 1986; Almeida, 1997). Localized within this broader wind system are winds tied to specific places: Ahamanu, the salt-laden wind of Kahuku; Lanakila, the wind of Hau‘ula; and Peapueo, associated with Kaunala. These winds are identified as distinct to their respective ahupua‘a in traditional sources documenting the winds of O‘ahu, underscoring the finely tuned environmental knowledge of the region’s kūpuna, in which winds are understood as place-based forces that shape both landscape and lived experience (Almeida, 1997).

4.3 Intangible Cultural Resources

It is important to note that Honua Consulting’s unique methodology divides cultural resources into two categories: biocultural resources and built environment resources. We define biocultural resources as elements that exist naturally in Hawai‘i without human contact. These resources and their significance can be demonstrated through oral histories and literature. We define built environment resources as elements that arise from human interaction with biocultural resources, whose existence and history can be documented and verified through anthropological and archaeological observation. Utilizing this methodology is critical in the preparation of a CIA as many resources, such as those related to akua (Hawaiian gods), do not necessarily result in material evidence, but nonetheless are significant to members of the Native Hawaiian community.

Hawaiian culture views natural and cultural resources as being one and the same: without the resources provided by nature, cultural resources could and would not be procured. From a Hawaiian perspective, all natural and cultural resources are interrelated, and all natural and cultural resources are culturally significant. Kepā Maly, ethnographer and Hawaiian language scholar, points out, “In any culturally sensitive discussion on land use in Hawaii, one must understand that Hawaiian culture evolved in close partnership with its natural environment. Thus, Hawaiian culture does not have a clear dividing line of where culture ends and nature begins” (Maly 2001: 1).

4.3.1 ‘Ōlelo No‘eau

‘Ōlelo no‘eau are another source of cultural information about the area. ‘Ōlelo no‘eau literally means “wise saying” and they encompass a wide variety of literary techniques and multiple layers of meaning common in the Hawaiian language. Considered to be the highest form of cultural expression in old Hawai‘i, ‘ōlelo no‘eau bring us closer to understanding the everyday thoughts, customs, and lives of those that created them.

There are no specific ‘ōlelo no‘eau for Mālaekahana, so one for Ko‘olau and one for Lā‘ie have been provided. These ‘ōlelo no‘eau are found in Pukui’s *‘Ōlelo No‘eau: Hawaiian Proverbs & Poetical Sayings* (1983). Nā pali hauliuli o ke Ko‘olau, meaning “the blue-green cliffs of the Ko‘olau,” evokes the towering cliffs of the Ko‘olau Range, whose slopes often appear dark blue or green as clouds, mist, and frequent rains cling to the mountains. The saying reflects both the visual majesty of the range and its role as a life-giving source of water, winds, and weather that sustain the windward districts. In contrast, Lā‘ie i ka eheu o nā manu, translated as “Lā‘ie carried on the wings of birds,” describes Lā‘ie as a place uplifted and favored, suggesting movement, abundance, and a close relationship to the winds and skies that guide seabirds and seasonal migrations along the coast.

4.3.2 Mele

Honua Consulting completed searches of mele written about the ahupua‘a of Mālaekahana. Maui historian Inez Ashdown wrote in 1976 about the importance of mele:

The natives of Hawai‘i Ne‘i saw the Creator in everything and the Haku Mele or Music Masters delighted in presenting the chants and songs, mele and oli, to inspire the people. Such mele tell of God’s assistant spirits which, to the imaginative natives, represented the winds, rains, and so on. Each spirit of creation was depicted as male or female and was given a personality and a name indicative of purpose. Hence the name of the volcanic action creating and cleansing the earth. She is beautiful, alluring, desirable. She also is unpredictable because she is temperamental and usually full of fiery emotions. She is an old woman asking help when she lies to test mortals, and woe betide anyone who is rude or inconsiderate of this form of an older person to whom respect and Aloha must be given (Ashdown 1976: 3).

There are not a lot of mele about Mālaekahana. The only Hawaiian mele written about Mālaekahana was composed contemporaneously by Kaliko Trapp about his family home in Mālaekahana.

Mālaekahana

Aia lā i Mālaekahana
Ka hoaloha a‘e naue nei

There are Mālaekahana
My friends comes my way

He ‘ike nō lā au i ke kai

I see the sea

**Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupuaʻa, Koʻolauloa District, Oʻahu Island**

A me ka lau e holu nape ana	And the leaves that move to and fro
He lau he mano nā hoaloha I hiki mai i ka hale nei	There are so many friends That have come here to this house
Na ka makani aʻi lawe mai Nā puʻuone aʻo kahakai	The wind has done its work Bringing the sand dunes to the shore
Haʻina ʻia mai ana ka puana No kuʻu hoa i Mālaekahana	Tell the story Of my dear friend at Mālaekahana

5.0 Ethnographic Data

The Koʻolaupia region is unique in that due to the presence of BYU-Hawaii, there is a collection of oral histories available about the region. The ethnographic data presented in this section is drawn from a series of oral history interviews conducted primarily between 1970 and 1979 with kūpuna and long-time residents whose lives were closely tied to Lāʻie and the surrounding Koʻolaupia region. These interviews were undertaken by respected Hawaiian scholars and institutions, including Clinton Kanahale and the Brigham Young University–Hawaiʻi Oral History Program, with the express purpose of recording ʻike kūpuna, genealogical knowledge, place-based memory, and lived experiences in ʻōlelo Hawaiʻi and English.

Collectively, these interviews document how people understood and interacted with the land through daily practice, travel, labor, subsistence, worship, and community life, rather than through formal land tenure or modern property divisions. The narratives consistently emphasize relationships to place grounded in movement across the landscape, intergenerational memory, and functional use of coastal and inland areas. Within this corpus, Mālaekahana emerges as part of a broader cultural landscape associated with Lāʻie, recognized through transportation corridors, shoreline access, and regional connectivity rather than as a discrete or isolated location.

5.1 1970 Oral History with William Isaac Kanakanui and Malaea Lahela Kanakanui

William Isaac Kanakanui and his wife, Malaea Lahela Kanakanui, were kūpuna interviewed in 1970 while residing in Hauʻula, Oʻahu. Mrs. Kanakanui was born in Waiehu, Maui, and raised in Waiheʻe, where she received her early education, while Mr. Kanakanui represents a generation of Native Hawaiians whose lives bridged traditional Hawaiian upbringing and the territorial period. Their genealogical references, schooling, and family histories reflect patterns of interisland movement and extended ʻohana networks common among Hawaiian families of the late nineteenth and early twentieth centuries.

The interview was conducted by Clinton Kanahale on June 10, 1970, as part of a Hawaiian-language oral history initiative intended to preserve ʻōlelo Hawaiʻi and firsthand accounts for future generations (Kanahale, 1970).

Relevance to Lāʻie and Mālaekahana

Although this interview does not focus directly on Mālaekahana, it provides important contextual information regarding mobility, education, and family life that mirrors experiences in Koʻolauloa communities such as Lāʻie. The discussion of schooling, kumu, and movement between communities illustrates how families routinely traversed districts rather than remaining fixed in one place. This broader pattern of regional movement is relevant to understanding Mālaekahana as part of an interconnected coastal landscape used by multiple communities rather than a standalone area.

5.2 1979 Oral History of Bella Linkee and Ruby Enos

Bella Linkee and Ruby Enos were kūpuna born and raised in Lāʻie who possessed deep, place-based knowledge of the Koʻolauloa landscape as it existed prior to and during the plantation era. Their lives encompassed a period when Lāʻie functioned as a rural Hawaiian community shaped by agriculture, fishing, plantation labor, and rail transportation, as well as the growing institutional presence of the Church of Jesus Christ of Latter-day Saints. Their recollections reflect firsthand experience with land use, travel routes, and community organization across Lāʻie and adjacent coastal areas.

Interviewer and Context

The interview was conducted on July 12, 1979, by Ken Baldrige as part of the Brigham Young University–Hawaiʻi Oral History Program (Linkee & Enos, 1979). The interview followed a place-based methodology: the interviewees were driven through Lāʻie and surrounding areas while identifying historic sites, roads, and landmarks. The transcript is keyed to a map, allowing specific locations to be correlated with oral testimony.

Mālaekahana within the Lāʻie Cultural Landscape

Mālaekahana appears in this interview as an integral component of the broader Lāʻie–Koʻolauloa cultural and economic landscape. Most notably, both Bella Linkee and Ruby Enos reference the Mālaekahana railroad station, identifying it as a familiar and meaningful landmark within their lived geography. The station is discussed alongside other routinely referenced places in Lāʻie, demonstrating that Mālaekahana was well known to residents and embedded within everyday patterns of movement and activity (Linkee & Enos, 1979).

The railroad station at Mālaekahana is particularly significant because it situates the area within a regional transportation network that connected Lāʻie residents to plantation work, neighboring communities, and coastal resources. The interview reflects how the railroad

structured daily life, enabling people to move efficiently along the Koʻolauloa coast. Mālaekahana functioned as a node within this system rather than as an endpoint, facilitating access to shoreline areas and adjacent lands for work, travel, and subsistence activities.

Ruby Enos reinforces this understanding by describing places in relation to recognizable landmarks and travel routes—such as roads, buildings, and the railroad—rather than by referencing property boundaries or legal parcels. In her recollections, the Mālaekahana railroad station serves as a clear point of orientation, marking where people traveled through, stopped, or accessed the shoreline and surrounding lands. By using the station to anchor memories of daily movement and activity, Enos reflects a way of knowing place that is rooted in use and experience. This approach is consistent with Hawaiian oral traditions, in which places are identified through how they are lived in, worked, and moved through, rather than through abstract notions of ownership or surveyed boundaries.

Bella Linkee’s recollections further demonstrate that coastal lands such as Mālaekahana were understood through familiarity and function. Mālaekahana is referenced without explanatory detail, suggesting an assumed shared knowledge of the place among community members. This casual manner of reference indicates that Mālaekahana was neither remote nor marginal, but instead part of the everyday mental map of Lāʻie residents. It was known through repeated interaction, whether by rail travel, shoreline use, or movement between communities.

Together, the testimonies of Linkee and Enos situate Mālaekahana within a continuous coastal landscape extending between Lāʻie and Kahuku. The shoreline is remembered as productive and accessible, shaped by customary movement and shared use rather than rigid boundaries. Their oral histories provide ethnographic evidence that Mālaekahana historically functioned as an active, connected place within the Lāʻie cultural landscape, shaped by transportation, labor, and long-standing relationships between people and land (Linkee & Enos, 1979).

5.3 Interview with Tau Hanneman

Tau Hannemann is a long-time resident of the Koʻolauloa region who has lived in Lāʻie since early childhood, having moved to Hawaiʻi at approximately eight years of age. He is currently employed as a City and County of Honolulu lifeguard, a role that places him in continuous, hands-on relationship with Oʻahu’s shoreline environments. Through both his profession and personal life, Mr. Hannemann has developed extensive knowledge of ocean conditions, coastal access patterns, public safety concerns, and community use of shoreline spaces along

the north and windward coasts, including Mālaekahana, Goat Island, Hukilau Beach, and Kualoa.

His professional responsibilities require daily observation of changing coastal dynamics, human activity, and environmental conditions, which inform his understanding of how land-based decisions affect ocean health, access, and safety. As such, his perspective reflects not only personal connection and community memory, but also practical experience in stewardship, risk awareness, and long-term coastal use.

Relationship to the Project Area

Mr. Hannemann described Mālaekahana State Recreation Area as a place deeply embedded in his personal history and daily life. He grew up in close proximity to the park and spent much of his youth camping, surfing, fishing, and recreating there. These activities were described as formative experiences that fostered a strong sense of attachment to place. He continues to pass through the area nearly every day and remains actively engaged with the surrounding coastline through both work and recreation.

Mālaekahana was characterized as one of the few remaining open and relatively undeveloped coastal spaces on Oʻahu, particularly within the increasingly urbanized context of the island. Mr. Hannemann emphasized that the openness of the landscape, the lack of intensive development, and the ability for families to freely access the shoreline contribute significantly to the area's cultural and social importance. In his view, Mālaekahana functions as a refuge not only in a historical sense, but also in a contemporary one, providing space for rest, reflection, and continued cultural connection.

Cultural Resources and Cultural Significance

Mr. Hannemann identified Mālaekahana as a culturally sensitive landscape with deep historical significance. He shared his understanding that the area functioned as a place of refuge in traditional Hawaiian times under the kapu system, a role that underscores its historical and spiritual importance. While he did not cite specific traditional accounts or archaeological sites, he emphasized that such knowledge has been shared within the community and reinforces the need for respect and caution in planning activities.

He further expressed the belief that iwi kūpuna are likely present within the park or surrounding lands, given the long history of Hawaiian occupation and use of the Koʻolauloa coastline. Importantly, Mr. Hannemann stressed that cultural significance should not be limited to known or mapped sites, but rather understood as embedded within the broader landscape. The natural condition of the land, the continuity of access, and the absence of

intrusive development were all identified as contributing to the cultural integrity of Mālaekahana.

Traditional and Customary Practices

Ongoing traditional and customary practices identified at Mālaekahana include camping, fishing, diving, surfing, and general shoreline recreation. Mr. Hannemann described these activities as intergenerational practices that continue to connect families to place and to one another. These practices were not characterized as recreational only, but as part of everyday cultural life that reinforces relationships with the ocean and ʻāina.

Mr. Hannemann also specifically noted the presence of a memorial at Mālaekahana honoring Tamayo Perry, a City and County of Honolulu lifeguard, surfer, and community member who was killed in a shark attack near Goat Island. He explained that the memorial serves as a place of remembrance and reflection for fellow lifeguards, family members, and the broader community. This contemporary cultural expression reinforces Mālaekahana's ongoing role as a place of collective memory, mourning, and respect, and demonstrates how cultural significance continues to evolve through lived experience and community events.

Although organized ceremonial or hula practices were not identified during the interview, Mr. Hannemann emphasized that the absence of formalized activities does not diminish the cultural importance of the area. Instead, he underscored that continuous, informal, and lived use of the land and shoreline remains a vital expression of culture.

Cultural Concerns Related to Proposed Improvements

Mr. Hannemann expressed clear but conditional support for the Mālaekahana Restoration Project. He stated that efforts focused on restoring and improving existing infrastructure—such as restroom renovations, pathway repairs, and general maintenance—would be appropriate and beneficial. He acknowledged that temporary inconvenience during construction, including limited restroom access, would be acceptable if the long-term outcome improves existing facilities without altering the character of the park.

However, he expressed strong concern regarding the introduction of new development or infrastructure beyond what currently exists. In particular, he identified wastewater leach fields and other subsurface systems as highly problematic. Drawing from his experience at Kualoa Beach Park, Mr. Hannemann described how the installation of a new restroom and associated leach field resulted in the loss of open green space and permanently altered the visual and cultural landscape. He noted that such changes may not always be immediately apparent but have lasting impacts on how a place feels, functions, and is experienced by the community.

He stated that similar infrastructure at Mālaekahana would significantly diminish the mana of the place, interfere with cultural continuity, and erode the sense of refuge that the park currently provides. The fencing, ground disturbance, and long-term spatial changes associated with leach fields were identified as particularly incompatible with the cultural sensitivity of the area.

Best Management Practices and Preferences

If wastewater system improvements are required, Mr. Hannemann strongly recommended avoiding on-site leach fields altogether. He expressed a clear preference for connecting any upgraded restroom facilities to existing municipal sewer infrastructure serving the Lāʻie area, rather than introducing new subsurface disposal systems within the park.

He explained that centralized sewer connections would minimize ground disturbance, reduce the likelihood of impacting cultural resources, and preserve open space. From his perspective, this approach would better align with cultural values, public safety considerations, and long-term environmental stewardship, while still addressing practical infrastructure needs.

Overall Assessment of Cultural Impacts

Mr. Hannemann concluded that Mālaekahana's cultural importance lies in its openness, natural character, and continued accessibility as one of the last relatively undeveloped coastal areas on Oʻahu. He emphasized that the park's value is inseparable from its landscape-scale integrity, and that maintaining this character is essential to sustaining cultural practices, community relationships, and spiritual connection to place.

In his assessment, restoration efforts that enhance existing facilities without expanding development are unlikely to result in adverse cultural impacts and may offer long-term benefits. Conversely, new development, expanded infrastructure, or installation of leach fields would negatively affect cultural resources, customary practices, access, and the spiritual integrity of the area. Preserving Mālaekahana as it exists today, while thoughtfully caring for what is already there, was identified as critical to protecting its cultural value for present and future generations.

5.4 Interview with Kealiʻi Bush

Background and Community Affiliation

Kealiʻi Bush is a Native Hawaiian community member born and raised in Lāʻie, where he spent his formative years in the Koʻolauloa region. Although he currently resides in Waimānalo, he

**Cultural Impact Assessment for the Mālaekahana,
Mālaekahana Ahupuaʻa, Koʻolauloa District, Oʻahu Island**

maintains strong familial, cultural, and experiential ties to Lāʻie, Mālaekahana, and surrounding North Shore communities. He is employed by the City and County of Honolulu as a refuse collector, providing him with firsthand knowledge of public infrastructure, park maintenance needs, and municipal resource prioritization across Oʻahu.

In addition to his municipal work, Kealiʻi is an active cultural practitioner and artist. He is an experienced Polynesian drummer and musician, with particular expertise in Tahitian and broader Polynesian drumming traditions. He currently performs with his family drum group at Kamoana Lūʻau and previously performed at the Polynesian Cultural Center, where he began participating in cultural performance while still in high school. His background positions him as both a cultural practitioner and a long-time user of public parks as spaces for rehearsal, gathering, and cultural expression.

Relationship to the Project Area

Kealiʻi described Mālaekahana and the surrounding coastal areas as places he frequented regularly while growing up. Activities included beach use, shoreline recreation, and informal cultural practice. Mālaekahana was described as a large, open stretch of land between Kahuku and Lāʻie that has historically supported a wide range of community uses. His relationship to the area is based on long-term, everyday use rather than occasional visitation, underscoring its importance as part of the lived cultural landscape of Koʻolauloa.

Cultural Resources and Archaeological Sensitivity

Kealiʻi expressed strong concern regarding the likelihood of iwi kūpuna being present within the Mālaekahana area. He emphasized that burials are widespread throughout Hawaiʻi and that sandy coastal environments such as Mālaekahana have a high potential for ancestral remains. While he did not identify specific burial locations, he stressed that the area should be treated as culturally sensitive and approached with caution, particularly with respect to any ground-disturbing activities.

He also expressed concern about potential impacts to native plants, trees, shoreline environments, and nearshore ecosystems. Although he did not identify specific plant species, he emphasized that the natural environment itself is integral to the cultural value of the place and that any disturbance could constitute desecration of a landscape he associates with his upbringing and cultural identity.

Customary, Traditional, and Contemporary Practices

Kealiʻi identified Mālaekahana and similar public parks as important spaces for informal cultural practices, including drumming, music practice, gathering, and other forms of cultural expression. He stated that he and others have historically used parks for practice and

rehearsal, valuing these spaces for their openness, privacy, and natural setting. Mālaekahana, due to its size and relative openness, was described as particularly well suited for such uses.

He further emphasized that public parks in Hawaiʻi are often used for private or semi-private cultural and spiritual practices, including pule. He explained that Hawaiian spirituality does not require formal structures such as churches, and that beaches and parks frequently serve as places where individuals maintain relationships with akua and ʻāina. Any disruption to access, privacy, or the natural setting could adversely affect these practices, even if they are not always visible or formally organized.

Concerns Regarding Potential Project Impacts

Kealiʻi expressed concern that construction activities associated with the restoration project could deter people from using Mālaekahana for cultural practices. Even temporary construction could discourage practitioners who value solitude, privacy, and a natural environment free from industrial activity. He noted that some community members may avoid the area during construction due to noise, machinery, or the presence of workers.

A major concern identified was the potential for construction runoff, including cement, sediment, or other pollutants, to enter the ocean. Kealiʻi emphasized that runoff could damage coral reefs, limu, fish, and other marine resources that continue to be used for subsistence and cultural purposes. He described such impacts as pollution that could suffocate reef systems and harm resources relied upon by Kanaka Maoli.

Recommendations and Best Management Practices

Kealiʻi recommended that any renovation or restoration work be conducted with the least possible impact to the land, shoreline, and ocean. He acknowledged the need for park renovations, particularly restroom upgrades, noting that poorly maintained facilities discourage use and can negatively affect public health and accessibility. However, he emphasized that improvements must be carefully balanced with cultural and environmental protection.

Given the high likelihood of encountering iwi, Kealiʻi strongly recommended the presence of a qualified cultural monitor during any ground-disturbing activities. He expressed concern that construction personnel may not be trained to recognize iwi and could inadvertently disturb ancestral remains if monitoring is not in place. Continuous on-site cultural monitoring was identified as necessary to ensure that work stops immediately if iwi are encountered.

He also emphasized the importance of containing runoff and preventing construction materials from entering the ocean, though he acknowledged uncertainty regarding specific

engineering solutions. His primary recommendation was to avoid unnecessary disturbance and to prioritize protection of marine and coastal resources.

Overall Cultural Impact Perspective

Keali‘i concluded that Mālaekahana holds ongoing cultural importance as a place of gathering, cultural practice, spirituality, and environmental relationship. He expressed cautious support for renovations that improve existing infrastructure, provided they are undertaken with cultural sensitivity, environmental care, and minimal disturbance. He emphasized that restoration conducted with respect and appropriate safeguards may be acceptable, while poorly managed construction could result in lasting cultural and environmental harm.

5.5 Interview with Matthew Sproat

Background and Cultural Affiliation

Matthew Sproat is a Native Hawaiian cultural practitioner, professional Hawaiian musician, and cultural resource management practitioner. He was born and raised in Hau‘ula, O‘ahu, and currently resides in Kaimukī. His professional background includes work as an emcee and performer at Ka Moana Lū‘au, as well as experience in cultural resource management. His upbringing and professional life are deeply rooted in Hawaiian cultural practice, subsistence traditions, and knowledge gained through lived experience along the Ko‘olauloa and North Shore coastline.

Relationship to the Project Area

Mālaekahana is a place of significant personal, cultural, and subsistence importance to Matthew Sproat. Growing up in Hau‘ula, Mālaekahana and nearby Hukilau Beach were regularly used for recreation, fishing, gathering, and family activities. Ocean resources were central to family sustenance, with fish and other marine resources often providing food for evening meals. Matthew has been a lifelong fisherman and diver, taught these practices by his father. Mālaekahana was also remembered as a place associated with family bonding and balance, often visited after completing household work.

Hukilau Beach, identified as part of the broader Mālaekahana area, holds cultural prominence as the origin of the well-known Hukilau song and hula, which has been taught locally and internationally for nearly a century. The shoreline and nearshore environment were described as diverse and accessible, with fine sand, gentle shoreline conditions, and offshore surf breaks associated with Goat Island. These conditions support ongoing use by surfers, fishers, and divers.

Cultural Resources and Subsistence Practices

Mālaekahana has long supported subsistence and cultural gathering practices. Resources traditionally harvested in the area include fish such as moi, papio, ‘oʻio (bonefish), goatfish, and octopus (heʻe), as well as limu. These resources were described as essential components of family sustenance rather than recreational pursuits. The area continues to support subsistence gathering and remains culturally important for food provisioning and recreational use.

A freshwater stream originating in the Lāʻie Mountains flows through the community and periodically empties into the ocean within Mālaekahana State Recreation Area. Although the stream does not consistently discharge into the ocean, it represents an important freshwater – marine interface. There is a strong likelihood that native Hawaiian species such as ‘oʻopu and ‘ōpae inhabit this stream, increasing its cultural and ecological sensitivity.

Archaeological Sensitivity and Iwi

The project area is situated on sandy coastal substrate consistent with dune environments common throughout the Kahuku and Koʻolauloa region. Based on these conditions and regional burial patterns, there is a high likelihood that iwi kūpuna may be present within the park. Although specific burial locations are not known, the absence of recorded sites does not preclude the presence of ancestral remains. Any subsurface disturbance therefore presents a risk of impacting iwi.

Customary Practices and Cultural Landscape Context

In addition to shoreline recreation and subsistence activities, Mālaekahana forms part of a broader cultural landscape. Gunstock Ranch, located across the street from the park, represents a continuation of ranching and paniolo traditions dating back to the early nineteenth century. Matthew Sproat identified himself as having grown up as a paniolo and described frequent use of the ranch in his youth. Mālaekahana was therefore described not as an isolated recreational site, but as part of an interconnected landscape reflecting multiple layers of cultural practice and land use.

Concerns Regarding Project Impacts

Several potential adverse impacts were identified. Ground disturbance associated with restoration activities could result in impacts to iwi kūpuna if present. Construction-related runoff could enter the ocean or the freshwater stream, affecting marine life, limu beds, and

native aquatic species. Such impacts would affect both ecological health and subsistence practices.

The most significant concern related to wastewater infrastructure. Uncertainty remains regarding whether existing facilities rely on septic systems or leach fields and whether any expansion of these systems is proposed. Expansion or creation of leach fields was identified as a serious concern, particularly if wastewater or overflow were to reach coastal or freshwater environments. Improperly managed wastewater could result in long-term cultural and environmental harm.

Recommendations and Best Management Practices

Support was expressed for renovation projects that improve public infrastructure, particularly restroom facilities, recognizing their importance for public use and park accessibility. However, any project should incorporate strong protective measures. Recommended actions include the presence of qualified cultural monitors during all ground-disturbing activities, immediate cessation of work and preservation in place if iwi are encountered, and redesign of project elements to avoid further disturbance.

Additional recommendations include strict containment of runoff to prevent sediment or contaminants from entering marine or freshwater environments and careful evaluation of wastewater systems. Where feasible, connection to existing municipal sewer infrastructure serving Lāʻie is preferred over reliance on or expansion of leach fields.

Overall Cultural Impact Perspective

Mālaekahana was described as a place of ongoing cultural practice, subsistence, and community use with deep personal and collective significance. Renovation efforts that benefit the public are supported, provided they are implemented with cultural sensitivity, environmental protection, and respect for ancestral presence. Without appropriate safeguards, restoration activities could result in adverse impacts to iwi, marine and freshwater resources, and the broader cultural landscape. With careful planning, monitoring, and community-informed decision-making, restoration can proceed in a manner consistent with cultural values and community needs.

6.0 Traditional or Customary Practices Historically in the Study Area and Surrounding Area

In traditional (pre-western contact) culture, named localities served a variety of functions, informing people about: (1) places where the gods walked the earth and changed the lives of people for good or worse; (2) heiau or other features of ceremonial importance; (3) triangulation points such as ko‘a (fishing markers) for fishing grounds and fishing sites (4) residences and burial sites; (5) areas of planting; (6) water sources; (7) trails and trail side resting places (o‘io‘ina), such as a rock shelter or tree shaded spot; (8) the sources of particular natural resources/resource collections areas, or any number of other features; or (9) notable events which occurred at a given area. Through place names knowledge of the past and places of significance was handed down across countless generations. There is an extensive collection of native place names recorded in the mo‘olelo (traditions and historical accounts) published in Hawaiian newspapers.

This is not intended to be a comprehensive list of all the practices that historically or contemporaneously occur in the project area. This is meant to show the range of traditional or customary practices that took place in the larger geographic extent. Many of these practices may not have taken place within the project area, although they may actively occur within the larger ahupua‘a.

6.1 Mo‘olelo

Mo‘olelo is the practice of storytelling and developing oral histories for the purpose of transmitting knowledge information and values intergenerationally. Mo‘olelo are particularly critical in protecting and preserving traditional culture in that they are the primary form through which information was transmitted over many generations in the Hawaiian Islands and particularly in the Native Hawaiian community. In a collection of essays about mo‘olelo, professors C.M. Kaliko Baker and Tammy Haili‘ōpua Baker explain: “*Mo‘olelo*, loosely translated as stories and histories, are the *kūkulu* “pillars” that shoulder and chronicle Kanaka Maoli narratives and beliefs. The mo‘o, or successions, of *‘ōlelo* “words” are the foundation for the many genres of mo‘olelo which collectively represent the prowess of the Kanaka Maoli literary canon” (2023, 2).

Storytelling, oral histories, and oration are widely practiced throughout Polynesia and important in compiling the ethnohistory of the area. The Native Hawaiian newspapers were particularly valued for their regular publication of different mo‘olelo about native Hawaiian history. Were it not for the newspapers having the foresight to allow for the printing and publication of mo‘olelo, far less information about the cultural history of the Hawaiian people would be available today.

There are mo‘olelo about Honua‘ula and the geographic extent. These mo‘olelo are provided in **Sections 3.3 (Pre-Contact Period)** and in **Section 4.0 (Cultural Resources)**.

6.1.1 Moʻo Traditions

As noted above, moʻolelo about moʻo are provided in **Sections 3.3**. In her recent text, *Ka Poʻe Moʻo Akua: Hawaiian Reptilian Water Deities*, Native Hawaiian scholar Marie Alohalani Brown explains moʻo as “the fearsome and fascinating Hawaiian gods known as moʻo who embody the life-giving and death-dealing properties of water, the element with which they are associated. Moʻo are not ocean dwellers. Instead, they live primarily in or near bodies of fresh water. As a class of deities, they vary greatly in size – as huge as mountain or as tiny as a house gecko. Many moʻo have alternate forms. Predominantly female, those moʻo who masquerade as humans are often described as stunningly beautiful. Tradition holds that when you come across a body of fresh water in a secluded area and everything is eerily still, you should not linger for you have stumbled across the home of a moʻo. When the plants are yellowed and the water covered with a greenish-yellow froth, the moʻo is at home” (2022, 3).

Brown also describes the specificity with which specific and identifiable moʻo were associated with specific locations:

“Notwithstanding the fact that moʻo akua are akua wai, there is no evidence in the extensive archive of Hawaiian belief narratives and historical treatises to support the idea that the majority of our ancestors believed that this class of deities, as a *whole*, could transform into water. That said, a few moʻo do have a water-related form such as fog, mist, a rainbow, a kind of rain, or the power to control clouds or water. As a rule, their relationship with water is most evident in terms of where they live. Specifically, moʻo akua are generally associated with specific bodies of water or damp places and attributed with district dispositions that tend to parallel these locations. Thus, to better understand the ways that moʻo embody water, we should consider the physical attributes and cultural significance of their watery abodes” (Brown 2022, 45, emphasis in original).

As shows in the moʻolelo in **Section 3.3**, there are moʻo associated with the project region. Brown’s research confirms the account captured by Rice in **Section 3.3.3**, the moʻolelo of Laniloa. Brown writes: “Laniloa is a cape in Lāʻie in Koʻolaupua on Oʻahu and the name of a people-killing moʻo. This cape is a remnants of its body after Kana killed him. Kana chopped Laniloa’s head into five pieces, which became the five islets in front of Mālaekahana: Malualai (a.k.a. Mokuālai), Keauakaluapaʻa, Pulemoku, Mokuaniwa (a.k.a. Mokuʻauia), and Kihewamoku (a.k.a. Kukuihoʻolua)” (Brown 2022, 110).

6.2 Habitation

Hawaiians lived extensively throughout the islands. Handy, Handy, and Pukui (1991) identify how different kānaka and their ʻohana lived in accordance with what the authors termed “occupational contrasts” (286), meaning that based on occupation (i.e., planter or fisherman, for example), habitation systems differed. They describe, “The typical homestead or *kauhale*...

consisted of the sleeping or common house, the men's house, women's eating house, and storehouse, and generally stood in relative isolation in dispersed communities. It was only when topography or the physical character of an area required close proximity of homes that villages exist. There was no term for village. *Kauhale* meant homestead, and when there were a number of *kauhale* close together the same term was used. The old Hawaiians, in other words, had no conception of village or town as a corporate social entity. The terrain and the subsistence economy naturally created the dispersed community of scattered homesteads" (284).

Historic, archaeological, and cultural evidence indicates that Mālaekahana supported long-term Native Hawaiian use and occupation, though patterns of habitation varied in response to environmental conditions. As documented in the archaeological survey, much of the coastal portion of Mālaekahana, including the Kalanai area, is characterized by stabilized sand dunes and sandy soils that were generally unsuitable for permanent house construction or intensive agriculture. These areas were therefore not typically developed as permanent *kauhale*, but were actively used for subsistence, ritual, and shoreline-based practices.

Archaeological investigations within Mālaekahana State Recreation Area have documented a discontinuous subsurface cultural layer containing firepits, *imu*, postholes, midden, portable artifacts, and human burial, dating primarily to the late pre-Contact period. These materials indicate repeated short-term habitation and activity areas associated with fishing, food preparation, and shoreline access rather than permanent residence. In contrast, areas of Mālaekahana with more stable soils supported more permanent habitation and cultivation. Together, these patterns demonstrate that Mālaekahana functioned as an integrated cultural landscape supporting diverse and complementary traditional Hawaiian land uses.

6.3 Travel and Trail Usage

The ability to travel was essential to Hawaiians and enabled their sustainability. Travel, and the freedom to move throughout different areas, had different names, including *huakaʻi*, *kaʻapuni*, or *kaʻahele*. Traveling by sea had distinct names as well, like *ʻaumoana*. Traveling through the mountains was sometimes referred to as *hele mauna*. Travel, and moving throughout various places and regions was an essential practice and way of life in traditional Hawaiʻi.

The freedom to travel safely was so important that Kamehameha I would come to pass a well-known law protecting travelers, *Ke Kānāwai Māmalahoe* (The Law of the Splintered Paddle). It is explained by the William S. Richardson School of Law as follows:

As a young warrior chief, Kamehameha the Great came upon commoners fishing along the shoreline. He attacked the fishermen, but during the struggle caught his foot in a lava crevice. One of the fleeing fishermen turned and broke a canoe paddle over the young chief's head. The fisherman's act reminded Kamehameha that human life was

precious and deserved respect, and that it is wrong for the powerful to mistreat those who may be weaker.

Years later when Kamehameha became ruler of Hawai‘i, he declared one of his first laws, *Ke Kānāwai Māmalahoe* (the Law of the Splintered Paddle), which guaranteed the safety of the highways to all. This royal edict was law over the entire Hawaiian kingdom during the reign of Kamehameha the Great. Considered one of the most important *kānāwai* (royal edict), the law gave the Hawaiian people an era of freedom from violent assault (William S. Richardson School of Law 2021).

The *kānāwai* (law) reads:

E nā kānaka	O my people
E mālama ‘oukou i ke akua	Honor thy god
A e mālama ho‘i	Respect alike, the rights of
Ke kānaka nui a me kānaka iki	All men great and humble
E hele ka ‘elemakule	See to it that our aged,
Ka luahine, a me ke kama	Our women, and children
A moe i ke ala	Lie down to sleep by the roadside
A‘ohe mea nana e ho‘opilikia	Without fear of harm
Hewa no, make	Disobey, and die

The law would have such long-lasting resonance that it would be expressly incorporated into the Hawai‘i State Constitution.³

As traveling through traditional trails was the primary means by which people traveled on land throughout most of Hawaiian history, the traditional trail system is particularly important throughout the Hawaiian Islands. Throughout the islands, there were numerous trails that allowed for people to access different locations. This trail system was critical not only for maintaining a healthy population and managing this population, but it was also important for the traditional economic system of bartering. The trail system allowed for different localized communities to engage and interact. This also allowed for the trade of goods throughout island communities.

Trails in the Mālaekahana area reflect both traditional landscape use and later recreational adaptation. A newspaper account from 1936 describes a well-established trail through Mālaekahana that followed the coastal and lowland terrain and was historically used for travel and access across the area. The article notes that this route was known and utilized by

³ Article IX. Section 10 of the Hawaii State Constitution reads: “The law of the splintered paddle, *mamala-hoe kanawai*, decreed by Kamehameha I—Let every elderly person, woman and child lie by the roadside in safety—shall be a unique and living symbol of the State's concern for public safety.”

Hawaiians, supporting its role as a traditional movement corridor connecting shoreline resources and neighboring lands. Such use is consistent with traditional Hawaiian trail systems, which commonly followed natural landforms and facilitated access to fishing grounds, gathering areas, and inter-ahupua‘a travel.

Over time, changes in land ownership, land use, and infrastructure altered the function and continuity of these trails. While historic trails once supported subsistence practices and daily movement across the landscape, the trails present at Mālaekahana today appear to be largely contemporary in alignment and use. Current trails primarily serve recreational purposes such as walking, hiking, and beach access, reflecting modern use within a culturally significant landscape shaped by earlier Hawaiian travel and activity patterns.

6.4 Farming

Since poi was the staple food for Native Hawaiians, it was of the utmost priority for the first settlers to establish lo‘i. Kalo’s prominence in the Hawaiian diet derived from its nutritional value, but even more so from its mythological significance. According to Hawaiian traditions, the first human (male) was born from the taro plant:

The first born son of Wakea and Papa was of premature birth and was given the name Haloa-naka. The little thing died, however, and its body was buried in the ground at one end of the house. After a while, a taro plant shot up from the child’s body, the leaf of which was named lau-kapa-lili, quivering leaf; but the steam was given the name Haloa.

After that another child was born to them, whom they called Haloa, from the stalk of the taro. He is the progenitor of all the peoples of the earth. (Malo 1951:244)

Traditional farming at Mālaekahana was limited by environmental conditions but formed part of a broader subsistence system integrating coastal and inland resources. Archaeological investigations indicate that much of the coastal area, dominated by sand dunes, was unsuitable for intensive agriculture and instead supported fishing-related activities and temporary habitation. More stable soils in the inland and northwestern portions of Mālaekahana were better suited for cultivation and are associated with evidence of gardening and more permanent use. Historic records indicate that small-scale farming and later commercial agriculture occurred mauka of the shoreline, particularly during the plantation era.

6.5 Lā‘au Lapa‘au

Lā‘au lapa‘au is the practice of traditional Hawaiian medicine. For centuries, native Hawaiians relied upon the environment around them to provide them medicine. It is still actively taught

and practiced today. Medicinal experts or healers have intimate knowledge about plants and other resources to cure ailments illnesses and sicknesses. Traditional medicine is practiced by native peoples and local communities around the world. Similarly, Native Hawaiians, over many generations, have learned how to properly care for, utilize, and prepare plants to maintain the community's health.

It was important to not only have plants and have access to plants but to ensure that these plants were healthy and in good condition. In the list of biological resources, plants with medicinal capacity and components are identified. These resources are cultural resources. They are critical to the ongoing practice of traditional medicine and healing within the Native Hawaiian community. There are still many traditional medicine practitioners in the Hawaiian community and throughout the Hawaiian Islands today. It is a practice that is still taught to the younger generation, and it is a practice that is still honored and utilized in many Hawaiian households throughout the state.

It was important that medicinal plants existed throughout the Hawaiian Islands so that when people traveled throughout different places on in the islands, they would always have access to the medicine they needed. In some cases, certain plant species were extremely rare, and it was particularly important to ensure that these populations were well protected and well managed. While specifically examples of traditional medicine in Mālaekahana were not found, there is a strong tradition of Hawaiian health practices in the Koʻolauloa region. Drawing on the oral history interviews with Cathleen Pi'ilani Oberle-Mattoon and Creighton Ualani Mattoon, Hawaiian health in Koʻolauloa is described as deeply place-based and inseparable from relationships to ʻāina, wai, and community. The Mattoons recall growing up in Pāhō'emiki and Kaluanui at a time when health was sustained through daily interaction with the land and ocean, including fishing, gathering, farming, walking long distances, and sharing food within extended ʻohana networks. Physical well-being was reinforced by constant movement and access to fresh foods such as fish, ʻōʻpae, cultivated crops, and wild plants, while mental and spiritual health were grounded in kuleana to place, respect for kapu, and ʻike passed down from kūpuna (Maly & Maly, 2004).

The interviews also describe how changes in land use, restricted access, plantation agriculture, and later state management disrupted these health systems. The loss of access to valleys, streams, and customary gathering areas is described as contributing to declining health, not only physical but also emotional and spiritual, particularly among younger generations who have become increasingly detached from ancestral practices.

6.6 Kilo

Kilo are observational traditions and people who examine, observe, or forecast are identified as kilo and serve as traditional climate and weather experts. Kilo "references a Hawaiian

observation approach which includes watching or observing [the] environment and resources by listening to the subtleties of place to help guide decisions for management and pono practices” (‘Āuamo Portal 2021). The practice of kilo is seeing a resurgence on Hawai‘i Island and in the Hawaiian Islands.

Kilo hōkū are traditional astronomers, or those who study the stars. A hale kilo or hale kilo hōkū were observatories or star observatories respectfully. Kilo makani were those who traditionally observed the winds. Kilo moana were traditionally oceanographers. Kilo ‘uhane were those who observed and communicated with spirits.

Traditionally the practice of kilo or observation was critical to the management of traditional Hawaiian landscapes. This practice is very closely tied to traditional or customary access as observers would require access to specific vistas, viewsheds or areas in order to observe environmental phenomenon.

As illustrated in the proceeding section, Native Hawaiians created a wide range of terms for the environment and understanding the ecosystems around them. These terms were often quite specific, and many were tied closely to a specific geographic area. This level of specificity illustrated the close kinship Hawaiians shared to their surrounding environment. The ability to observe and understand all elements of their ecosystem was essential to both the successful care of natural resources and the survival of the Hawaiian people.

The ability to effectively and accurately read weather phenomena was essential to the ability of Hawaiian people who farm, fish, navigate, and conduct any number of practices in a sustainable and successful manner. The knowledge Hawaiians acquired about their environment around them, including weather phenomena were the result of multi-generational observations that comprised an extensive body of information passed down through oral traditions. The following Hawaiian names and their descriptions of weather phenomena include words for clouds, rains, and winds that are utilized by kilo to help guide activities and practices:

ao akua – godly cloud, figurative representative of a rainbow.

ao loa – long cloud or high, distant cloud. Status cloud along the horizon.

ao ‘ōnohi – cloud with rainbow, ‘ōnohi, colors contained within it.

ao pua‘a – cumulus clouds of various sizes piled together, like a mother pig with piglets clustered around her. The Kona coast is famous for ao pua‘a, a sign of good weather and no impending storms.

ao pehupehu – continually growing cumulus typical of summer. Drifting with the tradewinds, these clouds pick up moisture and darken at their base, finally releasing their rain on the windward mountain cliffs.

ho‘omalumalu – sheltering cloud.

ho‘oweliweli – threatening cloud.

ānuenue – rainbow, a favorable omen.

ua loa – extended rainstorm.

ua poko – short rain spell.

Numerous place names are identified in **Section 3.2**. Some of these places would have been traditionally used by kilo iʻa, skilled ocean observers who would identify marine resources for gathering. These kilo locations are typically nearshore coastal areas at shoreline elevations where schools of fish can be observed.

6.7 Ceremonial Practices

The ceremonial practices of traditional Hawaiians are extensive. Throughout the course of Hawaii's history, traditional Hawaiians have integrated religious, spiritual, and ceremonial practices in their daily lifestyle. Traditional or customary practices are then not distinct ceremonial practices but rather a part of their way of life. Therefore, it is challenging to define in discrete terms ceremonial practices associated with traditional Hawaiian customs. For the purpose of this section, the ceremonial practices discussed here focus primarily on customs carried out by general populations of Hawaiians, as opposed to activities or rituals carried out by trained and recognized specialists, kahuna.

Ceremonial practices are incorporated throughout numerous, if not all, of the activities identified in this section. For example, there is a great level of ceremonial practice and ritual associated with the care of the dead, burial remains, and funerary objects. Native Hawaiians as with most indigenous peoples integrated ceremony into most of their practices especially those that occurred out in the natural landscape or related to their way of life. There was no specific site or materials required for ceremony *per se*.

Based on the interviews with Tau Hanneman and Kealiʻi Bush, Mālaekahana supports ongoing informal ceremonial and spiritual practices rooted in everyday use of the landscape. Interviewees described pule, quiet reflection, remembrance, and honoring of community members as practices that occur organically rather than through formal ceremonies. Memorials, family gatherings, drumming, and time spent in solitude along the shoreline were identified as meaningful expressions of respect and connection. These practices rely on openness, privacy, and the natural character of the area, reinforcing Mālaekahana's role as a living cultural and spiritual refuge rather than a site of organized ritual alone.

6.8 Haku Mele, Haku Oli, and Hula

This practice is related to the composition of songs and chants. This is a practice that has existed for many centuries in the Hawaiian culture. When the Hawaiian culture primarily relied on an oral tradition to pass on knowledge and information, the ability to create songs and chants was essential to pass information from one generation to the next. As Donaghy (2013) notes, Hawaiians had hundreds of terms associated with this practice.

Songs and chants are largely influenced by the environment around them. As a pedagogical device it was important if not imperative that these songs or chants effectively captured data from the environment around the composer and passed on this information for others to utilize when managing natural resources. In a very real sense, the land and natural resources act as a muse for composers. The category of songs that provide information on or speak to natural resources are called mele ʻāina (songs of the land). As shown in the previous section, there are numerous traditional chants and songs about the project area and its surrounding landscape.

Much like mele and oli, hula serves as a way of both honoring place and telling the story of place. Many hula, especially those based on mele ʻāina, require intimate understanding of the place where the mele was composed, including the natural elements of that ʻāina. Hula hālau will regularly take huakaʻi, or journeys, to visit and honor the place a particular mele speaks of. The ability to visit the place and learn about it is important to the practice of hula.

Based on Kealiʻi Bush’s interview, music at Mālaekahana is practiced informally through drumming, chanting, and quiet musical gathering that draws on the openness and natural acoustics of the landscape. These practices echo mele composed for the place, including Kaliko Trapp’s “Mālaekahana,” which honors the area’s winds, dunes, and enduring relationships between people and ʻāina.

6.9 Ranching and Paniolo Culture

The Hawaiian paniolo were the first cowboys in the United States. In 1793, Captain George Vancouver brought cattle to Kamehameha as a gift shortly after Kamehameha unified the Hawaiian Kingdom under his rule. This was the introduction of ranching to the islands. In order to grow the population so Hawaiians could export cattle and use them throughout the islands, Kamehameha first put a kapu on the cattle. The cattle grew sharply in numbers, and soon large numbers of cattle were roaming wild throughout Hawaii Islands (Harrington, 2019). The introduction of horses had a transformative effect on Hawaiian society. Before the arrival of horses, Hawaiians primarily traveled by foot or by canoe. The use of horses revolutionized transportation and warfare, allowing faster and more efficient movement across the islands.

In order to begin to get the growing population of cattle under control, Kamehameha brought the vaqueros from Mexico, who had the expertise to manage the cattle with horses. Hawaiians could not initially pronounce the term vaqueros, so they would attempt to use the term “españoles” (Spanish speaking males) instead. Unable to pronounce this term properly, the term “paniolo” was created.

Horses would be landed on both Hawaiʻi Island and Maui Island. They were gifts to John Young, one of Kamehameha I’s close advisors. A 1892 publication from the Papers of the Hawaiian Historical Society explains about Spanish influence in Hawaiʻi:

[The Mexican Hispano-Indian] was called by the Hawaiian, specifically, Huanu, Hoke, Hoakina, etc. these names of course meaning Jean, Jose, Joachin, etc. He had with him sometimes full-blooded Indians of Mexican origin, who I say in my boyhood. He was called generically "Paniolo" or "Espangnol," the word that now-a-days means "cow=boy." He brought with him the Mexican saddle in all its rich adornment of stamped bull-hide leather, and stirrups broad-winged. He brought the jingling spur with bells of hand-wrought steel. He brought the hair-rope in strands of alternative black and white, and the hand-whirled wheel for twisting it; also the hand-wrought bit, not so crude as it looked to be, and a necessity in bullock-hunting. All this away back in the [eighteen] thirties, long before the birth of the modern cow-boy. Do not I remember him well, this Spaniard, the red bandanna handkerchief tied over his head under the broad flapping hat with rim up-turned in front? Did not the scrape – poncho we always called it, and the name much have come from South American – commend itself to our common sense as a defence (sic) from rain? We adopted it, and the red silk sash in the bargain, and the leggins not buttoned. Last but not least, the lasso or lariat, braided evenly and lovingly from four strands of well-chosen hide, then well-stretched and oiled, coiled in the same left hand, that with the little and third finger held the finely braided bridle rein; (Mexican too this was, and Mexican the causing of the rein to bear on the horse's neck, instead of to pull on the mouth) (Lyons 1892: 26).

Hawaiians took the lessons and teachings from their Spanish and Mexican instructors and created their own traditions revolved around cattle and horses. Hawaiian paniolo, are considered to be some of the best ranchers and cowboys in the world. Hawaiian paniolo like Ikua Purdy became world-famous for competing in rodeo competitions in the United States, and the skill and craftsmanship of paniolo has been noted throughout history. In places like Makawao, paniolo culture and practices are still actively practiced today.

The paniolo are regarded with great esteem. While they were not intended to remain in the islands, soon marriages between the paniolo and local population resulted in Hawaiian paniolo. The cowboy lifestyle became a way of life. They were considered particularly masculine and historic record and songs reflect this (M. Sproat, per. comm. 2021). The fertile lands and open spaces in the region made it conducive to raising and keeping horses. The availability of horses allowed for easier communication and trade between the North Shore and other parts of the island. Skilled cowboys, known as Paniolo, were essential for managing the expanding cattle industry on the island.

The Paniolo are a distinct cultural group, or folk society, with origins to numerous ethnic groups including Mexicans, Hawaiians, Portuguese, and others (Mills et. al, 2013). While this lifestyle was not as prominent on O'ahu as it was on other islands, it did exist, and primarily on the North Shore. Ranching became an important land use on O'ahu's North Shore during the nineteenth and early twentieth centuries, shaping both the physical landscape and local

cultural practices in Ko'olauloa. In the Mālaekahana area, former agricultural lands and open coastal plains were incorporated into larger ranching operations associated with Kahuku and Lā'ie, leaving behind fences, pasturelands, and access routes that remain visible on the landscape today.

In his interview, Matt Sproat describes growing up in a ranching environment where paniolo culture was an everyday part of life, emphasizing horseback riding, cattle work, and deep familiarity with the land. He recalls that ranching families relied on generational knowledge of weather, water, and terrain, and that paniolo work fostered strong values of responsibility, independence, and respect for 'āina. Paniolo culture in the Mālaekahana area blended Native Hawaiian land knowledge with introduced ranching practices, creating a distinctly local tradition. These experiences highlight ranching as more than economic activity, representing a lived cultural practice that shaped identity, community ties, and relationships to place on the North Shore.

6.10 Surfing

Traditional surfing in Hawaii has a rich and ancient history that dates back centuries. Surfing, known generally as he'e nalu, was not just a sport but an integral part of the Hawaiian culture and way of life. Surfing in Hawaii can be traced back to ancient Polynesian settlers who arrived in the Hawaiian Islands around 2,000 years ago. These early kānaka settlers brought with them the knowledge and skills of wave riding. Surfing quickly became a significant aspect of Hawaiian society.

In his book, *Hawaiian Surfing: Traditional from the Past*, John R.K. Clark (2011, 19) explains that traditional surfing consisted of six different sports:

- He'e nalu – board surfing
- Pākākā nalu – outrigger canoe surfing
- Kaha nalu – body surfing
- Pae po'o – bodyboarding
- He'e one – sand sliding
- He'e pu'e wai – river surfing

Traditional surfing held deep spiritual and cultural significance in Hawaiian society. It was not only a recreational activity but also a way to connect with the ocean and the gods. Hawaiian mythology includes stories of powerful deities who were skilled surfers, further emphasizing the cultural importance of surfing. In the early days of Hawaiian surfing, surfboards were typically made from local materials such as koa wood. These wooden surfboards were heavy and often quite large compared to modern surfboards.

Surfing played a role in the social hierarchy of ancient Hawai'i. Ali'i often had access to the best surf spots, and the sport was used to reinforce their status. Commoners also surfed, but their boards were usually of lesser quality. With the arrival of European explorers and missionaries in the late 18th century, Hawaiian society underwent significant changes. The influence of Western culture led to a decline in traditional Hawaiian practices, including surfing. Surfing was even discouraged and suppressed by missionaries who viewed it as immoral.

The 20th century saw a revival of interest in surfing in Hawaii. In the early 1900s, individuals like Duke Kahanamoku, often regarded as the father of modern surfing, helped reintroduce and popularize the sport. Duke's travels and surf demonstrations in the United States and around the world played a crucial role in spreading surfing beyond Hawai'i. Today, Hawai'i is known as one of the world's premier surfing destinations. It's a global hub for surfers and continues to serve as an important cultural practice.

Traditional Hawaiian surfing techniques and the spirit of he'e nalu are still respected and honored within the modern surfing community. Hawaiians take pride in their surfing heritage and continue to play a prominent role in the sport's development and culture. Tau Hanneman describes Mālaekahana as a formative surfing place for Ko'olauloa families, where learning to read ocean conditions was part of everyday life. He recalls surfing alongside camping, fishing, and lifeguarding as activities that built respect for currents, reefs, and seasonal changes. Surfing at Mālaekahana is characterized as intimate and place-specific rather than commercial, reinforcing awareness, safety, and kuleana to the shoreline.

6.11 Fishing, Spearfishing, and Limu Picking

Across O'ahu, the nearshore reef environment provides a rich biodiversity that has helped to sustain this community for generations. The area is known for fishing and diving, especially for he'e (octopus), which the ethnographic data identified to be associated with the name of the area (**Section 5**). This area is also known historically for limu picking, although limu has become scarcer in recent times, likely from development and environmental degradation.

This ocean expertise was critical to traditional Hawaiian practices. In *Hawaiian Fishing Traditions*, Moses Manu and Others write,

With a knowledge of fishing areas and seasons and an array of implements that included hooks and lines, lures, nets, basket traps, poisonous plants, and spears, a fisher supplied his family or his ali'i with fish and shellfish from streams, fishponds, reefs, and ocean. Sometimes the catch was so huge, fish could be fed to the pigs and dogs, with some left over to dry as food or fuel for fire; some was left to rot. Those fishers that could supply large amounts of fish from ponds or catches at sea were believed to possess mana kupua, or supernatural power, to attract fish at will or make

them multiply. Successful fishing implements, such as hooks or cowry shell lures became famous and were prized, passed on to heirs, and sometimes fought over (Manu 2006, ix).

Based on the interviews, fishing, spearfishing, and limu picking at Mālaekahana are described as long-standing, intergenerational practices that connect families to the shoreline and to one another. Interviewees recalled learning these practices from parents and elders while camping and spending extended time at the beach, emphasizing observation of tides, seasons, and ocean conditions. Spearfishing and shoreline fishing were commonly practiced for food rather than sport, reinforcing values of restraint and respect for resources. Limu picking was described as part of routine shoreline use, tied to knowledge of specific growth areas and appropriate times for harvest. Together, these practices reflect a mauka–makai relationship in which care for the ocean and land supports subsistence, cultural continuity, and community well-being.

6.12 Beach Access

Beach access is a fundamental component of life in Hawaiʻi, where the coastline plays a critical role in cultural, ecological, and recreational traditions. Access to the shoreline supports subsistence practices, recreational activities, and the preservation of traditional Hawaiian customs such as fishing, gathering, and healing ceremonies.

For Native Hawaiians and local residents, the beach is not merely a recreational space but a place of deep cultural significance. Traditional fishing practices, such as throw net fishing and shoreline gathering, rely on uninterrupted access to beaches. Many sites along the North Shore coastline are also historically and spiritually important, serving as locations for religious and healing ceremonies. Maintaining open and accessible beaches ensures that these cultural traditions continue for future generations.

Interviews with Kealiʻi Bush, Tau Hanneman, and Matthew Sproat consistently emphasize the importance of beach access at Mālaekahana and throughout the Koʻolaupia region. Each interviewee describes shoreline access as a fundamental part of daily life, supporting fishing, gathering, recreation, and the maintenance of strong family and community ties to place. Kealiʻi Bush and Tau Hanneman recall long-standing informal access routes used by local families to reach the shoreline, noting that beach access was understood as open, customary, and shared rather than restricted or privatized. Matthew Sproat similarly describes beach access as an expected and uninterrupted part of growing up on the North Shore, closely tied to cultural practice, physical activity, and social interaction. Together, these accounts illustrate that beach access at Mālaekahana was not incidental, but essential to sustaining subsistence practices, cultural continuity, and community well-being. The interviews also highlight concerns that limitations on access disrupt long-standing relationships between people and ʻāina, underscoring the ongoing cultural significance of maintaining shoreline access.

North Shore beaches are a gathering space for families and communities. Whether for picnicking, swimming, or surfing, the beaches foster social interactions that are integral to Hawaiian and local lifestyles. Limited beach access due to increased privatization or overcrowding can hinder these recreational activities, reducing the quality of life for residents.

7.0 Impact Assessment

The overall impacts to cultural resources or practices anticipated from this project are negligible. It is recommended that the project team remain in close communication with the surrounding stakeholders to remain aware of any potential unanticipated issues that may arise and immediately respond to these issues.

7.1 Impacts to Flora

Impacts to flora at Mālaekahana are expected to be minimal and unlikely, as proposed improvements are largely confined to previously disturbed areas. Potential effects may include short-term vegetation disturbance during construction activities. Coastal and inland plant communities remain culturally and ecologically important and should be protected. To ensure impacts remain minimal, all work should follow the recommendations and Best Management Practices outlined in the project's Biological Assessment, including vegetation avoidance, limited clearing, and erosion and runoff controls.

7.2 Impacts to Fauna

Potential impacts to fauna at Mālaekahana are expected to be minimal and unlikely, as project activities are limited in scope and primarily located within previously disturbed areas. Temporary disturbance to terrestrial and marine fauna may occur during construction due to noise, human presence, or short-term changes in access. To minimize any potential effects, all project activities should follow the recommendations and Best Management Practices identified in the Biological Assessment, including measures to avoid sensitive habitats, protect marine resources, and control runoff.

7.3 Impacts to Historic Sites

Potential impacts to historic sites at Mālaekahana are expected to be minimal and unlikely due to the limited scope of the proposed work and its focus on previously disturbed areas. Interviewees nonetheless expressed concerns regarding the potential presence of iwi kūpuna, noting the long history of Hawaiian use of the area and the sensitivity of coastal sandy environments. While no adverse impacts are anticipated, all project activities should adhere to the recommendations and protocols outlined in the LRFI.

7.4 Impacts to Intangible Cultural Resources

Potential impacts to intangible cultural heritage at Mālaekahana are not anticipated. The proposed work is limited in scope and is not expected to affect the meanings, memories,

stories, and spiritual associations attached to the place. Mālaekahana’s cultural identity, sense of continuity, and role in community history are expected to remain intact, with no adverse effects on the intangible heritage values associated with the landscape.

7.5 Impacts to Cultural Practices

Potential impacts to cultural practices at Mālaekahana are expected to be limited; however, interviewees expressed concerns that construction activities could temporarily disrupt ongoing customary and community uses of the park and shoreline. Practices such as fishing, surfing, gathering, reflection, and informal ceremonial activities rely on continued access, openness, and a sense of refuge. Even short-term construction, noise, or restricted areas may discourage some practitioners if not carefully managed.

To minimize potential impacts, beach and park access should be preserved to the greatest extent possible throughout construction, with work areas clearly defined and limited in footprint. Advance public notices and regular updates are strongly advised to keep the community informed of construction schedules, temporary closures, and access routes, allowing families and practitioners to plan accordingly.

Interviewees also emphasized the importance of sensitivity around the memorial honoring Tamayo Perry. Construction crews should be clearly instructed to avoid the memorial area, leave it undisturbed, and allow continued access for family members, lifeguards, and community members. Respectful management of these considerations will help ensure cultural practices can continue without adverse impact.

7.6 Cumulative and Indirect Impacts

There are no anticipated cumulative or indirect cultural impacts to the area.

7.7 Mitigation and Best Management Practices

Due to the negligible impacts to cultural resources, there are no specific mitigation measures recommended or necessary at this time, but standard construction best management practices should be followed. Standard archaeology best practices should be implemented. In the event of the inadvertent discovery of cultural resources, cultural monitors or practices should be consulted as appropriate to ensure the proper treatment of any cultural resources and the allowance of appropriate cultural practices.

8.0 Ka Paʻakai Analysis

It has long been the law of the land that the State of Hawai'i has an "obligation to protect the reasonable exercise of customary and traditionally exercised rights of Hawaiians to the extent feasible" *Public Access Shoreline Hawai'i v. Hawai'i County Planning Commission* ("PASH") 79 Hawaii 425, 450 n. 43, 903 P.2d 1246, 1271 n. 43 (1995). In 2000, in the *Ka Pa'akai* decision, the Court established a framework "to help ensure the enforcement of traditional and customary Native Hawaiian rights while reasonably accommodating competition private development interests." 94 Hawai'i 31, 35, 7 P.3d 1068, 1972 (2000).

Based on the guidelines set forth in *Ka Pa'akai*, the Hawai'i Supreme Court provided government agencies an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development, or other, interests. The Court has stated: "that in order to fulfill its duty to preserve and protect customary and traditional Native Hawaiian rights to the extent feasible, as required by Article XII, Section 7 of the Hawai'i Constitution, an administrative agency must, at minimum, make specific findings of fact and conclusions of law as to the following:

- 1) The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area.
- 2) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
- 3) The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist. *Ka Pa'akai*, 94, Hawaii at 47, 7 P.3d at 1084. Cited in *Matter of Contested Case Hearing Re Conservation District Use Application (CDUA) HA-3568 for the Thirty Meter Telescope at the Mauna Kea Science Reserve, Ka'ohē Mauka, Hāmākua, Hawai'i*, 143 Hawai'i 379, 431 P.3d 752 (2018) ("*Mauna Kea II*").

In order to complete a thorough CIA that complies with statutory and case law, it is necessary to fully consider information available from, and provided by, Native Hawaiian cultural practitioners and cultural descendants from the project area. From thorough research, data was extrapolated that provides a comprehensive look at the cultural resources in this 'āina. Through this research, the factors from *State v Hanapi* are met. These factors are: "to establish that his or her conduct is constitutionally protected as a native Hawaiian right, he or she must show, at minimum, the following three factors. First, he or she must qualify as a "native Hawaiian" within the guidelines set out in PASH . . . [as] "those persons who are 'descendants of native Hawaiians who inhabited the islands prior to 1778,' ... regardless of their blood quantum." Second, once a defendant qualifies as a native Hawaiian, he or she must then establish that his or her claimed right is constitutionally protected as a customary or traditional native Hawaiian practice.... Finally, a defendant claiming his or her conduct is constitutionally protected must also prove that the exercise of the right occurred on

undeveloped or “less than fully developed property.”” 89 Hawai'i 177, 185-86, 970 P.2d. 485, 493-94 (1998).

The *Ka Pa'akai* analysis is largely a legal analysis, as the applicable tests are legal standards. Therefore, a strong analysis was conducted by someone with sufficient legal training. Additionally, at the core of a thoughtful *Ka Pa'akai* analysis is a comprehensive understanding of traditional and customary practices. In breaking down the Court's tests, it is important to the different elements that contribute to each test.

The first test - “The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area” - actually consists of two separate elements. First, the simple identification and existence of valued cultural, historical, or natural resources. These resources are tangible in nature. They may include sacred places, culturally significant plants, or religious or historic sites. This assessment sought to identify the various resources that may exist in the project area or adjacent areas. This was completed in part through this CIA and in part through the accompanying LRFI.

As to this test, this assessment shows there are potentially resources within the project area, including historic sites, biological resources and areas used for cultural practices.

The second element of this first test is access. Access requires two things to occur. One is the existence of a resource. Whether a plant, an animal, a place, or site, the resource must exist in order a practitioner to access it. The second thing is physical access. This includes, but it is not limited to, the ability to physically access a plant, animal, site, or location associated with a particular practice. This can also include the traditional and customary route or path taken to access the resource. This can also include cultural protocols that existed in accessing a resource. These are often temporal, in that access protocols can be at a certain time of day or year. Makahiki would be a good example of a traditional custom that has specific cultural protocols associated with access. In the case of Makahiki, the custom takes place at a certain time of year.

Therefore, the first test under *Ka Pa'akai* should include not only a listing of resources, but the identification of ways in which those resources are accessed and utilized in association with a traditional and customary practice. There are no existing or potential impacts to access resulting from this project.

Therefore, the second test - “The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action” - also looks at two separate elements. The first question is whether the proposed action and its alternatives have an adverse impact on the existence of resources. This would include the

alteration, destruction, modification, or harm of sites, including biological resources, sacred places, burial sites, etc. It also includes a loss of species. Any adverse impact or harm to resources is alone an effect or impairment caused by the proposed action.

Under this element, adverse impacts to historic sites or culturally utilized natural resources would all be identified as adverse impacts. Under this same element, any indirect or cumulative effects would create an adverse impact under *Ka Pa‘akai* if those actions harmed resources. Both the LRFI and CIA looked to identify any such potential adverse impacts and none were identified.

In addition to this, any action that impacts traditional and customary access to resources, even if there is no direct adverse impact to the resource itself, would result in an effect or impairment resulting from the proposed action. Therefore, the limitations on access that could result from the development or use of the project area could create an adverse impact under *Ka Pa‘akai*. As noted above, there are no potential access issues identified, although park users expressed concern that limited access during construction could deter practitioners from carrying out their practices. The suggested conditions should be implemented to manage this issue.

The third part of the *Ka Pa‘akai* framework aims to identify “[t]he feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.” Determining whether or not an action has been suitably “feasible” is a matter for the State. These feasible actions could include continued access to the project as needed to conduct cultural practices. As there are no anticipated impacts, it is unnecessary to identify potentially “feasible” actions.

9.0 Conclusion

The Ko'olauloa region is rich with both pre-contact and post-contact histories. The project is unlikely to have any adverse impact on pre-contact historic properties or Hawaiian cultural practices. This study comprehensively reviewed all historical records for the region. While area practices were identified, it did not identify any current cultural practices or customs that could be adversely affected by the project activity. This conclusion was supported by the oral histories and interviews with practitioners from the area.

The State and its agencies have an affirmative obligation to preserve and protect the reasonable exercise of customarily and traditionally exercised rights of Hawaiians to the extent feasible. This is partially implemented through thorough, appropriately focused cultural impact assessments that research and identify these practices for effective protection. *Ka Pa'akai* calls for a good-faith effort on the part of the state to identify cultural resources, including traditional and customary practices, in the area. The CIA conducted an exhaustive and good-faith effort to identify such resources and practices. While there are certainly such resources and practices within the larger geographic extent of Lā'ie, there are none in the immediate project area or within the area that will be impacted by the proposed project. Therefore, per Act 50 and under the *Ka Pa'akai* analysis, potential effects to cultural resources or practices are negligible due to the absence of ongoing traditional or customary practices in the immediate project area and the project activities are not anticipated to impact local traditions or customs.

10.0 References

- American Board of Commissioners of Foreign Christian Missions (A.B.C.F.M.) 1820-1890. Journals and Letters cited in text from Collection of the Houghton Library, Harvard University (Digitized in the collection of Kumu Pono Associates LLC).
- Alexander, W.D. 1891. A Brief History of Land Titles in the Hawaiian Kingdom. Hawaiian Almanac and Annual for 1891. Honolulu, HI.
- Baldrige, K. 1979. Old Laie. Laie, HI: Brigham Young University – Hawaii Campus, Behavioral and Social Science Division.
- Beckwith, M. 1970. Hawaiian Mythology. Honolulu, HI: University of Hawaii Press.
- Berge, D. 1986. Laie Plantation Sugar Mill (1868-1900): Archaeology and History, Mormon Pacific Historical Society: Volume 7, Article 6. Brigham Young University – Hawaii, Laie. HI.
- Board of Commissioners. 1929. Indices of Awards made by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands. Honolulu, HI.
- Bouchenaki, M. 2003. *The interdependency of the tangible and intangible cultural heritage*. In: 14th ICOMOS General Assembly and International Symposium: 'Place, memory, meaning: preserving intangible values in monuments and sites', 27 – 31 Oct 2003, Victoria Falls, Zimbabwe. [Conference or Workshop Item]
- Boundary Commission Testimonies. 1864-1920. Digitized collection from Microfilms of the Hawai'i State Archives (Kumu Pono Associates LLC).
- Bowser, G. 1880. The Hawaiian Kingdom Statistical and Commercial Directory and Tourists Guide. Honolulu, HI. (Cited in Maly and Maly, 2001.)
- Conde, J.C. and Best, G.M. 1973. Sugar Trains. Felton, California.
- Fornander A. 1878. An Account of the Polynesian Race: Its Origins and Migrations, and the Ancient History of the Hawaiian People to the Times of Kamehameha I. London, UK: Trubner & Company.

- _____. 1916-1919. Fornander Collection of Hawaiian Antiquities and Folklore. (9 vols.). Honolulu, HI: Bishop Museum Press.
- _____. 1916. He Kaao no Pikoikaalala. Collection of Hawaiian Antiquities and Folk-lore. (Vol. IV)
- _____. 1918. He Kaao no Namakaokapao. Collection of Hawaiian Antiquities and Folk-lore (Vol. V)
- _____. 1996. Ancient History of the Hawaiian People. Mutual Publishing, Australia.
- Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte. 2013. Rainfall Atlas of Hawaiʻi, Interactive Map. Geography Department, University of Hawaiʻi-Mānoa. Accessed at <<http://rainfall.geography.hawaii.edu/interactivemap.html>>.
- Handy, E.S.C. 1940. The Hawaiian Planter: His Plants, Methods and Areas of Cultivation. B.P. Bishop Museum Bulletin 161. Bishop Museum Press, Honolulu.
- Handy, E.S.C., Handy, E.G., and Pukui, M.K. 1972. Native Planters in Old Hawaii, Their Life, Lore, and Environment. B.P. Bishop Museum Bulletin 233. B.P. Bishop Museum Press.
- Hawaiian Commerical & Sugar Company (HC&S) 2017. Our History. Hawaiian Commercial & Sugar Company. Available at: <http://hcsugar.com/who-we-are/our-history/>.
- Hill, John L. 1978. Master Plan of Laie. Brigham Young University-Hawaiʻi, Lāʻie, HI.
- ĪĪ, J.P., and Pukui, M.K. (translator). 1959. Fragments of Hawaiian History. Honolulu: Bishop Museum Press.
- Lenzerini, F. 2011. Intangible Cultural Heritage: The Living Culture of Peoples, European Journal of International Law, Volume 22, Issue 1, 101-120
- Kamakau, S.M. 1968. Ka Poʻe Kahiko: The People of Old. Bishop Museum Special Publication 51. Honolulu, HI: Bishop Museum Press.
- _____. 1976. The Works of the People of Old. Bishop Museum Special Publication 61. Honolulu, HI: Bishop Museum Press.

- _____. 1991. Tales and Traditions of the People of Old, Nā Mo'olelo a ka Po'e Kahiko. Honolulu, HI: Bishop Museum Press.
- _____. 1992. Ruling Chiefs of Hawaii. Honolulu, HI: Kamehameha Schools Press.
- Kahanele, K. 1970. Clinton Kanehele Interviews. Laie, HI. Brigham Young University – Hawaii Campus, Clinton Kanehele Collection.
- Krauss, B.H. 1993. Plants in Hawaiian Culture. Honolulu, HI: University of Hawaii Press.
- Māhele 'Āina Documents.1848-1856. Records of the: Native/Foreign Register, Native/Foreign Testimony and Mahele Award Books. Digitized from Microfilms of the Hawai'i State Archives (In collection of Kumu Pono Associates LLC).
- Malo, D. 1951. Hawaiian Antiquities (Mo'olelo Hawai'i). Honolulu, HI: Bishop Museum Press.
- Maly, K. 2001. Mālama Pono i ka 'Āina – An Overview of the Hawaiian Cultural Landscape. Hilo, HI: Kumu Pono Associates.
- Maly, K. and P.H. Rosendahl 1995 Cultural Assessment Study Lā'ie Wastewater Reclamation Facility (Lwrf) Project, Cultural Significance of “Nioi Heiau” and Other Sites Within its Immediately Adjoining Lands Vol. I.
- Manu, M. (K. Maly, translator). 1894-1895. “He Moolelo Kaa Hawaii no Laukaieie...”
Nupepa Ka Oiaio, Jan. 5, 1894 – Sep. 13, 1895.
- _____. 1895-1896 “He Moolelo Kaa Hawaii no ka Puhi o Laumeki, ka Mea i Like me ka Ilio Puapualenalena.” *Nupepa Ka Oiaio*, Nov. 8, 1895 – Feb. 14, 1896.
- McAllister, J.G. 1933. Archaeology of Oahu. B.P. Bishop Museum Bulletin 104. Honolulu: Bishop Museum Press (Reprinted 1971. New York: Kraus Reprint Co.)
- National Cooperative Soil Survey (NCSS) 2017. National Cooperative Soil Survey Characterization Database. Available at: <http://ncsslabsdatamart.sc.egov.usda.gov/>
- Nogelmeier, M. P., 2010: Mai Pa'a I Ka Leo: Historical voice in Hawaiian primary materials, looking forward and listening back. Bishop Museum Press, 286 pp.
- Pukui, M.K. 1983. 'Ōlelo No'eau: Hawaiian Proverbs & Poetical Sayings. Bernice P. Bishop Museum Special Publication No. 17. Honolulu, HI: Bishop Museum Press.

Pukui, M.K. and Elbert, S.H. 1971. Hawaiian Dictionary. Honolulu, HI: University of Hawaii Press.

_____. 1986. Hawaiian Dictionary. Honolulu, HI: University of Hawai'i Press.

Pukui, M.K., Elbert, S.H., and Mookini, E.T. 1974. Place Names of Hawaii (Revised and expanded edition). Honolulu, HI: University of Hawaii Press.

Roth, W. 2019. Ethnoscience. In P. Atkinson, S. Delamont, A. Cernat, J.W. Sakshaug, & R.A. Williams (Eds.), SAGE Research Methods Foundations. <https://www.doi.org/10.4135/9781526421036744802>

Rice W. H. 1923. Hawaiian Legends. Bernice Pauahi Bishop Museum. 2nd edition.

Safsten, R., and Baldrige, K. 1981. LDS Church in Hawaii. Laie, HI: Brigham Young University – Hawaii Campus, Behavioral and Social Sciences Division

Wallace, W. K. 2001. La'ie: Land and People in Transition. World Communities – A Multidisciplinary Reader. Compiled by Lu Hsun. Pearson.

Whitney, H.M. 1895. The Tourist's Guide Through the Hawaiian Islands, Honolulu, HI.

Wilkes, C. 1970. Narrative of the United States Exploring Expedition During the Years 1838-1842, Under the Command of C. Wilkes, U.S.N., vol. 4. Lea and Blanchard, Philadelphia, Pennsylvania.

State of Hawai'i

Ms. Files cited in text from the collections of the:
Hawai'i State Archives
Department of Land and Natural Resources – Land Division
Department of Land and Natural Resources – State Survey Division

Appendix I: Glossary of Hawaiian Terms

The following list of terms were used frequently throughout this report. All definitions were compiled using Pukui and Elbert’s *Hawaiian Dictionary* (1986).

Ahupua‘a	Land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap (ahu) of stones surmounted by an image of a pig (pua‘a), or because a pig or other tribute was laid on the altar as tax to the chief.
‘Āina	Land, earth.
Akua	1. God, goddess, spirit, ghost. 2. Divine, supernatural, godly.
Ala	Path, road, trail.
Ali‘i	1. Chief, chiefess, ruler, monarch. 2. Royal, regal. 3. To act as chief, reign.
‘Aumakua	Family or personal gods, deified ancestors who might assume the shape of sharks, owls, hawks, dogs, plants, etc. A symbiotic relationship existed; mortals did not harm or eat them, and the ‘aumakua warned or reprimanded mortals in dreams, visions, and calls.
‘Aumākua	Plural of ‘aumakua.
‘Auwai	Irrigation ditch, canal.
Hālau	1. Long house, as for canoes or hula instruction; meeting house. 2. Large, numerous; much.
Hale pili	House thatched with pili grass.
Heiau	Pre-Christian place of worship, shrine. Some heiau were elaborately constructed stone platforms, other simple earth terraces.
Ho‘i	1. To leave, go or come back; to cause to come back. 2. To enter, as an institution or last resting place. 3. A parting chant to which hula dancers dance as they leave the audience. 4. Marriage of a chief with the daughter of a brother or sister; to do so (a means of increasing offspring).
Hula	A Polynesian dance form accompanied by chant or song.
‘Ili	Land section, next in importance to ahupua‘a and usually a subdivision of an ahupua‘a.
‘Ili kūpono	A nearly independent ‘ili land division within an ahupua‘a, paying tribute to the ruling chief and not to the chief of the ahupua‘a. Transfer of the ahupua‘a from one chief to another did not include the ‘ili kūpono located within its boundaries.
Kanaka	Human being, man, person, individual, party, mankind, population.
Kānaka	Plural of kanaka.
Kāne	Male, husband, male sweetheart, man; brother-in-law of a woman.

Kanikau	1. Dirge, lamentation, chant of mourning, lament. 2. To chant, wail, mourn.
Kapu	1. Taboo, prohibition. 2. Special privilege or exemption from ordinary taboo. 3. Sacredness, prohibited, forbidden, sacred, holy, consecrated. 4. No trespassing, keep out.
Kuleana	Right, privilege, concern, responsibility, title, business, property, estate, portion, jurisdiction, authority, liability, interest, claim, ownership, tenure, affair, province.
Kupuna	Grandparent, ancestor, relative or close friend of the grandparent's generation, grandaunt, granduncle.
Kūpuna	Plural of kupuna.
Limu	A general name for all kinds of plants living under water, both fresh and salt, also algae growing in any damp place in the air, as on the ground, on rocks, and on other plants; also mosses, liverworts, lichens.
Loʻi	Irrigated terrace, especially for taro, but also for rice and paddy.
Loko iʻa	Traditional Hawaiian fishpond.
Makai	On the seaside, toward the sea, in the direction of the sea.
Mālama	To take care of, tend, attend, care for, preserve, protect, beware, save, maintain.
Mauka	Inland, upland, towards the mountain.
Mele	1. Song, anthem, or chant of any kind. 2. Poem, poetry. 3. To sing, chant.
Mele mākaʻikaʻi	Travel chant.
Mōʻī	King, sovereign, monarch, majesty, ruler, queen.
Moku	1. District, island, islet, section, forest, grove, clump, fragment. 2. To be cut, severed, amputated, broken in two.
Moʻo	Lizard, reptile of any kind, dragon, serpent.
Moʻolelo	Story, tale, myth, history, tradition, literature, legend, journal, log, yard, fable, essay, chronicle, record, article.
Moʻowahine	Female lizard deity.
Nīʻau-piʻo	Offspring of the marriage of a high-born brother and sister, or half-brother and half-sister.
ʻŌlelo noʻeau	Proverb, wise saying, traditional saying.
Oli	Chant that was not danced to, especially with prolonged phrases chanted in one breath, often with a trill at the end of each phrase; to chant thus.
Piʻo	Marriage of full brother and sister of nīʻaupiʻo rank, presumably the highest possible rank. Their offspring had the rank of naha, which is less than piʻo but probably more than nīʻaupiʻo. Later piʻo included marriage with half-sibling.
Pueo	Hawaiian short-eared owl (<i>Asio flammeus sandwichensis</i>), regarded often as a benevolent ʻaumakua.

'Ūniki	Graduation exercises, as for hula, lua fighting, and other ancient arts (probably related to niki, to tie, as the knowledge was bound to the student).
Wahi pana	A sacred and celebrated/legendary place.
Wahine	Woman, lady, wife; sister-in-law, female cousin-in-law of a man.
Wao	1. Realm. 2. A general term for inland region usually forested but not precipitous and often uninhabited.

Appendix E

Early Consultation Comments



Malaekahana State Recreation Area - Kalanai Section Park Improvements La'ie, Ko'olau Loa, O'ahu, Request for Early Consultation for HEPA & NEPA EA

From Clark, Michelle <michelle_clark@fws.gov>
Date Mon 11/24/2025 10:29 AM
To 225054-01 Malaekahana SRA Kalanai <malaekahana@g70.design>
Cc Kim, Jiny <jiny_kim@fws.gov>; PIFWO_Admin, FW1 <pifwo_admin@fws.gov>

You don't often get email from michelle_clark@fws.gov. [Learn why this is important](#)

Aloha,

The Pacific Island Fish and Wildlife Office (PIFWO) has transitioned to the use of the Information for Planning and Consultation (IPaC) online portal, <https://ipac.ecosphere.fws.gov/>, for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species and designated critical habitat in your project area. Using IPaC expedites the process for species list distribution and takes minimal time to complete.

Please note that the accuracy of your species list should be verified after 90 days. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change the species list. Verification can be completed by visiting the IPaC website at regular intervals during project planning and implementation. An updated list may be requested through the IPaC system by completing the same process used to obtain the initial species list. We hope this process provides efficiencies to our partners in obtaining a species list.

Also, please see link to our Avoidance and Minimization Measures, <https://www.fws.gov/media/animal-avoidance-and-minimization-measures-may-2023-0>

Michelle Clark
Island Biologist
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
7370-K Kuamo'o Rd.
Kapa'a, Hawai'i 96746

Cell: 808.457.7276
<https://www.fws.gov/pacificislands/>

JOSH GREEN, M.D.
GOVERNOR
KE KIA ĀINA



KEITH A. REGAN
COMPTROLLER
KA LUNA HO'OMALU HANA LAULĀ

MEOH-LENG SILLIMAN
DEPUTY COMPTROLLER
KA HOPE LUNA HO'OMALU HANA LAULĀ

STATE OF HAWAII | KA MOKU'ĀINA O HAWAII'
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA 'OIHANA LOIHELU A LAWELAWÉ LAULĀ
P O BOX 119 HONOLULU HAWAII 96810-0119

(P)25.171

NOV 18 2025

Andrew H. Choy
Group 70 International, Inc.
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

Dear Andrew H. Choy:

**Subject: HEPA and NEPA Environmental Assessment Request for Early Consultation
Malaekahana State Recreation Area – Kalanai Section Park Improvements
Lāie, Koolau Loa, Oahu
TMK: (1) 5-6-001:004**

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

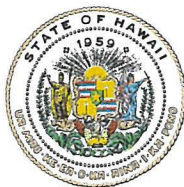
If you have any questions, your staff may call Lawrence Benavente of the Planning Branch at 808-586-0499.

Sincerely,

GORDON S. WOOD
Public Works Administrator

LB:mo

JOSH GREEN, M.D.
GOVERNOR



KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
KA 'OIHANA HO'ONA'AUAO
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF FACILITIES AND OPERATIONS

November 20, 2025

Mr. Andrew H. Choy
G70
111 South King Street, Suite 170
Honolulu, HI 96813

Re: Request for Early Consultation HEPA and NEPA Environmental Assessment
Malaekahana State Recreation Area – Kalanai Section Park Improvements
Laie, Koolau Loa, Oahu, Tax Map Key No.: (1)5-6-001:004

Dear Mr. Choy:

Thank you for your letter dated October 24, 2025. The Hawaii State Department of Education (Department) reviewed the information provided about the proposed improvements to the Malaekahana State Recreation Area – Kalanai Section Park and has determined that it will not affect the operations of the Department's public school campuses.

Should you have any questions, please contact Cori China, School Lands and Facilities Specialist of the Facilities Development Branch, Planning Section, at (808) 784-5080 or via email at cori.china@k12.hi.us.

We appreciate the opportunity to comment.

Sincerely,

A handwritten signature in blue ink, appearing to read "Roy Ikeda".

Roy Ikeda
Acting Public Works Manager
Planning Section

RI:cc

c: Facilities Development Branch

AN EQUAL OPPORTUNITY EMPLOYER



CAB Comments: Early Consultation for HEPA And NEPA Environmental Assessment, Malaekahana State Recreation Area-Kalanai Section Park Improvements Laie, Koolau Loa, Oahu

From DOH.CABPASS <DOH.CABPASS@doh.hawaii.gov>

Date Wed 11/12/2025 10:04 AM

To 225054-01 Malaekahana SRA Kalanai <malaekahana@g70.design>

You don't often get email from doh.cabpass@doh.hawaii.gov. [Learn why this is important](#)

Aloha Andrew H. Choy,

CAB (Clean Air Branch) received the letter Request for Early Consultation for HEPA And NEPA Environmental Assessment, Malaekahana State Recreation Area-Kalanai Section Park Improvements Laie, Koolau Loa, Oahu, TMK: (1) 5-6-001:004. Thank you for the opportunity to review the letter and map of the project location. Please visit the CAB website to download and reference our Standard Comments for Land Use Reviews. The link is provided below.

<https://health.hawaii.gov/cab/clean-air-branch/standard-comments-for-land-use-reviews/>

Mahalo,

Lisa Kitahara

Planning & Administrative Support Staff Supervisor | Clean Air Branch

Hawai'i State Department of Health | Ka 'Oihana Olakino

Office: (808) 586-4200

CONFIDENTIALITY NOTICE: This mail message (and attachments) is for the sole use of the intended recipient(s). It may contain confidential and/or privileged information. It might also be protected from disclosure under the Hawaii Uniform Information Practice Act (UIPA) or other laws and regulations. Review, use, disclosure, or distribution by unintended recipients is prohibited. If you are not the intended recipient, please contact the sender immediately in a separate e-mail and destroy the original message and any copies.

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

November 24, 2025

Group 70 International, Inc.
Attn: Andrew Choy
111 S. King Street, Suite 170
Honolulu, HI 96813

via email: malaekahana@g70.design

**SUBJECT: Early Consultation for HEPA and NEPA Environmental Assessment
Mālaekahana State Park – Kalani Section Improvements – Mālaekahana
State Park, O'ahu TMK: (1) 5-6-001:004**

Dear Mr. Choy,

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request to the DLNR Divisions for their review and comments.

Enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to contact Dayna Vierra (808) 587-0423 or email: dayna.k.vierra@hawaii.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Ian C. Hirokawa".

Ian C. Hirokawa
Acting Land Administrator

Enclosure(s)
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

November 26, 2025

Group 70 International, Inc.
Attn: Andrew Choy
111 S. King Street, Suite 170
Honolulu, HI 96813

via email: malaekahana@g70.design

SUBJECT: **Early Consultation for HEPA and NEPA Environmental Assessment
Mālaekahana State Park – Kalani Section Improvements – Mālaekahana
State Park, O'ahu TMK: (1) 5-6-001:004**

Dear Mr. Choy,

In addition to our previous comments dated November 24, 2025, enclosed are comments from the Commission on Water Resource Management on the subject matter.

Should you have any questions, please feel free to contact Dayna Vierra at (808) 587-0423 or email: dayna.k.vierra@hawaii.gov.

Sincerely,

Ian Hirokawa
Acting Land Administrator

Enclosure(s)



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES | KA 'OIHANA KUMUWAIWAI 'ĀINA
COMMISSION ON WATER RESOURCE MANAGEMENT | KE KAHUWAI PONO


P.O. BOX 621
HONOLULU, HAWAII 96809

CIARA W.K. KAHAHANE
DEPUTY DIRECTOR

Nov 26, 2025

REF: RFD.6554.3

TO: Mr. Ian Hirokawa, Acting Administrator
Land Division

FROM: Ciara W.K. Kahahane, Deputy Director 
Commission on Water Resource Management

SUBJECT: RFD.6554.3 HEPA and NEPA Environmental Assessment Mālaekahana State Park

FILE NO.: RFD.6554.3
TMK NO.: (1) 5-6-001:004

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

Our comments related to water resources are checked off below.

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

<https://hawaiiscape.com/index.php>. Additional information can be found at
<https://dlnr.hawaii.gov/cwrm/planning/conservation/>.

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

If you have any questions, please contact Ryan Imata of the Groundwater Regulation Branch at (808) 587-0225 or Katie Roth of the Planning Branch (808) 587-0216.

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

October 31, 2025

MEMORANDUM

FROM: ~~TO:~~

DLNR Agencies:

- Div. of Aquatic Resources (kendall.i.tucker@hawaii.gov)
- Div. of Boating & Ocean Recreation
- Engineering Division (DLNR.ENGR@hawaii.gov)
- Div. of Forestry & Wildlife (rbyrosa.t.terrago@hawaii.gov)
- Div. of State Parks
- Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
- Office of Conservation & Coastal Lands
- Land Division – O'ahu District (barry.w.cheung@hawaii.gov)
- Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: FROM:

Ian Hirokawa, Acting Land Administrator

SUBJECT:

**Early Consultation for HEPA and NEPA Environmental Assessment
Mālaekahana State Park – Kalani Section Improvements**

LOCATION:

Mālaekahana State Park, O'ahu TMK: (1) 5-6-001:004

APPLICANT:

G70 Consultants on behalf of State of Hawai'i DLNR State Parks

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **November 24, 2025**. If no response is received by this date, we will assume your agency has no comments. Should you have any questions about this request, please contact Dayna Vierra at dayna.k.vierra@hawaii.gov. Thank you.

BRIEF COMMENTS:

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

Signed:

Print Name:

Dina U. Lau, Acting Chief Engineer

Division:

Engineering Division

Date:

Nov 24, 2025

Attachment(s)

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

LD/Ian C. Hirokawa

Ref: Early Consultation for HEPA and NEPA Environmental Assessment

TMK: (1) 5-6-001:004

Location: Mālaekahana State Park, O‘ahu

Applicant: G70 Consultants on behalf of State of Hawai‘i DLNR State Parks

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR, Chapter 1, Subchapter B, part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA’s Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA’s Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (fhat.hawaii.gov) could also be used to research flood hazard information.

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

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4896.

The applicant should include water demands and infrastructure required to meet project needs.

Please note that all State projects requiring water service from their local Department/Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

The applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections.

Signed: 
DINA U. LAU, ACTING CHIEF ENGINEER

Date: Nov 24, 2025



Malaekahana - Kalananai Improvements

From Thirugnanam, Jeyan <jeyan.thirugnanam@hawaii.gov>

Date Thu 11/6/2025 8:17 AM

To 225054-01 Malaekahana SRA Kalanai <malaekahana@g70.design>

You don't often get email from jeyan.thirugnanam@hawaii.gov. [Learn why this is important](#)

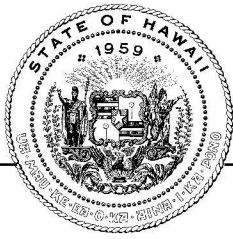
Hi Andrew,

HDOT Highways has no comments.

Best,

Jeyan Thirugnanam

HDOT Highways - Land Use Permit Review



**STATE OF HAWAI‘I
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT**

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
DIRECTOR

235 South Beretania Street, 6th Floor, Honolulu, Hawai‘i 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawai‘i 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <https://planning.hawaii.gov/>

DTS202510271329MO

Coastal Zone
Management
Program

November 20, 2025

Environmental Review
Program

Ms. Tracy Camuso, Principal
Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813

Land Use Commission

Land Use Division

Special Plans Branch

Attn: Mr. Andrew H. Choy

State Transit-Oriented
Development

Dear Ms. Camuso:

Statewide Geographic
Information System

Subject: Pre-Consultation Environmental Assessment for Mālaekahana State
Recreation Area - Kalia Section Park Improvements, Lā‘ie, Ko‘olau
Loa, O‘ahu; Tax Map Key (1) 5-6-001: 004

Statewide
Sustainability Branch

The Office of Planning and Sustainable Development (OPSD) is in receipt of your early consultation request, received October 27, 2025, for the preparation of an Environmental Assessment (EA) for Mālaekahana State Recreation Area - Kalia Section Park Improvements, Lā‘ie, Ko‘olau Loa, O‘ahu.

The proposed park improvements will include: 1) replacement of two existing comfort stations near camping area A and B on the Kalia-side of the park; 2) a new pavilion, stand-alone pot-washing station, rinsing shower; and 3) upgrades to the park’s existing individual wastewater system.

The OPSD has reviewed the EA early consultation request and has the following comments to offer:

1. The Project will be located on the State land and is anticipated to be funded by both State and Federal sources. A joint state and federal EA may be prepared to comply with Hawai‘i Revised Statutes (HRS) Chapter 343 and the National Environmental Protection Act.
2. The Hawai‘i Coastal Zone Management (CZM) Law requires all state and county agencies to enforce the CZM objectives and policies. The subject EA should include an assessment with mitigation measures, if needed, as to how the proposed projects conform to each of the CZM objectives and policies set forth in HRS § 205A-2, as amended.
3. Given that the project area is located within the City and County of Honolulu (CCH) designated Special Management Area (SMA), the Department of

Planning and Permitting, CCH, should be consulted about the requirement for SMA permitting and compliance with the shoreline setbacks.

4. Hawai'i Sea Level Rise Viewer at <https://www.pacioos.hawaii.edu/shoreline/slr-hawaii/> particularly identifies a 3.2-foot sea level rise exposure area across the main Hawaiian Islands which may occur in the mid to latter half of the 21st century. The EA should provide a map of the 3.2-foot sea level rise exposure area, including passive flooding, high wave flooding and shoreline erosion, in relation to the project area, and assess the potential impacts of sea level rise, including inundation of saltwater, on the proposed structures and underground wastewater system.
5. The National Coastal Zone Management Act (CZMA), section 307, requires federal agency activities and development projects, activities requiring a federal permit or license, and activities conducted with federal financial assistance that affect coastal uses and resources must be conducted in a manner consistent with the state's CZM program. Please contact OPSD on whether the policies and procedures for CZMA federal consistency review will be applicable to the proposed Kalia Section Park Improvements.

If you respond to this comment letter, please include DTS202510271329MO in the subject line. For any questions regarding this letter, please contact Shichao Li of our office at (808) 587-2841 or by email at shichao.li@hawaii.gov.

Sincerely,


Mary Alice Evans
Director

**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
JONATHAN KANESHIRO, Vice Chair
BRYAN P. ANDAYA
LANCE WILHELM
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

November 7, 2025

Mr. Andrew H. Choy
G70
111 South King Street, Suite 170
Honolulu, Hawai'i 96813

Dear Mr. Choy:

Subject: Your Letter Dated October 24, 2025 Requesting Comments on the Environmental Assessment Early Consultation for Mālaekahana State Recreation Area – Kalanai Section Park Improvements in Lā'ie off Kamehameha Highway – Tax Map Key: 5-6-001: 004

Thank you for your letter regarding the proposed comfort station, pavilion, and other park improvements project.

The Board of Water Supply does not have a water system serving the existing Mālaekahana State Recreation Area – Kalanai Section area. All potable, nonpotable, and fire protection water services shall be provided by the private water system serving the area.

If you have any questions, please contact Daniel Koge, Project Review Branch of our Water Resources Division at (808) 748-5444.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'Ernest Y. W. Lau'.

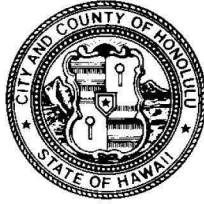
ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

A small, stylized handwritten mark or signature in blue ink, located below the printed name.

**DEPARTMENT OF FACILITY MAINTENANCE
KA 'OIHANA MĀLAMA HALE
CITY AND COUNTY OF HONOLULU**

1000 ULU'ŌHI'A STREET, SUITE 215, KAPOLEI, HAWAII 96707
PHONE: (808) 768-3343 • Fax: (808) 768-3381 • WEBSITE: honolulu.gov

RICK BLANGIARDI
MAYOR
MEIA



GENE C. ALBANO, P.E.
DIRECTOR AND CHIEF ENGINEER
PO'O A ME LUNA NUI 'ENEKINIA

WARREN K. MAMIZUKA
DEPUTY DIRECTOR
HOPE PO'O

IN REPLY REFER TO:
SWQ 25-289

November 14, 2025

Mr. Andrew H. Choy
G70
111 S. King Street, Suite 170
Honolulu, Hawai'i 96813

Subject: Request for Early Consultation
HEPA and NEPA Environmental Assessment
Mālaekahana State Recreation Area
Kalanai Section Park Improvements
Lā'ie, Ko'olau Loa, O'ahu, TMK: (1) 5-6-001:004

Dear Mr. Choy:

Thank you for your letter dated October 24, 2025, regarding the Mālaekahana State Recreation Area-Kalanai Section Park Improvements project. The City and County of Honolulu (CCH), Department of Facility Maintenance, Storm Water Quality Division (SWQ) notes that the subject property, located near Lā'ie and Kahuku towns is State-owned, zoned as General Preservation, and a Special Management Area. There are no CCH stormwater assets located in and around the subject area nor in the vicinity of the proposed project and therefore, the proposed project would have no impact on the City's stormwater infrastructure.

Without the benefit of detailed project plans and specifications, the SWQ can only offer general comments. We assume that the stand-alone pot-washing station will be connected to and therefore, treated by the wastewater system. With regards to the rinsing shower, the SWQ is concerned about the control and treatment of runoff from the shower. If shower runoff is not directed to the wastewater system, we highly recommend the use of infiltration systems that quickly transport runoff away from the area and also provide storage/slow percolation for settling and/or absorption of chemicals, nutrients, and other pollutants associated with shower runoff. This can be achieved by using a combination of sand filters, bioswales, permeable membranes, etc., which would help clean the shower runoff.

Mr. Andrew H. Choy
November 14, 2025
Page 2

We further recommend that clear and adequate signs are posted on and around the shower directing that neither soap nor shampoo be used and educating users about the deleterious impact these have on the beach and coastal waters. We also recommend that special care be taken to utilize appropriate construction stormwater Best Management Practices (BMP) and install appropriate post-construction BMPs to minimize stormwater runoff particularly from the comfort station and pavilion.

If you have any questions, please contact Ms. Saani Fong, Planner VII of the SWQ by email at saani.fong@honorolulu.gov or phone at (808) 768-3387.

Sincerely,



Digitally signed by
Albano, Gene
Date: 2025.11.14
12:31:22-10'00'

Gene C. Albano, P.E.
Director and Chief Engineer

**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 6, 2025

Ms. Tracy Camuso, AICP, Principal
Group 70 International, Inc.
111 South King Street, Suite 170
Honolulu, Hawaii'i 96813-4307

Dear Ms. Camuso:

Subject: Request for Early Consultation for Environmental Assessment
Mālaekahana State Recreation Area - Kalanai Section Park Improvements
Tax Map Key: 5-6-001: 004

In response to your letter dated October 24, 2025, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires the following be complied with:

1. Fire apparatus 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 apparatus access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; 2021 Edition, Section 18.2.3.2.2)

A fire apparatus 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; 2021 Edition, Section 18.2.3.2.1)

2. Fire apparatus access roads shall be in accordance with NFPA 1, 2021 Edition, Section 18.2.3.
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, 2021 Edition, Sections 18.3 and 18.4.

Ms. Tracy Camuso
Page 2
November 6, 2025

4. Civil drawings submitted to your department shall be routed to the HFD for review and approval.

The abovementioned provisions are required by the HFD and may have additional requirements to be met as determined by other agencies.

Should you have questions, please contact Battalion Chief Pao-Chi Hwang of our Fire Prevention Bureau at 808-723-7151 or hfdspb1@honolulu.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Reid Yoshida', with a long horizontal flourish extending to the right.

REID YOSHIDA
Assistant Chief

RY/MD:sk



Pre-DEA Comments - Malaekahana State Recreation Area Improvements - GEN-2025-278

From Keller, Christina K <c.keller@honolulu.gov>

Date Tue 11/4/2025 4:00 PM

To 225054-01 Malaekahana SRA Kalanai <malaekahana@g70.design>

Cc Shoji, Joyce M. <jshoji@honolulu.gov>

You don't often get email from c.keller@honolulu.gov. [Learn why this is important](#)

Aloha Mr. Choy,

This is in response to your letter, October 29, 2025, requesting comments on the scope and content to be addressed in a Draft Environmental Assessment (DEA), as required under the National Environmental Policy Act, Hawaii Revised Statutes (HRS) Chapter 343, Hawaii Administrative Rules Section 11-200.1, and Revised Ordinances of Honolulu (ROH) Chapter 25, the Special Management Area (SMA) Ordinance. The Project site is an approximately 74-acre, State-owned shoreline zoning lot, known as the Malaekahana State Recreation Area, which is located in the P-2 General Preservation District (P-2 District) and the Special Management Area (SMA). We understand that the proposal consists of the replacement of two existing comfort stations near Camping Areas A and B, the construction of a new pavilion, stand-alone pot-washing station, and rinsing shower, and upgrades to the existing individual wastewater system (Project). We recommend the following items be addressed in the DEA:

Because the Project site is located within the SMA, and will require a future SMA Major Permit, the DEA should include an analysis of the Project's consistency with each of the SMA policies presented in ROH Section 25-3.1, as well as the mandatory findings contained in ROH Section 25-4.1. The DEA should also address the corresponding policies in HRS Chapter 205A, Coastal Zone Management. Information on the content required in an SMA Major Permit, and links to information sources, are available on our Coastal Area Permits website at:

<https://www.honolulu.gov/dpp/permitting/coastal-area-permits/zoning-instructions-sma-use-permit/>

In order to adequately support a future SMA Major Permit Application, we anticipate that at a minimum, the following issue areas will require a detailed, site-specific analysis in the DEA:

- **Development Standards, Policies and Objectives**: The DEA should address the proposed Project's consistency with the relevant policies and objectives of the Oahu General Plan and the Koolauloa Sustainable Communities Plan, as well as the development standards in ROH Chapter 21, the Land Use Ordinance, relating to the P-2 District. If any development is proposed in the portion of the site that is within the State Land Use Agricultural District, this should also be disclosed and evaluated for consistency with HRS Chapter 205.
- **Shoreline Setback**: Because the Project site is a shoreline lot, as defined in ROH Chapter 26, the Shoreline Setback Ordinance, the DEA disclose whether any activities would extend into the shoreline setback area. Pursuant to ROH Section 26-1.4, the shoreline setback area extends a minimum of 60 feet mauka of the certified shoreline, plus 70 times the annual historic shoreline erosion rate, where applicable, up to a maximum of 130 feet. The

location of the shoreline and shoreline setback line, in relation to the proposed improvements, should be shown on a site plan submitted for the forthcoming SMA Major Permit to confirm compliance with the ROH Chapter 26.

- **Coastal Hazards:** As a coastal property, the Project site may be subject to coastal hazards such as sea level rise (SLR), wave action, flooding, erosion, tsunamis, and storm surge. Therefore, the DEA should disclose if and how these coastal hazards are projected to impact the Project site, and include an analysis of potential impacts and mitigation measures associated with implementation of the Project related to potential hazards. The location of the 0.5-foot through 3.2-foot SLR Exposure Area (XA), in relation to the proposed improvements, should be shown on a site plan(s) submitted for the forthcoming SMA Major Permit to confirm compliance with the ROH Chapter 25. The location of the 0.5-foot through 3.2-foot SLR-XA projected future coastal erosion lines should also be shown on a site plan.
- **Archaeological, Cultural and Historic Resources:** The DEA should disclose the potential for impacts to archaeological, historic, and cultural resources, and include an analysis of potential impacts and mitigation measures associated with implementation of the Project related to these resources. A Ka Paakai analysis should be provided to evaluate the potential for impacts to Native Hawaiian culture and practices.
- **Water Quality, Flooding, and Hydrology:** The DEA should explain how the improvements will be implemented while also protecting the adjacent waters of the Pacific Ocean. This should include a discussion of the construction and operational components of the Project, relating to surface waters, groundwater, and wastewater. The DEA should also describe any changes to the topography of the site, and if proposed, how they will relate to applicable drainage and flood zone regulations.
-
- **Wetlands and Sensitive Species:** The DEA should disclose the presence or potential presence of any protected wetlands, sensitive habitat, flora species, and fauna species, and provide standard agency-required mitigation measures as well as any applicable site-specific mitigation measures to avoid or minimize potential impacts to each identified species, critical habitat and habitat applicable to the site.
- **Cumulative Impacts Assessment:** The DEA should include an evaluation of how the Project, combined with other past, present, and reasonably foreseeable development in the vicinity of the Project may result in cumulative impacts to land use or SMA resources. Cumulative impacts are generally limited to those issue areas where impacts cannot be avoided or mitigated at the site-specific level. We recommend reviewing the State Office of Planning and Sustainable Development's "*Cumulative Effects/Impacts Assessment Guidance in Special Management Area Permitting*" (April 2022) in determining the scope of the cumulative impacts analysis to be undertaken.

Thank you for the opportunity to comment on this proposal. Please feel free to contact me if you have any questions.

Christi Keller, Planner VI
City and County of Honolulu
DPP – LUPD – LUAB
808.768.8087
c.keller@honolulu.gov

HONOLULU POLICE DEPARTMENT
KA 'OIHANA MĀKA'I O HONOLULU
CITY AND COUNTY OF HONOLULU

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

RICK BLANGIARDI
MAYOR
MEIA



RADE K. VANIC
INTERIM CHIEF
KAHU MĀKA'I KOIKAWA

AARON TAKASAKI-YOUNG
RYAN T. NISHIBUN
INTERIM DEPUTY CHIEFS
NĀ HOPE LUNA NUI MĀKA'I KOIKAWA

OUR REFERENCE EO-SH

November 5, 2025

SENT VIA EMAIL

Ms. Tracy Camuso
malaekahana@g70.design

Dear Ms. Camuso:

This is in response to your letter dated October 24, 2025, requesting for comments on the Department of Land and Natural Resources, State Parks Division's, proposed improvements for the Mālaekahana State Recreation Area in Lā'ie.

Based on the information provided, the Honolulu Police Department recommends providing adequate notice prior to any road closures, as any impact to pedestrian and/or vehicular traffic may result in complaints. This recommendation is made in consideration of the fact that the affected portion of Kamehameha Highway is narrow and serves as the primary means of access within the area.

If there are any questions, please call Major Randall Platt of District 4 (Kāne'ohe, Kailua, Kahuku) at (808) 723-8640.

Sincerely,

A handwritten signature in black ink, appearing to read "Carlene Lau", is written over a circular stamp or seal.

CARLENE LAU
Acting Assistant Chief of Police
Support Services Bureau



Outlook

Thank you for your time at our Koolauloa NB

From Carol Feinga <carolfeinga@gmail.com>**Date** Thu 11/13/2025 8:28 PM**To** 225054-01 Malaekahana SRA Kalanai <malaekahana@g70.design>

You don't often get email from carolfeinga@gmail.com. [Learn why this is important](#)

Aloha!

Please continue to keep me posted on all things Ko'olauloa NB. Feel free to contact me if I can help, givw feedback etc.

Mahalo,

Carol Feinga
Ko'olauloa Neighborhood Board Member
808-722-0982 cell



KO'OLAULOA NEIGHBORHOOD BOARD NO.28

NEIGHBORHOOD COMMISSION OFFICE • 925 DILLINGHAM BOULEVARD, SUITE 160 • HONOLULU, HAWAII 96817
PHONE: (808) 768-3710 • FAX: (808) 768-3711 • E-MAIL: nco@honolulu.gov • WEBSITE: www.honolulu.gov/nco

REGULAR MEETING WRITTEN SUMMARY FOR VIDEO RECORD THURSDAY, NOVEMBER 13, 2025 at 6:30 P.M. HAU'ULA COMMUNITY CENTER 54-10 KUKUNA ROAD, HAU'ULA, HI 96717 AND VIA WEBEX TELECONFERENCING

Video recording of this meeting can be found at: <https://www.youtube.com/watch?v=cd6rUDDEeGI>

Reports and other meeting materials can be found at: https://drive.google.com/drive/folders/135-VFpB_IUlcPhYjRfW60vbUJhRvSyrB

- I. **CALL TO ORDER – [0:00:06]:** Chair Michael Epp called the Ko'olauloa Neighborhood Board No. 28 meeting to order at 6:30 p.m.

Quorum WAS established, with 9 members present. This eleven-member Board requires 6 members to establish quorum and to take official Board action; therefore, no votes were taken at this meeting.

Members present: Michael Epp; Carol Feinga, Johnny Feinga, Dotty Kelly-Paddock, Atalina Pasi, Benjamin Shafer, Kela Miller, 'Uilafotu Vendiola, Margaret Weiss, and Allegra Lund (6:33 p.m.).

Members absent: Sunny Unga.

Guests: Cat Taschner (Mayor Rick Blangiardi); Chelsea Gonzales (Councilmember Matt Weyer); Elizabeth Tatofi-Tavake (State Senator Brenton Awa); Erica Yamauchi (Governor) and Mel Chung (Hawaii Department of Transportation); Captain A. Mau (Honolulu Fire Department); Harold Brackeen III (Department of Human Services) and Sonia Davalos (Corazon Hawaii); Andrew Choy and Tracy Kamosu (G70); Carl Scholin and Alan Carpenter (Department of State Parks); Luca Cuniberti (Hawaii Youth Transportation Council); Evelyn Lane (Kahuku Emergency Leadership Program); Cynthia Channels (Hale Ofa); Kau Weiss, Drake Kau, Tusi Avegalio, Cynthia Channels, Renee, John Olszowka, Ella Sirokey, Jacob, Evelyn Lane, KC. Connors, Carol, K. heath, Tracy Camuso, Tessie, Alapati Tofa, and Andrea Anixt (Resident); and Anson Wu (Neighborhood Commission Office).

Note: Name was not included if not legible. Total Participants: 48.

II. **CITY/STATE MONTHLY REPORTS – [0:00:55]**

Honolulu Fire Department (HFD) – [0:00:57]: No representative present, was revisited at a later time.

Honolulu Police Department (HPD) – [0:01:10]: No representative was present.

United States Army – [0:01:21]: No representative was present.

III. **GOVERNMENT REPORTS – [0:01:29]**

[0:01:38] – Chair Epp suggested to the board to have questions, comments, and concerns be presented at the end of reports. No objections were made.

Mayor Rick Blangiardi's Representative – [0:02:20]: Deputy Director Cat Taschner provided several highlights and follow-ups from the prior meeting. She announced that Skyline Segment 2 is opening with Pearl Harbor and Honolulu Airport stations, that an Early Education Center will be temporarily relocated during municipal parking structure repairs, and that new sewer rates will be effective Thursday, January 1, 2026. She also shared that the Royal Hawaiian Band will offer a free concert on Friday, November 28 at Neal S. Blaisdell Concert Hall, with City Lights events on Saturday, November 29, 2025, and that a new electronic press release subscription system is now available. She also provided follow-ups to questions asked from the prior meeting which includes: concerns regarding the Mayor's office support for Bill 56; parking meter accessibility, and shoreline setbacks and permits.

- Newsletter: https://drive.google.com/file/d/1xn1PP_BYfsJFuBmu4zfe8s3nsTIWtWL/view?usp=drive_link

Lund arrived to the meeting at (6:33 p.m.); 10 members present.

Councilmember Matt Weyer – [0:06:29]: Chelsea Gonzales from Councilmember Matt Weyer's office shared several updates. She highlighted food access resources including State relief programs, Aloha United Way hotline, and the Hawai'i Foodbank finder. She announced that a Talk Story with Councilmember Weyer will be held on Wednesday, December 10, 2025 from 10:00 a.m. to 12:00 p.m. at the Courtyard by Marriott in Lā'ie, where the team will be present to take concerns. She also reported that the office is investigating a concern regarding a car display near Crouching Lion and a request for investigation has been submitted to the Department of Planning and Permitting (DPP).

US House of Representatives – Congresswoman Jill Tokuda – [0:10:32]: No representative present.

Office of the Governor – [0:10:59]: Director of Communications & Engagement, Office of Wellness and Resilience Erica Yamauchi provided several follow-ups from the prior meeting. She reported that Department of Land and Natural Resources (DLNR) is in preliminary discussions with Office of Hawaiian Affairs (OHA) regarding the potential transfer of Kahana Valley lands to OHA and the office is coordinating an invitation for Dr. Anthony to meet with the Governor. Regarding Act 310, which provided one-time \$50 million relief, she noted that the application window is now closed and suggested the state representatives provide more training for the community. On tourism and creative industries, she referenced updates available via the Hawai'i Tourism Authority (HTA) and the Department of Business, Economic Development & Tourism (DBEDT), including information on film production, tax credits. She also provided visitor spending and tax impact statistics for Fiscal Year 2024 and year-to-date Fiscal Year 2025. She noted that Creative Lab Hawai'i does provide mentoring and programs for songwriter to accelerate new business and monetize opportunities for creative entrepreneurs. Mel Chung from Hawai'i Department of Transportation (HDOT) reported on several projects. In the Kaipapa'u and Ka'a'awa area, construction is substantially complete, with permanent pavement markings, fencing, and landscaping still remaining. In Hau'ula, new funding has been received, and crews will add boulders and remove curb beds. For the Waipilopilo Bridge, the design includes a 6-foot 8-inch protected pedestrian walkway, with advertising planned for Spring 2027 and construction beginning in Summer 2027. For the Kaluanui Bridge, the project is rehabilitation-only with no protected pedestrian walkway planned, and advertising is scheduled for December 2026.

- Newsletter: https://drive.google.com/file/d/1YqvDwc6LHtwfiJuM--qDRcPcmSdzHb8I/view?usp=drive_link

State Senate – Office of Senator Brenton Awa – [0:17:32]: Elizabeth Tatofi-Tavake from Senator Brenton Awa office provided several updates. She reported that the office is working with DLNR, OHA, and Dr. Anthony regarding Kahana Valley. On siren updates, she stated that the Punaluu siren (OA-422) repair is underway, the Sacred Falls siren (OA-420) is being troubleshooted, and the Polynesian Cultural Center siren (OA-426A) replacement is under construction by the Department of Accounting and General Services (DAGS). She also reported that the Ko'olauloa Resiliency Hub Grant in Aid (GIA) inter-agency mix-up has been resolved and the office is working to expedite the release of funds.

State House of Representatives – Office of Representative Sean Quinlan – [0:20:59]: No representative was present.

Questions, comments, and concerns – [0:21:13]:

1. Kaluanui and Waipilopilo Bridge Concerns: Member Kelly-Paddock asked about protected walkways and community consultation for the bridges, specifically the Kaluanui and Waipilopilo Bridge, and questions if there will be a community meeting. HDOT representative Mel clarified that the Waipilopilo Bridge design includes a 6-foot 8-inch protected walkway, but that the Kaluanui rehabilitation project has no protected walkway currently planned, and she will verify design updates and encourage community engagement. Member Kella raised concerns about construction duration and emphasized the need for protected pedestrian routes for keiki and kūpuna. HDOT stated they will report back on duration expectations, and the Chair emphasized the importance of continuous updates. Member Shafer suggested for HDOT to communicate with the community. He also suggested to have a public survey after project completion to capture feedback on processes and outcomes.
2. Siren Restoration Urgency: Member Kelly-Paddock emphasized the urgency of restoring sirens and requested standing updates and agency presence at meetings. Tatofi-Tavake responded that she will seek attendance from Hawai'i Emergency Agency (HIEMA) and Department of Accounting and General Services (DAGS).

3. Crouching Lion Dealership Clarification: Member Weiss clarified that the Crouching Lion site is not a dealership but a private collection. Chelsea noted that an investigation request has been filed, and Luca offered contact information for the owner. Resident Luka clarified that the cars is owned by his school head and will contact Chelsea to provide more information.
4. Wind Turbine Blade Throw Safety – [0:29:58]: Resident Connors asked about the risk and buffer distance for Kahuku wind turbines given a recent blade throw incident in Massachusetts. Erica from the Governor's Office will follow up with the information at the next meeting.
5. Pedestrian Lighting & Walk Wise Materials: Resident Connors asked about lighting at key crossings on Kamehameha Highway, specifically near Kahuku Hospital and the bus stop, and about the availability of reflectors and lights from the WalkWise program. HDOT representative Mel stated that she will check her office regarding WalkWise and will look into the lighting.
6. Tourism Impacts vs. Revenue: Resident Heath raised concerns about environmental impacts of tourism and asked about alternative funding approaches that are aligned with youth climate litigation. The Governor's Office representative stated that she will take the concern back for inter-agency follow-up.
7. Blessing for New Bridge; Rumble Strips; Calming Near 7-Eleven: Resident Heath asked about a blessing for the new bridge, resurfacing of the rumble strips toward Lā'ie, and traffic calming measures on Kamehameha Highway from the 7-Eleven to Kukuna Road. HDOT representative Mel stated that she will check on the blessing, resurfacing schedule, and potential speed hump or mitigation measures and report back.
8. Gondola Concern: Resident Jacob asked about policies to prevent gondola-type proposals on rural agricultural or conservation lands. Chelsea stated that she will take the concern back to the policy team, noted that a petition to Department of Planning and Permitting (DPP) against the current project actions is underway, and offered her email for direct follow-up.
9. Speed Humps: Resident Jacob raised concerns about creating more speed humps
10. Kahuku Crosswalks to Hospital: Resident Lane requested crosswalks at the bus stop leading to the hospital and mentioned a follow-up at the Kahuku Community Association meeting. Chelsea stated that she will follow up with Department of Permitting and Planning (DPP) and Department of Transportation Services (DTS) and coordinate with staff member Kelly.

Honolulu Fire Department (HFD) – [0:45:41]: Captain A. Mau provided incident statistics for October 2025 and November 2025 safety tip.

- October 2025 Statistics: The statistics included 1 structure fire, 0 wildland or brush fires, 1 nuisance fire, 0 cooking fires, 1 activated alarm, 50 medical emergencies, 0 motor vehicle collisions with pedestrian, 5 motor vehicle collisions, one mountain rescue, 3 ocean rescues, and 1 hazardous materials incident.
- November 2025 Safety Tips: The safety tip focused on cooking safety for the holidays and recommended staying alert, remaining in the kitchen while cooking, using timers, keeping combustibles away from stovetops, and keeping children and pets at least three feet away from cooking areas.
- Report: https://drive.google.com/file/d/1ynoSEkftg91P6DobzqkCZ3ax4gRkkUzX/view?usp=drive_link

IV. PRESENTATIONS – [0:48:10]

Update from the Hawai'i Youth Transportation Council (HYTC): 2026 HYTC Legislative Package/Priorities – [0:48:23]: Luca Cuniberti, HYTC Oahu North Shore Representative, provided a presentation highlighting their proposed 2026 HYTC Legislative Package/Priorities form HDOT and Earth Justice. Priorities include establishing a two-year program to provide fare-free county bus services for ages 0–18; creation a Sustainable Aviation Fuel (SAF) Tax Credit to cut greenhouse gas emissions to the aviation sector; clean fuel standards; incentivizes equitable adoption of affordable zero-emission vehicles (ZEVs) by establishing a market-based rebate fund; and increasing funding for existing Electric Vehicle charging system rebate program.

- Presentation:
https://drive.google.com/file/d/1jfHtVdUmnHNa3LGBVHTD4zHq02KGirqi/view?usp=drive_link

Questions, comments, and concerns – [0:52:40]:

1. Airline adoption of SAF: Member Shafer asked why there are no priorities for more energy efficient fuel for airlines. Cuniberti responded that incentives are needed, Par Hawai'i is opening new renewables refinery in early January 2026.
2. Bill status and flexibility: Member Vendiola asked whether the package is final. Cuniberti stated it is in draft form and changes are welcome.

3. Free youth transit and evacuation: Resident Lane expressed support for free youth transit and asked that evacuation access for seniors and residents be integrated. Cuniberti stated he will look into this.
4. Bike and pedestrian network in Ko'olauloa: Member Lund asked how to expand local bike and pedestrian projects. Cuniberti encouraged submitting recommendations and stated he will forward them.
5. Road durability and materials: Member Shafer questions why there is no legislation to improve the road quality. Cuniberti stated he will bring the concern to back HDOT advisors.
6. Youth Council Application: Cuniberti announced that Youth Council is seeking applicants and are open for ages 11 to 24.

Request by Kahuku Emergency Leadership Team: Support for a Right of Entry to City & County Property near Kahuku Senior Hau'oli Hale and Outreach to Unsheltered Residents – [0:58:47]: Resident Lane explained the purpose of the request is to conduct a spring community cleanup to mitigate flood and fire hazards, to improve the strip of land behind the seniors' facility that is adjacent to the golf course and James Campbell Wildlife Sanctuary, and conduct outreach to residents living in the area to reduce tension and support services. Lane also asked for the boards support to have rite of entry from the City and County to beautify the area and to serve the houseless.

Questions, comments, and concerns – [1:00:36]:

1. Beautification and Site Clarification: Member Lund questioned the plans to beautifying the area and asked if the site is at the Latter-Day Saints Church. Lane clarified that the area is City property and not at the Latter-Day Saints Church, and the intent is to beautify the area, to reduce overnight parking, and to build community involvement.

[1:03:27]: Shafer MOVED and Miller SECONDED to support the right of entry to City & County property near Kahuku Senior Hau'oli hale and outreach to unsheltered residents. Hearing no objections, **the motion WAS ADOPTED; 10-0-0** (AYE: Epp, Carol Feinga, Johnny Feinga, Kelly-Paddock, Lund, Pasi, Shafer, Miller, Vendiola, and Weiss; NAY: None; ABSTAIN: None) – [1:03:35]

Questions, comments, and concerns (Continued) – [1:03:58]:

1. Outreach providers and coordination: Resident Connors asked if Homeless and Housing Resource Center (HHRC) is the designated homeless outreach provider for Ko'olauloa and asked if the HHRC is still providing help. Member Pasi stated that HHRC is no longer assigned for Ko'olauloa and that Institute for Human Services (IHS) has periodic presence. Lane plans to work with Resident Channels to do outreach. Channels described current efforts of helping the homeless in the area.
2. Local partnership and costs: Member Pasi asked Yamauchi about partnering IHS with Channels. Harold Brackeen III from the Department of Human Services (DHS) responded that he will facilitate coordination with IHS and explore support avenues.

Presentation on Hau'ula Family Assessment Center, by Corazon Hawai'i, Inc. – [1:11:25]: Executive Director Sonia Davalos, Corazon Hawai'i, and Homeless Programs Administrator Harold Brackeen III, DHS, presented information on the Hau'ula Family Assessment Center. Barckeen III and Davalos explained that the City-owned property is leased to the State through the DHS and that services are competitively procured through a Request for Proposal (RFP) issued in July 2024 under a six-year contract, with Year 1 focused on rehab and renovation on the property, and Year 2 Corazon Hawai'i services began. The program operates similarly to a homeless emergency shelter but with its own rapid rehousing resources, and it incorporates the Critical Time Intervention model through a subcontract with Housing Innovations to support families for up to 12 months in permanent housing. Performance is tracked through the Homeless Management Information System (HMIS) with metrics including length of stay, exits to permanent housing, income, and benefits. Geographic priority is given to Ko'olauloa, with services extended to Kāne'ohe and Hale'iwa as needed. Partnerships include the Department of Education, Kids Hurt Too, Hawai'i Literacy, Housing Innovations, and Hui O Hau'ula with coordination with schools that has resulted in positive attendance impacts.

Questions, comments, and concerns – [1:17:14]:

1. Number of Families Corazon Serving: Member Miller asked for the current number of families Corazon is helping and asked if the families are from Ko'olauloa. Davalos noted they have served seven families and clarified that the families are from Ko'olauloa.
2. Wraparound Services and communication: Resident Channels expressed concern about promised wraparound services and communication gaps with families in Punalu'u. Davalos explained that the Center serves families with a capacity of 5 families and they cannot force clinical participation.

3. Interim Support While at Capacity: Member Lund asked whether families can receive support despite the Family Assessment Center is at capacity. Davalos noted another emergency shelter in town that have vacancies and that the Hau'ula office can assist with setting up SNAP benefits. Brackeen III noted the multitude of services available for residents and will provide a list of resources and contact information. Chair Epp recommended forming a localized working group for better coordination among Cynthia, Evelyn, IHS, Corazon, and DHS, and Member Pasi offered to help convene the group.
4. Point-In-Time (PIT) Count accuracy and process: Resident Connors stated that prior homeless counts underrepresented Ko'olauloa and asked for a thorough January 2026 Point-in-Time count. Chair Epp inquired about the person in charge of contracting for the survey. Brackeen III stated that there is no contract; it is a requirement of the Department of Housing and Urban Development, and Partners in Care is responsible for the survey count.

Presentation on Draft Environmental Assessment for the Mālaekahana State Recreation Area — Kalanai Section Park Improvements – [1:36:33]: Andrew Choy, G70, Senior Planner/Project Manager, provided a presentation on a proposed park improvement on the Mālaekahana State Recreation Area Kalanai Section. The improvements include: replacement of two existing comfort stations at campgrounds A and B; upgrades to existing individual waste-water systems; open-air pavilion; pot washing station; rinsing shower; addition of 3 to 4 campervan sites; reconfiguration of Camp Area A into furnished campsites including 2 updated ADA accessible sites; and addition of a large group campground area. Currently the project is at its early consultation period, a draft Environmental Assessment (EA) is planned to be published in the 1st or 2nd quarter of 2026, and publish the final EA in 3rd quarter of 2026.

- Presentation:
https://drive.google.com/file/d/11QeDrGSio2hI96UpKuIWMgOGiscnJrP1/view?usp=drive_link

Questions, comments, and concerns – [1:44:27]:

1. Project Support: Member Shafer voiced his support for the project.
2. Adding Cabins: Member Weiss asked whether cabins would be added. Carl Sholin from State Parks responded that no cabins are planned.
3. Additional Projects: Member Carol Feinga asked if they are opened to have any changes that would go beyond the renovation. Sholin responded that the project focuses on the existing use. He also noted of reconfiguring their permitting system and potentially include a camper van site.
4. Community notification and feedback: Member Miller asked whether the community and associations had been notified in Ko'olauloa and how to provide feedback. Sholin noted that this is their first meeting. Choy also noted that notices were sent to the Lā'ie Community Association.
5. Camper vans, locals versus tourists, and taxation: Resident Connor and Heath asked whether camper van sites would primarily serve locals or tourists and whether Transient Accommodation Tax applies to camping. Alan Carpenter clarified there will be no Transient Accommodation Tax charged on camping and that they are considering reservation systems that prioritize local access.
6. Street camping concerns: Resident Evelyn Lane described rental camper vans parking along neighborhood streets near surf access, she is opposed to the idea of having another tourist industry in the community, and questions if there's any regulations. Carpenter responded that creating a legal, regulated camper van sites within parks is intended to reduce illegal street camping and to enable better enforcement of rules and standards.

Motion to Send KNB Representative(s) to the Tuesday, November 25, 2025 Joint Neighborhood Boards Meeting on Hurricane Preparedness and Approve "Call to Action" Resolution – [1:55:41]: Chair Epp provided a brief explanation of the Tuesday, November 24, 2025 Joint meeting.

[1:56:55] – Epp MOVED and Shafer SECONDED to appoint Kelly-Paddock, Shafer, Miller, Lund, and Epp to represent Ko'olauloa and to attend the Pearl City Neighborhood Board No. 21 special hurricane preparedness meeting. Hearing no further discussion, and objections. **the motion WAS ADOPTED; 10-0-0** (AYE: Epp, Carol Feinga, Johnny Feinga, Kelly-Paddock, Lund, Pasi, Shafer, Miller, Vendiola, and Weiss; NAY: None; ABSTAIN: None) – [1:59:55]

Honolulu Charter Commission – Motion to appoint KNB representative(s) as primary liaison to once-in-a-decade review; Review and approve draft KNB Charter Revision Priorities and any accompanying resolution(s) – [2:00:27]: Chair Epp read the drafted priorities for Charter revision, which included: increase authority of neighborhood boards; preserve the island for residents and locals, including definitions, housing, and tax policy; protect environment and

drinking water; ensure equitable services and infrastructure for rural and low-income communities, with a focus on wastewater equity; increase transparency, including bill sponsorship disclosures; and strengthen emergency preparedness and resilience, including resourcing for the Office of Land Assessment (OLA) plan.

- Draft Revisions: https://drive.google.com/file/d/12S4P0x7ejDI64upgG2PW_SDsYdwRJZ-R/view?usp=drive_link

[2:04:59] – Shafer MOVED and Lund SECONDED to adopt the priorities for the Charter revision. Hearing no further discussion, **the motion WAS ADOPTED; 10-0-0** (AYE: Epp, Carol Feinga, Johnny Feinga, Kelly-Paddock, Lund, Pasi, Shafer, Miller, Vendiola, and Weiss; NAY: None; ABSTAIN: None) – [2:06:17].

[2:08:56] – Epp MOVED and Shafer SECONDED to have board members Epp, Kelly-Paddock, Shafer, Weiss, Miller and Lund to form a committee to work on the priorities for the charter revision. Hearing no objections, **the motion WAS ADOPTED; 10-0-0** (AYE: Epp, Carol Feinga, Johnny Feinga, Kelly-Paddock, Lund, Pasi, Shafer, Miller, Vendiola, and Weiss; NAY: None; ABSTAIN: None) – [2:09:02]

Dog Friendly Park Initiative, Department of Parks and Recreation – [2:09: Seeking input from KNB on legal Dog-Friendly parks in Ko'olauloa – [2:09:11]: Postponed to the next agenda.

Required Three Absence Notice from Neighborhood Commission (NB Section 2-14-106) – [2:09:41]: Chair Epp noted the statutory requirement for notice and emphasized the importance of maintaining quorum. Members Kela Miller and Carol Feinga addressed their recent absences, both citing family circumstances and expressing their desire to continue serving. No action was made.

Questions, comments, and concerns – [2:12:20]:

1. Three Absence Notice Explanation: Member Vendiola questioned the process for the three absences. The Neighborhood Assistant provided an answer off the mic.

V. COMMITTEE REPORTS – [2:13:29]: None

VI. PUBLIC INPUT / COMMUNITY ANNOUNCEMENTS – [2:13:35]:

Charter Commission Session – [2:13:41]: Member Shafer reported attending a Charter Commission session at Sunset Beach and submitted recommendation.

Food Security Committee – [2:14:12]: Member Lund Chair of the Food Security Committee stated that the committee is exploring the use of abandoned lots for community gardens and food production and is taking any suggestions from the community.

Country Bazaar Event – [2:16:23]: Resident Anixt announced the Ka'a'awa School Country Bazaar on Saturday, November 15, 2025 from 9:00 a.m. to 3:00 p.m. at the school.

Talk Story – [2:16:47]: Member Miller announced a free Cultural and Arts Talk Story sessions at the Marriott from 6:00 p.m. to 8:00 p.m.

Hau'ula Food Pantry, Meetings, and Classes – [2:18:17]: Member Dotty-Paddock announced that the Hau'ula Community Center included that the Food Pantry has expanded hours on Wednesdays from 9:00 a.m. to 3:00 p.m. and Fridays from 9:00 a.m. to 12:00 p.m.; a Cesspool Focus Group with the Department of Health Wastewater Branch on Friday, November 21, 2025 from 2:00 p.m. to 3:00 p.m.; and a free Rita Dance Academy youth class on Mondays, Tuesdays, and Fridays from 5:00 p.m. to 6:30 p.m.

Lāhui Foundation Free Bed Giveaway and Toy Distribution – [2:20:51]: Member Pasi announced that the Lāhui Foundation in partnership with Senator Kurt Fevella are doing a Free Bed Giveaway on Saturday, November 22, 2025 at 10:00 a.m. at the Kahuku Village Association (KVA) until supplies last. Pasi also announced that the Lāhui Foundation Toy Distribution on Saturday, December 20, 2025.

Pāina – [2:21:22]: Member Pasi announced a Ko'olauloa Mele Kalikimaka Pāina for houseless and low-income individuals on Tuesday, December 23, 2025.

Toys for Tots Toy Drive – [2:21:37]: Chair Epp announced the Neighborhood Commission Office and Toys for Tots Toy Drive.

Meeting Recess – [2:21:57]: Chair Epp announced that the Board will recess in December 2025 and that the next meeting will be held on Thursday, January 8, 2026 at 6:30 p.m. at the Hau'ula Community Center, in-person and via Webex.

Giving Machine – [2:22:06]: Member Carol Feinga announced a Giving Machine at the Polynesian Cultural Center will launch on Monday, November 24, 2025.

VII. APPROVAL OF THE REGULAR MINUTES – [2:22:34]: Approval of Thursday, October 9, 2025 drafted meeting minutes:

[2:22:37] – Dotty-Paddock MOVED and Shafer SECONDED to approve the Thursday, October 9, 2025 meeting minutes as written. Hearing no objections, **the motion WAS ADOPTED; 10-0-0** (AYE: Epp, Carol Feinga, Johnny Feinga, Kelly-Paddock, Lund, Pasi, Shafer, Miller, Vendiola, and Weiss; NAY: None; ABSTAIN: None) – [2:22:39].

VIII. ADJOURNMENT – [2:22:42]: The meeting was adjourned at approximately 8:52 p.m.

Submitted by: Anson Wu, Neighborhood Assistant, NCO

Reviewed by: Dylan Whitsell, Deputy, NCO

Finalized by:

