

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

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

RICK BLANGIARDI
MAYOR
MEIA



DAWN TAKEUCHI APUNA
DIRECTOR
PO'O

JIRO A. SUMADA
DEPUTY DIRECTOR
HOPE PO'O

July 28, 2023

2023/ED-6(CK)

Ms. Mary Alice Evans, Director
State of Hawaii
Office of Planning and Sustainable Development
Environmental Review Program
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Ms. Evans:

SUBJECT: Chapter 25, Revised Ordinances of Honolulu
Draft Environmental Assessment (DEA)
Project: Zucco Single-Family Dwellings Project
Applicant: Sea Turtle Estates, LLC
Agent: WHALE Environmental Consulting (Mark Howland)
Location: 56-157 Kamehameha Highway – Malaekahana
Tax Map Key: 5-6-001:089

With this letter, the Department of Planning and Permitting hereby transmits the DEA and the Anticipated Finding of No Significant Impact for the Zucco Single-Family Dwellings Project, located at 56-157 Kamehameha Highway in Malaekahana, Oahu, for publication in the August 8, 2023, edition of *The Environmental Notice*.

We have uploaded an electronic copy of this letter, the publication form, and the DEA to your online submittal site.

Should you have any questions, please contact Christi Keller, of our Land Use Approvals Branch, at (808) 768-8087 or via email at c.keller@honolulu.gov.

Very truly yours,


for Dawn Takeuchi Apuna
Director

**NON-CHAPTER 343 DOCUMENT
PUBLICATION FORM
OFFICE OF ENVIRONMENTAL QUALITY CONTROL**

Project Name: Zucco Single-Family Dwellings Project

Applicable Law: Chapter 25, Revised Ordinance of Honolulu (ROH), Special Management Area (SMA)

Type of Document: Draft Environmental Assessment (EA) and Anticipated Finding of No Significant Impact (AFONSI)

Island: Oahu

District: Council District 2; Koolauloa Sustainable Communities Plan Area

TMK: (1) 5-6-001:089

Permits Required: SMA Use Permit; Development Permits

Applicant or Proposing Agency: Sea Turtle Estates, LLC
Contact: Mark Howland
markahowland@hawaii.rr.com
(808) 294-9254
P.O. Box 455
Kahuku, Hawaii 96731

Approving Agency or Accepting Authority: City and County of Honolulu
Department of Planning and Permitting (DPP)
Contact: Christi Keller
c.keller@honolulu.gov
(808) 768-8087
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Consultant: WHALE Environmental Services, LLC
Contact: Mark Howland
markahowland@hawaii.rr.com
(808) 294-9254
P.O. Box 455
Kahuku, Hawaii 96731

Status: Draft EA - Public Review and Comment

Project Summary: The Project proposes of the demolition of one single-family, detached dwelling unit, and the construction of three new single-family, detached dwelling units with garages on a shoreline lot in the R-5 Residential District and Special Management Area (SMA). The dwellings are proposed for family use and will not be used for short-term rentals. All activities are proposed to occur outside of the shoreline setback area. The proposed development triggers the requirement for an EA and SMA Use Permit under Chapter 25, ROH, because three or more dwellings are considered a "larger development," and the Project is anticipated to cost between \$1,500,000 and \$1,850,000. Upon acceptance and publication of the Final EA with a DPP-issued Finding of No Significant Impact (FONSI), the Applicant must submit an application for an SMA Use Permit, which is subject to approval by Resolution of the City Council.

Reasons Supporting Determination: Please refer to the analysis in the Draft EA.

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING & PERMITTING
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

2023 JUN 27 PM 1:56

LAND USE PERMITS DIVISION MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Application Instructions." PLEASE ASK FOR THESE INSTRUCTIONS.

All specified materials described in the "Instructions for Filing" and required fees must accompany this form; incomplete applications will delay processing. You are encouraged to consult with Zoning Division staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filing."

Please print legibly or type the required information.

SUBMITTED FEE: \$200 + 1200

PERMIT/APPROVAL REQUESTED (Check one or more as appropriate):

Cluster: <input type="checkbox"/> Agricultural <input type="checkbox"/> Country <input type="checkbox"/> Housing Conditional Use Permit: <input type="checkbox"/> Minor <input type="checkbox"/> Major <input type="checkbox"/> Existing Use: _____ (Indicate Type of Use) Environmental Document: <input type="checkbox"/> Environmental Impact Statement <input type="checkbox"/> Environmental Assessment <input type="checkbox"/> Supplemental <input type="checkbox"/> Minor Shoreline Structure	<input type="checkbox"/> Modify Approved Permit: _____ (Indicate Reference File No.) <input type="checkbox"/> Plan Review Use Planned Development: <input type="checkbox"/> Housing <input type="checkbox"/> Commercial (WSD Only) <input type="checkbox"/> Resort (WSD Only) <input type="checkbox"/> Interim Planned Development (IPD-T) <input type="checkbox"/> Shoreline Setback Variance Special District Permit: <input type="checkbox"/> Minor <input type="checkbox"/> Major _____ (Indicate District) <input type="checkbox"/> Downtown Height >350 Feet	Special Management Area Use Permit: <input type="checkbox"/> Minor <input checked="" type="checkbox"/> Major <input type="checkbox"/> Temporary Use Approval <input type="checkbox"/> Variance from LUO Section(s): _____ <input type="checkbox"/> Waiver from LUO Section(s): _____ <input type="checkbox"/> Zoning Adjustment, LUO Section(s): _____ <input type="checkbox"/> HRS Section 201H-38 Project
--	--	---

TAX MAP KEY(S): 5-6-001:089
LOT AREA: 1 acre (43560 sf)
ZONING DISTRICT(S): R5 STATE LAND USE DISTRICT: Urban District
STREET ADDRESS/LOCATION OF PROPERTY: 56-157 Kam Hwy, Kahuku

RECORDED FEE OWNER:
Name (& title, if any) Sea Turtle Estates LLC
Mailing Address 56-157 Kam Hwy
Kahuku, Hwy
Phone Number _____
Signature *[Signature]*
PRESENT USE(S) OF PROPERTY/BUILDING:
Residential

APPLICANT:
Name Michele DAmico - dAmico Design Group LLC
Mailing Address PO Box 22578
Honolulu, Hawaii 96823
Phone Number 808-221-2868
Signature *[Signature]*
AUTHORIZED AGENT/CONTACT PERSON:
Name Mark Howland - WHALE Environmental Services LLC
Mailing Address PO box 455, Kahuku, HI 96731
Phone Number 808-294-9254
E-mail markahowland@hawaii.ir.com
Signature *Mark Howland*

PROJECT NAME (if any): Zucco Residence

REQUEST/PROPOSAL (Briefly describe the nature of the request, proposed activity or project):
Demolish existing residence and build a new main dwelling and 2 secondary dwellings

**DIRECTOR
CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING AND PERMITTING
560 S. KING STREET**

Attn: DPP, Frank Fasi Building, 7th floor
HONOLULU, HAWAII 96813

**COVER LETTER – DRAFT ENVIRONMENTAL ASSESSMENT – FONSI DETERMINATION
REQUEST**

Zucco Property

The attached Flash Drive contains the digital version of an Environmental Disclosure Document in support of a Draft Environmental Assessment (EA) in support of a FONSI Determination Request for the Zucco Property in Kahuku, Oahu, Hawaii. As the approving agency, C&C of Honolulu, Department of Permitting and Planning, we respectively request that DPP issue a FONSI determination and route the filing forward to OPSD for publication in the *Environmental Notice*. The Documentation is also intended to help develop a FEA for future filing of a SMA Major Approval. Upon FONSI determination, we will provide update copies of the document with responses to the agencies who commented during the DPP Pre-Consult period for the DEA filing.

Response Contact Information

Mark Howland
WHALE Environmental Services LLC
P.O. Box 455, Kahuku, HI 96731
www.whalees.com
markahowland@hawaii.rr.com

email response is our preference... Mahalo nui loa

Sincerely yours,

Mark Howland (environmental agent for the owners – Zucco Property)
WHALE Environmental Services LLC, P.O. Box 455, Kahuku, HI 96731
markahowland@hawaii.rr.com www.whalees.com 808-294-9254



WHALE Environmental Services LLC

P.O. Box 455, KAHUKU, HI 96731 808-294-9254

**Zucco Residence
Sea Turtle Estates LLC**

**Draft
Environmental
Assessment**

**TMK: (1) 5-6-001:089
56-157 Kamehameha
Highway
Kahuku, Hawaii**

June 2023



*Speak to the 'aina...
Work with Lokahi*

HARMONY AND BALANCE

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

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Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Preface & Summary

PREFACE

These supporting documents for an Environmental Assessment (EA) has been prepared to comply with:

- Chapter 343, and 205A of the Hawaii Revised Statutes (HRS); and
- Title 11, Chapter 200.1 of the revised Hawaii Administrative Rules (HAR) (August 2019).

Proposed Action and Location. Construction on a parcel with demolition of existing dwelling, building of a new single-family residence on that parcel location and two new dwellings on the mauka portion of the lot – the main dwelling with a detached carport at 57-157 Kamehameha Highway, Kahuku, HI 96712. TMK 1-5-6-001:089.

Project Summary. The Proposed Action consists of the construction on a parcel with demolition of existing dwelling, building of a new single-family residence on that parcel location and two new dwellings on the mauka portion of the lot in the R-5 Residential District, and is therefore subject to compliance with the development standards in Chapter 21, Revised Ordinances of Honolulu (ROH), the Land Use Ordinance (LUO). The property is also located within the Special Management Area (SMA) and is therefore subject to compliance with Chapter 25, ROH, the SMA Ordinance. All project components will be outside the shoreline setback area. Therefore, Chapter 26, ROH, the Shoreline Setback Ordinance does not apply. Since the property is located in the VE Flood Hazard Area under Chapter 21 ROH, it is regulated as a shoreline lot under the definition of *development* in Chapter 205A, Hawaii Revised Statutes, as amended by Act 16 (2020). Regulatory authority in the R-5 Residential District and SMA lies with the City and County of Honolulu (City) Department of Planning and Permitting (DPP).

Consistent with Title 11, Chapter 200.1, HAR, other interested agencies and parties were contacted to participate in the pre-DEA early consultation process prior to submittal of this DEA to the DPP. Federal, State and City and County agencies were notified with some comments received for the DEA. Abutters were notified with no responses received. One of the owners is the same owner of this property. A DPP pre-consult letter was also sent with shortened documentation.

Chapter 343, HRS, is incorporated into the “*Guide to the Implementation and Practice of the Hawai‘i Environmental Policy Act, 2012 Edition*” published by the then Office of

Environmental Quality Control (now OPSD). The Guidebook provides an explanation of the Hawai'i Environmental Policy Act (HEPA), its practice, and its implementation. The Guidebook outlines the information to be provided to State and County agencies, prior to construction, which allows the agencies to evaluate the environmental, social, and economic impacts of proposed developments. The following nine (9) statutory conditions are key factors designed to achieve the standards of HEPA and Chapter 343, HRS, as identified in the Guidebook. There are nine (9) statutory conditions:

Use of state or county lands or funds;
Use of conservation district lands;
Use within shoreline setback area;
Use of historic site or district;
Use of land in the Waikiki district;
Amendment to county general plan;
Reclassification of conservation lands;
Construction or modification of helicopter facilities; or
Construction or modification of a wastewater facility, waste-to-energy facility, landfill, oil refinery, or power-generating facility.

These supporting documents for a DEA development, evaluates a proposed new residential development, is triggered by Chapter 25 ROH, as a result of the definition of “*Development*” being amended in Chapter 205A, HRS under Act 16 (2020), and because it meets the threshold for an SMA Use (Major) Permit, which requires an EA. The EA is required to be consistent with the requirements of 343, HRS, and 200.1, HAR.

Proposed actions meeting one of the triggers cannot receive discretionary approval and proceed until one of the following takes place:

- The agency with the authority to grant approval makes a finding that the proposed action falls within a certain class of activities that are routine and minor in scope and exempt from the law because it will probably have minimal or no significant effects on the environment. If not exempt, an EA must be prepared to determine whether an EIS is required. The agency with the authority to grant approval reviews the EA and issues a Finding of No Significant Impact (FONSI) and negative declaration if the action is not likely to have a significant effect on the environment, after which the proposed action may proceed without further study.

OR

- If the agency with the authority to grant approval reviews the EA and determines that the action may have a significant effect on the environment, the agency must issue an Environmental Impact Statement Preparation Notice stating that an EIS will be required. The final EIS must be acceptable to the agency with the authority to grant approval before the Proposed Action can proceed.

OR

- **The Proposed Action triggers the requirements of Chapter 25, ROH, because it proposes development of greater than \$500,000 on a lot located within the X Flood Hazard Zone and the Special Management Area. The DPP's SMA USE Permit Application Instructions require the preparation of an environmental disclosure document in accordance with Chapter 343 HRS, prior to submittal of an SMA Use Permit Application. This DEA has been prepared in accordance with Chapter 343, HRS and other related regulations and rules.**

Other studies prepared in conjunction with these supporting documents to an EA included Draft Survey and Engineered Plans, Botanical and Faunal Report, Cultural Impact Assessment, Erosion Control and Sedimentation Plan, and Phase I ESA Hazmat Report. The aforementioned studies are appended to this document. These documents has also been prepared in consideration of the need for comments requests to the parties in the early consultation package sent in February/March 2023 to the respective stakeholders listed in the *Consultation* Chapter 7 of this EA as well as the DPP's pre-consultation letter.

PROJECT SUMMARY

Project:	Zucco Property – Sea Turtle Estates LLC Existing home demolition with development of new Single-Family Residential Construction, and two new dwellings and associated carport
Applicant:	Name: Zucco Property Contact: Sea Turtle Estates LLC, c/o RGT Wealth Advisors, 5950 Sherry Lane, Suite 600, Dallas Texas 75225
Approving Agency:	Department of Planning and Permitting City and County of Honolulu 650 South King Street, 7 th Floor Honolulu, HI 96813
Location:	57-157 Kamehameha Highway, Kahuku, HI 96731.
Proposed Action:	Demolition of existing dwelling, building of a new single-family residence on that parcel location and two dwellings on the mauka portion of the lot – and a detached carport
Associated Actions Requiring Environmental Assessment	Construction within Special Management Area (SMA) and X Flood Hazard Zone with a cost >\$500,000
Tax Map Key:	TMK 1-5-6-001:089
Parcel Area:	1.3620 acre
Project Area:	15500 SF approximate
Judicial District:	Koolauloa
Community/Development Plan Designation:	Koolauloa Sustainability Communities Plan and Oahu General Plan
State Land Use District:	Urban
County Zoning:	R-5 Residential District
Required Permits and Approvals:	DPP FEA Acceptance and <i>Environmental Notice</i> City Council SMA Approval DPP - Building Permits
Anticipated Determination:	Finding of No Significant Impact (FONSI)
Parties Consulted:	See Chapter 7 - Consultation
Consultant:	WHALE Environmental Services LLC PO Box 455, Kahuku, HI 96731 Email:markahowland@hawaii.rr.com Contact: Mark Howland (808-294-9254)

SUMMARY SHEET

Construction of new Single-Family Residence, two additional dwellings and detached carport

Proposing Group: Zucco Property on behalf of Sea Turtles Estates LLC

Location: 56-157 Kamehameha Highway, Kakuku, HI 96731 on the island of Oahu, Hawaii

Tax Map Keys (TMKs): TMK 1-5-6-001:089

Recorded Fee Owner : Sea Turtles Estates LLC

Existing Use: Occupied Shoreline Residential Lot

State Land Use Classification: Urban

County Zoning Designation: R-5 Residential District

Proposed Action: The Zucco Property – Sea Turtle Estates LLC (Applicant) proposes to demolish the existing dwelling, develop the building of a new single-family residence on that parcel’s existing home location and build two new dwellings on the mauka portion of the lot – and a detached carport. The primary purpose of the proposed project is private home use and consists of approximately 1.362 acres of R-5 zoned lands. The two additional dwellings are for the sons of the existing property owner. The current home is termite damaged and in need of replacement.

Impacts: No significant impacts are anticipated that compliance with applicable regulatory requirements, proposed Mitigation Measures (MM) and Best Management Practices (BMPs) as recommended in the attached

technical appendixes will sufficiently minimize/reduce/ eliminate any potential impacts to the various resource categories presented.

Anticipated Determination: FONSI

Parties Consulted during Pre-Consult: Please see Chapter Seven – Consultation

Proposed Action Location Map

ACTION LOCATION MAP



56-157 Kamehameha Highway, Kahuku, HI 96731
TMK 1-5-6001:089
1.362 acres - entire parcel in SMA

Residential Development on occupied parcel

Figure 1 - Action Location Map .

Draft Environmental Assessment –Zucco Residence - List Of Acronyms And Abbreviations

AAQS	Ambient Air Quality Standards
ac	acre(s)
BMPs	Best Management Practices
CAA	Clean Air Act
CCH	City and County of Honolulu
CFR	Code of Federal Regulations
CZM	Coastal Zone Management Program
DLNR	State of Hawaii Department of Land and Natural Resources
DPP	Department of Planning and Permitting
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
ft	feet/foot
HAR	Hawaii Administrative Rules
HDOH	State of Hawaii Department of Health
HECO	Hawaiian Electric Company
HRS	Hawaii Revised Statutes
m	meter(s)
m ²	square meter(s)
mi	mile
NAAQS	National Ambient Air Quality Standards
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OPSD	Office of Planning and Sustainability Development
PV	Photovoltaic
ROH	Revised Ordinances of Honolulu
SHPD	State Historic Preservation Division

Draft Environmental Assessment –Zucco Residence - List Of Acronyms And Abbreviations

SF	Square Feet
SMA	Special Management Area
SPCP	Spill Prevention and Control Plan
SSA	Shoreline Setback Area
TMK	Tax Map Key
U.S.	United States
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Chapter One

INTRODUCTION

1. Introduction

1.1 Background and General Information

The Proposed Action would be construction of the demolition of existing dwelling, building of a new single-family residence on that parcel location and two new dwellings on the mauka portion of the lot – and a detached carport. This will be for private use for the Zucco Family and their family and not used for vacation rental purposes. The property is in a rural setting along the shoreline, but is urban zoned. It is one of several shoreline lots in the area.

Also, a request for DPP Pre-Consultation was submitted to DPP, abutting property owners and applicable agencies. A presentation before the Koolauloa Neighborhood Board has been made. A vote was taken to recommend the project. Contacts can be found in Chapter 7 – Consultation.

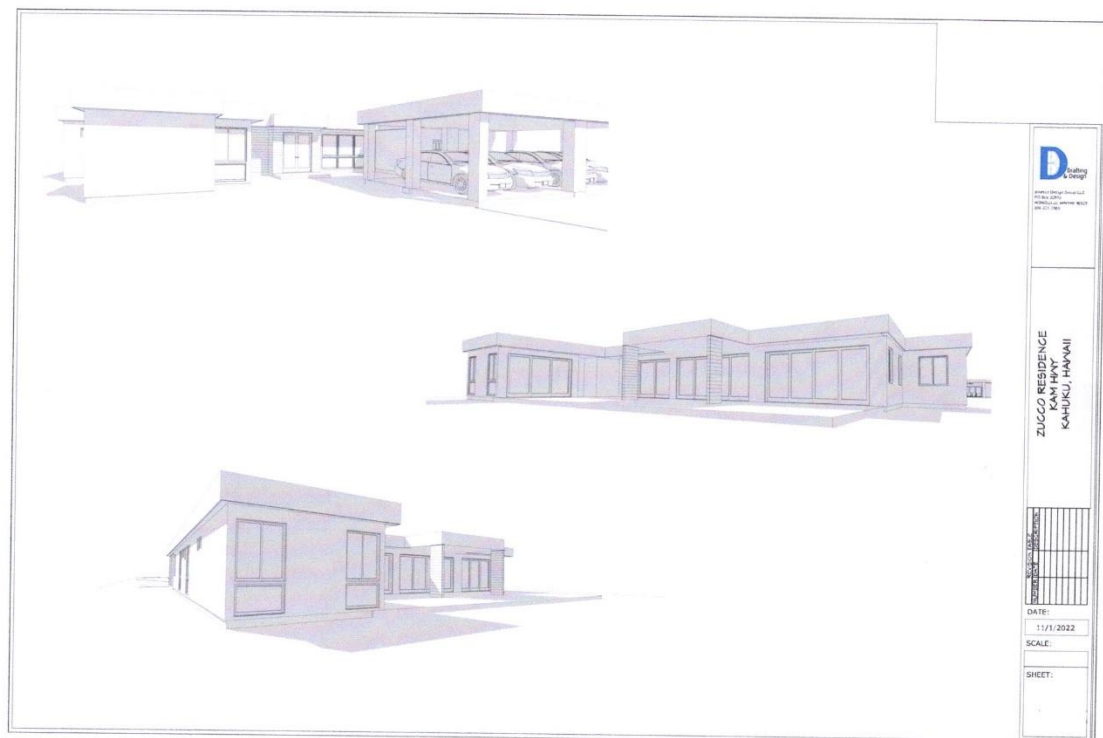


Figure 2 - Conceptual Design

1.2 Property Information



City & County of Honolulu

Department of Planning & Permitting (DPP)

Property Information

56 157 KAM HWY

Sunday, January 22, 2023 | 2:50:44 PM

General Information

TMK: 56001089:0000
 Building Value: \$565,800.00
 Building Exemption: \$0.00
 Land Value: \$2,507,500.00
 Land Exempt: \$0.00
 Acres: 1
 Square Feet: 0
Property Tax Class: Residential
 City: Kahuku
 Zip Code: 96731
 Realtor Neighborhood: Malaekahana



Nearest Park:

Laie Beach Park

[show route](#)

Tax Bill Owner Information

Name	Type	Address	Address 2	City State Zip
SEA TURTLE ESTATES LLC	Fee Owner	C/O RGT WEALTH ADVISORS	5950 SHERRY LANE SUITE 600	DALLAS TX 75225

2010 Census Information

Tract Number: 010202
 Block Number: 4028
 Population (block): 35

Voting Information

City Council Member: Heidi Tsuneyoshi
 Polling Place: Kahuku High/Inter Sch
 Address: 56-490 Kamehameha Hwy
 Neighborhood Board: Koolauloa

School and Transit Information

Elementary School: Laie [show route](#)
 High School: KAHUKU [show route](#)
 Near Transit Route: Yes
 Near Bus Routes: 55, 88A

Zoning and Flood Information

Zoning (LUO) Designation: R-5
 Ohana Zoning Designation: Ineligible
 FEMA Flood Designation: X
 Tsunami Evacuation Zone: Yes

[more public safety info >>](#)

Page Tools: [PRINT](#) | [BOOKMARK](#) | [EMAIL](#) | [STREET/BIRD'S EYE](#)

More info: [ZONE INFO](#) | [BUILDING PERMITS](#) | [PROPERTY TAX](#)

Information shown on these maps are derived from public records that are constantly undergoing change and do not replace a site survey, and is not warranted for content or accuracy.

2010 Assessed Values as of October 1, 2009.

Department of Planning & Permitting
 650 S. King St, Ste 8, Honolulu, HI 96813
gis@honolulu.gov
[Property Info Page FAQ](#)

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Figure 3 - Property Information

The project is demolition of existing dwelling, building of a new single-family residence on that parcel location and two new guesthouses on the mauka portion of the lot – all with detached carports on an

occupied shoreline parcel at 56-157 Kamehameha Highway, Kahuku, HI 96731. The TMK is 1-5-6-001:089

Figure 4 – Construction Layout (full Conceptual Design in appendixes)

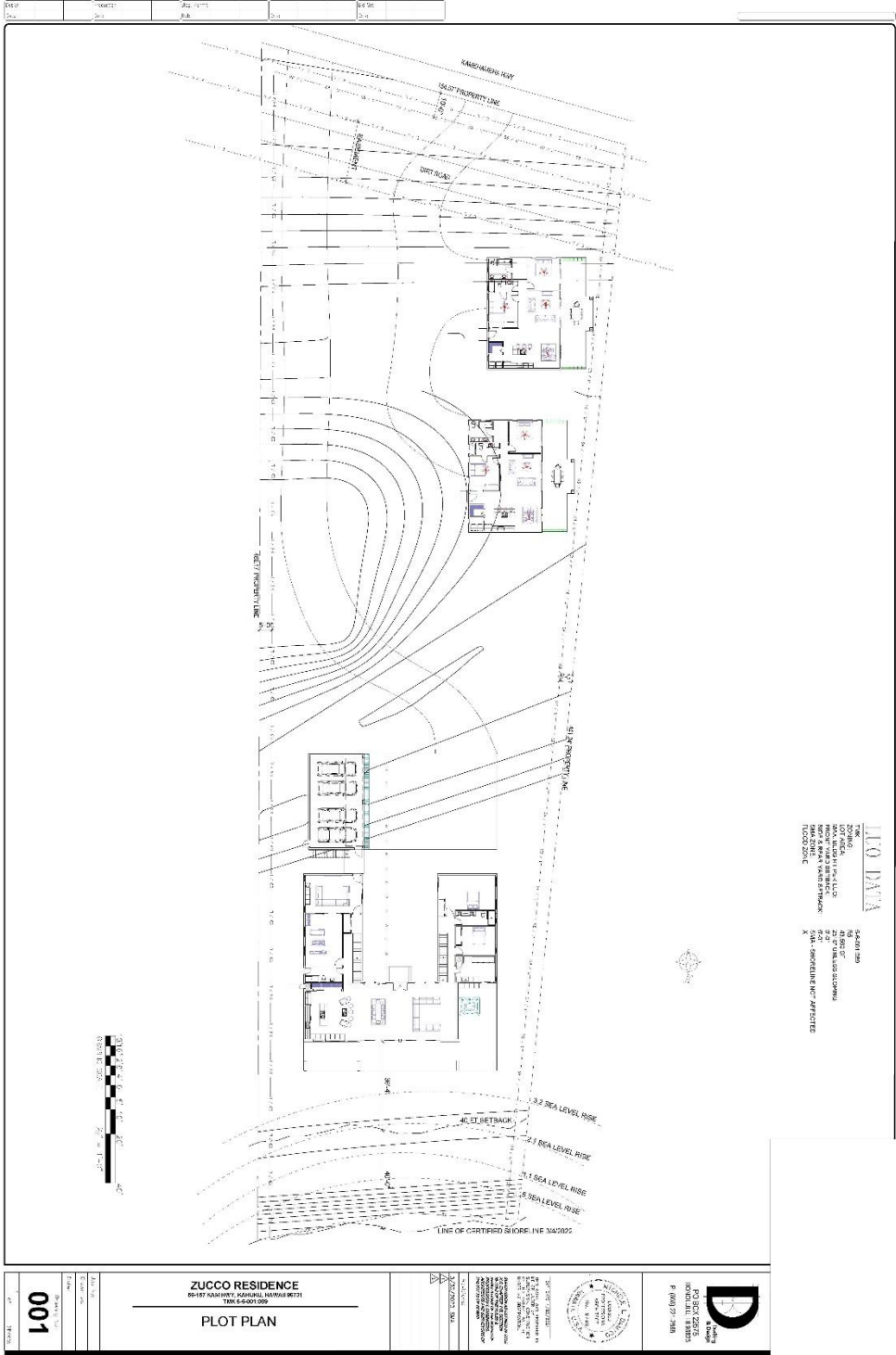


Figure 4 - Construction Layout

There is minimal potential for impacts related to coastal erosion during the lifespan of the proposed new residences due to the Project's location well elevated above the shoreline. Further, a review of the UH shoreline erosion rate maps in Erosion Laie Transect 53 shows a projected minimum retraction rate of approximately 0.03 feet per year, at the lots located directly along the shoreline in vicinity of the Project site, which in 70 years would create a loss of 2.1 feet. The project is 76.4 away from the 2022 certified shoreline.



Figure 5 - Shoreline Erosion Rate

PROJECT LOCATION MAP



56-157 Kamehameha Highway, Kahuku, HI 96731

TMK 1-5-6001:089

1.362 acres - entire parcel in SMA

Residential Development on occupied parcel

Figure 6 – Project Location Map

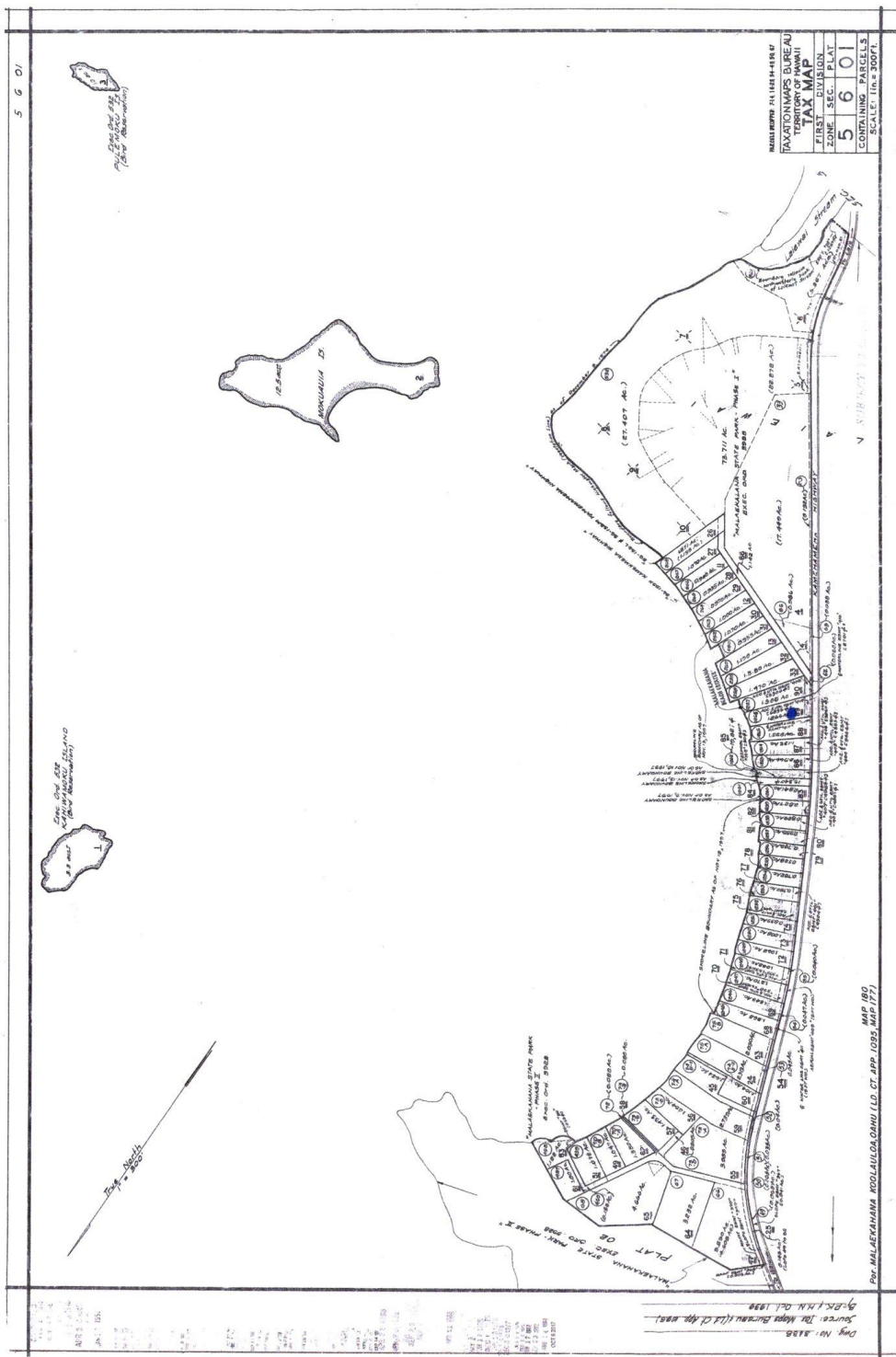


Figure 7 - Plat Map

Nearby Uses within ½ mile include the James Campbell Wildlife Refuges to the North, the Polynesian Cultural Center to the South, the store/restaurants. shopping opportunities of Kakuku and Laie, North and South, other communities, and forest reserves to the west, and beach resources lands to the east.

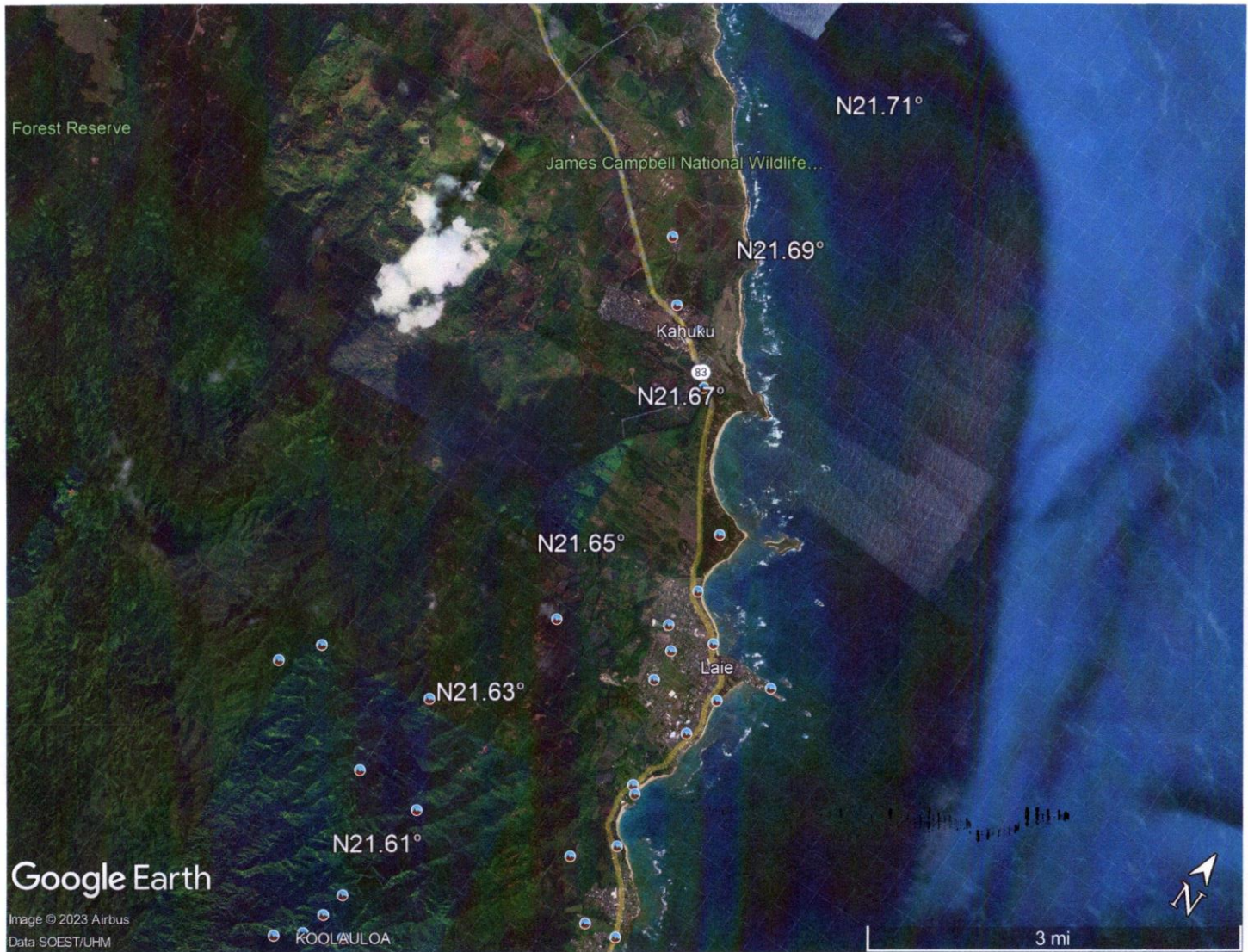


Figure 8 - Nearby Uses

1.3 Land Ownership

The project site is within the boundaries of TMK 1-5-6-001:089 and is owned by the following fee owner(s):

Sea Turtle Estates LLC

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Chapter Two

PROJECT DESCRIPTION

2. PROJECT DESCRIPTION

2.1 Purpose and Need

The purpose of the proposed project is to develop a site in an sustainability and conservation mannered development, as well as an environmentally-sound manner on Oahu and to provide family housing compatible with its surroundings and natural resources as follows:

1. To construct the conceptual plans as shown in Appendix A₅– Initial Conceptual Plan.
2. To support the State’s policy to increase the number of available housing units and ensure there is on-island residential land development in a responsible and sustainable manner with respect for natural resources in conservation lands,
3. To help protect the State’s environmental and environmental resources
4. Housing. The increase the number of available housing unit(s) is a stated goal for Oahu
5. Economic. There will be direct economic activity during construction and operation (temporary jobs, equipment, materials and supplies), and the project-related excise tax revenues over the project’s lifetime.

2.2 – Project Description

The Zucco Property (Applicant: Sea Turtle Estates) proposes to Construction on a parcel with demolition of existing dwelling, building of a new single-family residence on that parcel location and two new dwellings on the mauka portion of the lot – and a detached carports at 57-157 Kamehameha Highway, Kahuku, HI 96731.

The primary purpose of the project is construction of a new single-family residence with a carport on an occupied lot with a home slated for demolition due to termite damage. The secondary purpose of the project is two new mauka dwellings for the owners’ sons.

The subject parcel (hereinafter referred to as the "site") consists of approximately 1.362 acres of R5 Urban (Tax Residential A) County zoned lands and State Land Use District Urban and identified as Tax Map Key Number: 1-5-6-001:089 for the lot. Development is planned for a 4 bedroom/4 bath main home on the lot with two 2-bedroom/2-bath mauka

dwellings. Carport for the main living structure is detached. Access drive will be from the main road of Kamehameha Highway off a common driveway to other nearby lots. The site was graded in the past for the present home construction built in 1976 by a previous owner.

The structure is allowed under Land Use Ordinances as consistent with the R5 zoning. The housing units are well elevated above the flood zone limit. The beach is a sloping one ranging from 0' at the shoreline, and 8' at the top of the beach, base of the coastal bank. The top of bank is at 17' with its steep 9' cliff. The main house is 20' above MSL, and the two dwellings are 23' above MSL (*Elevation measures taken via Google Earth*). Water will be provided by the existing private well. Wastewater will be used via a private sewage system. Electricity is provided from the utility poles, though solar PV may be proposed. The site has already been graded in the past, but additional minimal grading will be done for new foundations and driveways. No additional canopy clearing will be done in the uplands as the site is mostly grassed, and shoreline and shoreline setback vegetation will be left undisturbed. It is also believed that the existing palms in the uplands will not be disturbed. The only import of soils will be gravel for the driveway and house footings. The site is currently only fenced in the forepart of the site with a secure gate.

More details can be found in the site plans for the proposed house and other actions in Appendix A.



Figure 9 - Site Photo

2.3 – Development Schedule

Following design and permitting of an DEA/FEA and SMA Major by DPP – construction sequencing of the Proposed Action is as follows:

1. Implementation of the development activities associated with the proposed actions are anticipated to commence in the last quarter of 2023, or upon approvals of required permits; and are anticipated to be complete within Eighteen (18) months thereafter.
2. Construction sequencing is expected to be utility tie-ins, the demolition of the existing home, construction of the replacement main residence, new dwellings and the carport, the development of yard areas and driveways, and then sustainability actions of re-seeding any barren or graded areas and other sustainability actions.

This Draft EA provides an overview of the proposed project and approvals required in association with the implementation of the Proposed Action in Chapter Four – *Relationship to Plans, Policies and Controls*.

2.4 Project Costs

The proposed project is anticipated to cost approximately \$1,500,000 – \$1,850,000 to construct.

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Chapter Three

**DESCRIPTION of EXISTING
ENVIRONMENT, IMPACTS,
and MITIGATION MEASURES**

3. DESCRIPTION OF THE EXISTING ENVIRONMENT, IMPACTS, AND MITIGATION MEASURES

3.1 Climate, Greenhouse Gas Emissions, and Climate Change

CLIMATE

Definition of Resource

Climate refers to meteorological conditions, such as the temperature range, precipitation levels, and wind conditions in a particular region. Due to their connection with precipitation levels, flooding hazards are addressed under climate for purposes of this EA.

Oahu lies just south of the Tropic of Cancer in the belt of the northeast trade winds. Its climate is generally mild and consistent. The annual average temperature is 76 degrees Fahrenheit (°F), although temperatures occasionally exceed 88 °F. Annual rainfall on the South Shore of Oahu is less than 20 inches and on the leeward side, Oahu dry side, annual rainfall is approximately five (5). In comparison, average annual rainfall is forty-five (45) inches in some areas of the North Shore. Trade winds prevail about 75 percent of the time and generally blow from the northeast at 5 to 15 miles per hour. Departures from normal trade wind weather, known as Kona storms, tend to occur during winter months. Such storms are characterized by several days of variable winds blowing from the south and west.

The weather on Oahu does not change much throughout the year, and the island really only has two seasons (winter and summer). In general, Oahu is usually much drier on the west side of the island (*the leeward side*) than the east side (*the windward side*), so you will find most of the greener landscape along the coastal areas to the east.

As one of the two states in the U.S. that doesn't observe daylight savings time, Hawaii doesn't experience a substantial variation in daylight hours, either. Throughout the year there is only about an hour discrepancy in sunrise and sunset times on the island of Oahu. One of the things that makes Oahu so special is its trade winds. For the majority of the year, winds coming from east to west on the island provide a welcome and necessary relief from the hot, humid environment.

The outstanding features of Hawaii's climate include mild temperatures throughout the year, moderate humidity, persistence of northeasterly trade winds, significant differences in rainfall within short distances, and infrequent severe storms. For most of Hawaii, there are

only two seasons: summer, between May and October, and winter, between October and April. The ocean supplies moisture to the air and acts as a giant thermostat, since its own temperature varies little compared with that of large land masses. The seasonal range of sea surface temperatures near Hawaii is only about 6 degrees, from a low of 73 or 74 degrees between late February and March to a high near 80 degrees in late September or early October. The variation from night to day is one or two degrees.

Hawaii is more than 2,000 miles from the nearest continental land mass. Therefore, air that reaches it, regardless of source, spends enough time over the ocean to moderate its initial harsher properties. For example, Arctic air that reaches Hawaii, during the winter, may have a temperature increase by as much as 100 degrees during its passage over the waters of the North Pacific. Hawaii's warmest months are not June and July, but August and September. Its coolest months are not December and January, but February and March, reflecting the seasonal lag in the ocean's temperature.

Hawaii's mountains significantly influence every aspect of its weather and climate. The endless variety of peaks, valleys, ridges, and broad slopes, gives Hawaii a climate that is different from the surrounding ocean, as well as a climatic variety within the islands. These climatic differences would not exist if the islands were flat and the same size.

The mountains obstruct, deflect, and accelerate the flow of air. When warm, moist air rises over windward coasts and slopes, clouds and rainfall are much greater than over the open sea. Leeward areas, where the air descends, tend to be sunny and dry. In places sheltered by terrain, local air movements are significantly different from winds in exposed localities. Since temperature decreases with elevation by about 3 degrees per thousand feet, Hawaii's mountains, which extend from sea level to nearly 14,000 feet, contain a climatic range from the tropics to the sub-Arctic.

The climate of Hawaii can be defined by what it has and by what it does not have. It does not have the extremes of cold winters and summer heat waves and it usually does not have snowfall and hailstorms on most of the islands. However, on the isle of Hawaii's tallest peaks, do get their share of winter blizzards, ice, and snow. Highest temperatures may reach into the 90s. Thunderstorms, lightning, hail, floods, hurricanes, tornadoes, and droughts are not unknown. However, these phenomena are usually less frequent and less severe than their counterparts in continental regions.

The highest temperature ever recorded in Hawaii was 100 at Pahala (elevation 870 feet) on the Big Island of Hawaii on April 27, 1931. The lowest ever recorded was 12 on Mauna Kea (elevation 13,770 feet), also on the Big Island, on May 17, 1979.

A microclimate is a unique set of localized atmospheric conditions that differs to varying degrees from the greater surrounding region's weather. It can be as small as a few square feet or several hundred square miles in size but is always contained within the surrounding weather conditions.

Even in a local region with its prevailing weather conditions, one can find even smaller areas with their pockets of unique atmospheric conditions. These conditions are known as microclimates.

It is important to note the term "climate" in "microclimate." As discussed, climate refers to the average weather conditions that are unique to an area, compared to the weather, which refers to the atmospheric conditions at any given time. As a result, microclimate refers to atmospheric conditions that prevail within a relatively small space for a sustained period compared to the surrounding weather. The North Shore of Oahu is famous for its microclimates as anyone can attest to as they drive from Wahiawa to Haleiwa or west to Keana Point. Schofield Barracks in Wahiawa is known as the *Grey Lady*, constantly sprinkling. The drive down Kakanahua Road brings one to dry “*dust devils*” crossing the road at mid-point on Central Oahu ag lands. One then crests over the hill and descends to Haleiwa – almost always in the sun. Going east to Kahuku or Laie, there is a more prevalence of trade wind showers along the coast, some microclimates so influenced by terrain that there can be showers on the mauka side of the Kam Highway by Turtle Bay, and bright sunshine on the makai side by the hotel. Going west to Keana Point, the rain shadows from Wahiawa disappear going over the mountain range to the Waianae. Most of the regions between Haleiwa and Keana Point involve purely sea influenced weather patterns. Mostly sun, occasional squeals of rain, dryer conditions with moderate rainfall predominate.

The Kahuku/Laie microclimate is usually classified as follows:

Laie has 0.4% more rainy days than Kahuku. Laie has 2.5% less Sunny Days than Kahuku. The site is in Kahuku town, but closer to Laie in the Malaekahana section.

The Kahuku/Malaekahana microclimate is usually classified as follows: (BWh) WARM DESERT Subcategory of Arid and Semi-Arid Climates (B) Almost all of the lengthy stretches of white sand beach throughout Kahuku and Malaekahana are found in this warm

Hawai'i climate zone. On Oahu, the zone extends along the coast and a scant few miles inland. The area is the one of the driest in the Hawaiian Islands, recording 10-30 inches of rainfall annually and hot days averaging 81°F annually. As opposed to other hot spots around the world, this coastline is among the easiest to tolerate thanks to cool ocean breezes quickly visiting on the land and, especially, the beaches. The actual site lies higher on the scale of this subcategory, getting a bit more rain averaging about 25-30" a year, likely due to the proximity of the downdrafts of the nearby mountains and an average lower temperature of 78 degrees. This site like is more ideal for a pleasant climate since the uplifting mountains above Kahuku Training Area is closer than other stretches of this coastline and possesses more downdrafts from ocean winds hitting the mountain range and returning, creating more moisture for the site and cooler environs. Its microclimate can be characterized as semi-arid with moderate moisture impact and stronger winds from both directions due to bounce-back of ocean off-shore winds encountering the nearby Koolau range and returning as low moisture returning lower velocity winds. As such, the makai side of the site gets the strongest trade winds and ocean winds; while the mauka side is sheltered from those winds and mostly gets wind-bounce dew-laden weaker winds from the Koolau Range.

Impacts and Mitigation Measures

The climate of the northeast side of Oahu would not be adversely affected by the Proposed Action. It is not anticipated that there will be any effect on the context of the existing environment with regard to temperature, wind, rainfall events on-site or in the regions. Moreover, the project is not expected to exacerbate climate change impacts to the climate or microclimates and will be designed to accommodate those changes as can be seen in the *Building Plans* in Appendix A. The *Erosion and Sedimentation Control Plan* (ESCP) in Appendix E recognizes short-term releases of greenhouse gases from the construction process by hopes to have long-term mitigation of greenhouse gas emission by employing the PV panel generated electrical maintenance equipment.

The ESCP address air emissions, dust control, and other measures needed as found in Appendix E. Also, given constant climate changes, the Sea Turtles Estates LLC folks intend to remain flexible and adjust as needed to policy and regulatory changes in the use of the dwelling.

3.2 Physiography

3.2.1 Geology and Topography

Definition of Resource

Geology refers to the surface and subsurface materials of which a land area is composed, including soils and rocks. Important geologic characteristics of soils and underlying rocks include stability, slope, compatibility, shear strength, and productivity. Discussions of geology and soils typically identify existing conditions and determine how the Proposed Action and alternatives under consideration would likely affect, and be affected by, geology and soils.

Affected Environment Changes

The project area is located along the Kahuku Coastal Plain of northern Oahu, Hawaii. The site consists of classified Jaucas sands (JaC) composed of sequences of relatively flat marine sedimentary deposits (calcareous silts, sands and gravels and seashell layers) intercalated with terrestrial alluvium deposits (silts and clays) of artificial loams during past grading activities. The soil profile still showed Jaucas sands, but the soil profile is also disturbed to a degree on the surface by 8” – 12” of past grading. The shoreline is composed of Beach Sands (BS). The site is generally flat and slightly sloping mauka, but has a steep cliff leading down to the sloping beach on the shoreline. The proposed project will not change the soils composition of the property, nor will it impact any significant geologic features or soil resources (See Soil Map Exhibit in ESA – Appendix D) and also below. Small portions of the project elements, such as foundation footings and septic system if in need of expansion will require excavation that may encounter soft rock that will have to be removed using heavy equipment during construction though rock is unlikely given the extent of Jaucas sands in this region. This material does not have any notable natural resource value and it is not suitable for agriculture or other productive uses. All of the soil and underlying rock that would be affected by the Proposed Action are suitable for construction of the proposed facilities as they are designed.

In cultural considerations, any excavation work that encounters cultural artifacts or signs of such, will immediately halt, SHPD called, and asked for advice on how to proceed, which likely would involve the inclusion of an archaeologist for an AIS survey. Construction will not resume until SHPD releases the site. Routine operation and maintenance of any flood mitigated dwellings does not have the potential to affect

geological or soil resources as they will require only footings as the earliest activity, for which the drilling of such will give those indicative indicators of cultural presence.

The Proposed Action site is generally level terrain that drains to the west toward Kamehameha Highway for the majority of the site. The top of the coastal bank drains down the cliff to the sloping beach of Beach Sand (Bs). Construction of the Proposed Action would involve site preparation, grading, and ground disturbance that would minimally alter the topography of the site but disturbs portions of the site by grading such as driveways. The site had previously been graded during construction of the existing home built in 1978 as well as the current driveway seen in Figure 9, page 10. Any remaining vegetation in need of removal will be removed via a DPP Grubbing and Stockpiling Permit and follow guidelines established in the ESCP in appendix E. It is envisioned that only minor shrub removal of non-native species next to the common driveway off highway will be removed for a new driveway gate.

All other site work will follow guidelines established in the ESCP in appendix E. It is envisioned that only grading will be done for driveway placement, dwellings foundation placement and lawn establishment which should be just minimal layers of gravel for the drive, cement for foundations, and loams for the grass lawns.

3.2.2 Soils

The site has an official classification of Jaucas sands and scattered Artificial Soils introduced by past grading work. The registered Jaucas sands are supplemented with artificial fills (rocks, cobble) from the grading efforts. The Beach is (Bs) – Beach sands and will not be utilized.

Affected Environment Changes

Soils on the site are suitable for construction of the Proposed Action. The site does not contain significant geologic features or natural resources that could be affected by the Proposed Action. The Proposed Action will be consistent with drainage standards established by the City and County of Honolulu, Department of Planning and Permitting's - Storm Water Management Plan. Implementation of BMPs for erosion and sediment controls during construction will ensure that geologic or soil hazards and adverse effects to water quality do not occur. The Proposed Action would not result in significant effects associated with geology and soils.



Figure 11 - Soil Mapping .

3.3 Hydrology

3.3.1 Surface and Coastal Waters

Definition of Resource

Water resources is a broad term that encompasses surface water, groundwater, near-shore water, wetlands, and other sources of water that support a variety of human activities, plant and wildlife species, habitats, and ecosystems. Surface water resources typically include stormwater, lakes, streams, and rivers, while water located beneath the ground surface within soil pore spaces, or in the fractures of rock formations is known as groundwater. Near-shore water is generally considered the area extending seaward from the shoreline beyond the end of the surf zone to its start. Offshore waters are usually outside the surf break. A wetland is an area of land that is saturated with water either permanently or seasonally in both inland and coastal environs. Water within wetlands can be saltwater, freshwater, or brackish. Examples of wetlands include coastal marshes and inland swamps or riparian zones. Services performed by wetlands include water purification, shoreline stability, and habitat for plant and wildlife species.

Affected Environment Changes

Surface Water

There are no water bodies located onsite.

The proposed action will not increase any of these degradations to the environment as there is no surface water on the site.

Groundwater Recharge

Groundwater depth at the project site is approximately sixteen to eighteen feet below ground surface and may vary with tidal conditions. It is a “X” zone outside the 2% annual event floodplain. With the exception of the dwellings, the majority of the site will consist of permeable surfaces and will not significantly interfere with natural groundwater recharge. It is believed that driveways will remain pervious.

Nearshore Water Quality

Nearshore waters closest to the Proposed Action are classified as Class A, Open Coastal Waters. It is the objective of Class A waters that their use for recreational purposes and aesthetic enjoyment be protected. In addition, Class A waters shall not function as receiving waters for any discharge that has not received the best degree of treatment of control compatible with the criteria established for Class A water (Chapter 11-54-3, HAR).

The Proposed Action would implement standard construction phase BMPs during construction of the Proposed Action (USEPA 2010). The appendixes contain an Erosion and Sedimentation Control Plan (ESCP – Appendix E). These BMPs would ensure that stormwater runoff from construction does not reach the shoreline located on the eastern property line. With implementation of construction BMPs, nearshore waters would not be impacted by the Proposed Action. The Proposed Action will comply with applicable sections of ROH (ROH, Article 11 Section 16-11) regarding flood-proofing, waterproofing, and structural requirements for buildings and structures. The main house is elevated well above flood and sea rise elevations by natural topography, and other structures are level such as the parking areas. Therefore, no significant impacts related to flooding hazards would occur. No significant environmental consequences associated with water resources would result from the Proposed Action.

Ground Water Quality

The site does not lie within any known aquifers – Wai’alae, East Wai’alae, Palolo, Nu’uanu, Kalihi, or Moanalua. Water Supply will be from the private water supply from the existing well. The proposed septic design for the property will be designed for submittal to the State of Hawaii DOH if deemed not to be adequate for the new dwellings as well and the main home replacement and is not anticipated to result in adverse impacts to groundwater quality

3.4 Natural Hazards

The Disaster Mitigation Act of 2000 (FEMA, 2000), 44 Code of Federal Regulations, Hazard Mitigation Planning, required States and Counties to have approved hazard mitigation plans as of November 1, 2004, to receive Pre-Disaster Mitigation funding. The development of State and local hazard mitigation plans is critical for maintaining eligibility for future Federal Emergency Management Agency (FEMA) mitigation and disaster recovery funding. Given Hawai‘i’s vulnerability to natural hazards and history of disasters,

the State has maintained and implemented a comprehensive, multi-hazard mitigation strategy to reduce loss of life and property damage. This strategy is embodied in the 2018 State Multi-Hazard Mitigation Plan. The 2018 State Hazard Mitigation Plan identifies the major natural hazards that affect the State, assesses the risk that each hazard poses, analyzes the vulnerability of the State's population, property, and infrastructure to the specific hazard, and recommends actions that can be taken to reduce the risk and vulnerability to the hazard. The State Hazard Mitigation Plan also contains a description of programs, policy, statutes, and regulations applicable to hazard mitigation. It should be noted that the 2023 update to this plan has begun and is expected to be released at the end of 2023. The CCH also maintains a Local Hazard Mitigation Plan, that the State of Hawai'i Emergency Management Agency reviews in accordance with The Disaster Mitigation Act of 2000 (FEMA, 2000), 44 Code of Federal Regulations and coordinates with the CCH to ensure compliance with the federal regulations. The identified major natural hazards that could affect the State, as well as the CCH are *climate change effects (including SLR/coastal erosion), floods, tsunamis, strong windstorms/hurricanes, earthquakes, landslides/rockfalls, wildfires, and volcanic hazards*.

3.4.1 Sea Level Rise due to Climate Change

Climate change considerations and its impacts have been discussed in detail in Section 3.1 above. This section will focus on (Sea Level Rise) SLR and coastal erosion impacts. The island of O'ahu is susceptible to flooding and SLR, as it is home to the State's most populous city, Honolulu, which also serves as the State's capital. With approximately one million residents, O'ahu accounts for approximately 70% of the State's entire population. Thus, O'ahu also possesses many of the State's critical resources, infrastructure, and services. A major impact from SLR on O'ahu could reverberate and result in major economic and social impacts for the islands and communities throughout the State. Elevated seawater levels in the spring and summer of 2017 provided a glimpse of the near future when coastal flooding events are expected to occur more frequently and severely with continued SLR. Through a projection, enough evidence has been garnered to determine which sites may have a future SLR threat. Findings by the UH Sea Level Center showed that the 2017 anomalously high-water levels resulted from an unprecedented combination of Pacific-wide climate and ocean variability. The water levels in 2017 presented record highs. The rise in sea level caused localized flooding and coastal erosion throughout the State during the spring and summer of 2017.

Although coastal erosion is a naturally occurring event, as sea level continues to rise, the rate at which coastal erosion occurs is increasing which will have more severe impacts. Over the next 30 to 70 years, as sea level rises, homes and businesses located on or near the shoreline throughout the State will become exposed to chronic flooding. Sea level is rising at increasing rates due to global warming of the atmosphere and oceans and melting of the glaciers and ice sheets. Rising sea level and projections of stronger and more frequent El Niño events and tropical cyclones in water surrounding Hawai'i indicate a growing vulnerability to coastal flooding and erosion. The Hawai'i Sea Level Rise Vulnerability and Adaptation Report (2017) modeled exposure to chronic coastal flooding and erosion using projections from the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report (IPCC, 2014) where the high-end projected scenario was up to 3.2-ft of sea level rise by the end of the century (Courtney et al., 2020).

For O'ahu, the exposure area (SLR-XA) with 3.2 ft. of SLR is based on modeling passive inundation, coastal erosion, and annual high wave run-up. According to a recent National Oceanic and Atmospheric Administration (NOAA) report, global SLR in the range of 6.4 ft. (2.0 m) to 8.8 ft (2.7 m) is "*physically plausible*" by the end of this century (Sweet et. al, 2017). The CCH Climate Commission issued SLR guidance for the City and County to use for areas exposed to 3.2 ft. of SLR as a planning benchmark for most developments, with consideration of 6 ft. of SLR as a planning benchmark for critical infrastructure with long expected lifespans and minimal risk tolerance (Climate Change Commission, 2018).

The Proposed Project Area (construction) has portions located within the 3.2 ft. SLR exposure areas, only the beach and the coastal bank of the of the Project Lot within the SLR (See Figures 11 [regional exposure] and Figure 12 [site exposure]). This is likely due to the high elevated coastal berm along the shoreline and the distance of the planned construction using an excessive shoreline setback. (lot is topographically and distance oriented from the shoreline. A shoreline survey of that location is in progress.

Sea Level Rise maps for the region and site specific locales follow:

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Figure 11 - Sea Level Rise - Regional

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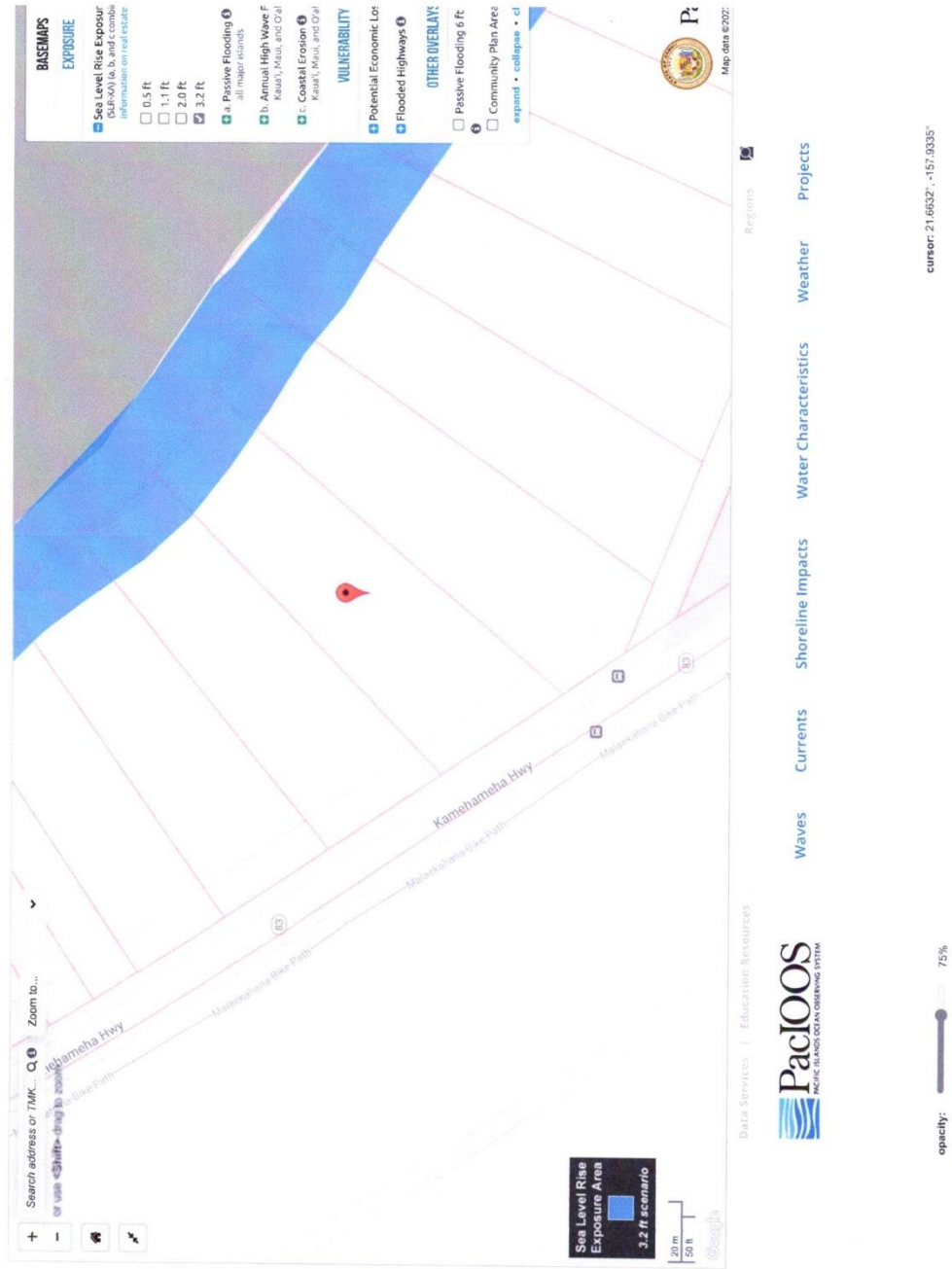


Figure 12 - Sea Level Rise - Site

The project action has been evaluated for potential impacts related to coastal hazards, particularly flooding potential using the Hawaii SLR Vulnerability and Adaptation Report and the SLR Guidance and Climate Change Study. Site-Specific, the first-floor elevation has its lowest elevation at 20.0' above the 10' benchmark topo indicator above MSL, above the current 11' flood elevation standard and thus will not require flood insurance being zone "X". However, there is a projected elevation change to that current standard in the building area in the next projection of the SLR Exposure Area. As can be seen on the preceding SLR 3.2' elevation change maps above, the active working area of the site is still not in an endangered zone as the rise would not reach the project area, and hence the required elevation above 14.5' elevation due to SLR exposure which the 20.0' first floor elevation addresses. As shown in the next few pages, the erosion rate is in relatively a neutral position for the next few decades and little change to the shoreline, except an incremental amount as shown on the shoreline erosion rate map in Figure 5/Page 4 as expected.

On a broader policy level, added information will continually need to be incorporated within future assessments to identify where efforts should be focused when developing adaptation strategies to SLR impacts. It is anticipated that the Proposed Project will need to be flexible to conform with guidance set forth by best practices outlined by policies and research based on the best scientific data at the time as climate change science, technology, and policies evolve over time.

As well, for shoreline projects, on the next pages are three more graphics, the SMA regional map showing the site in common with neighboring properties; passive flooding, the hi-wave/erosion rate potential map which shows the hi-wave action and erosion potentials, and the NRCS Beach sands, marine and beach sands locations.



Figure 13 - SMA Regional

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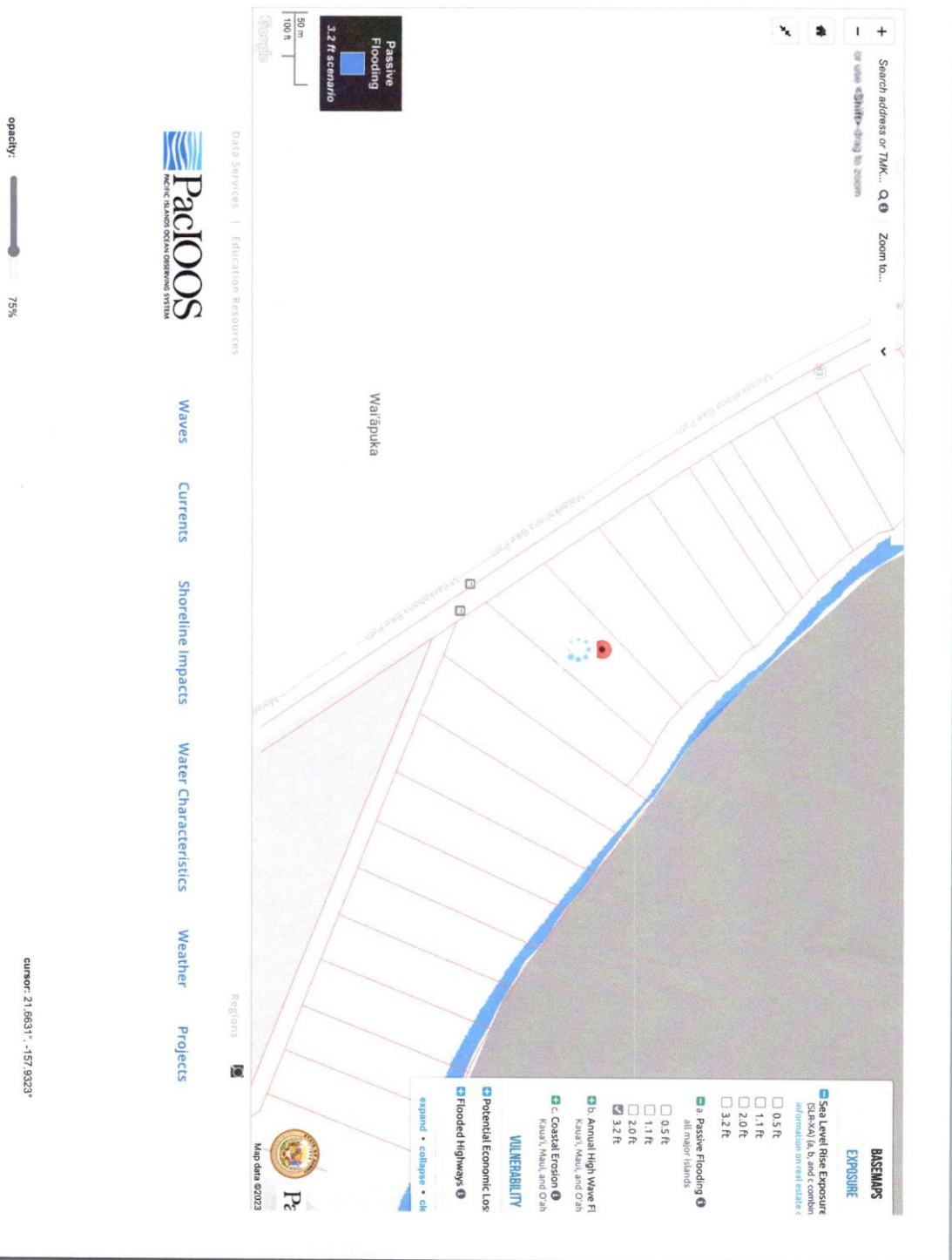


Figure 14 - Passive Flooding

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Figure 15 - Hi-wave, Erosion.

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Figure 16 - NRCS Beach, Dunes and Marine Sand Locations

Sand Locations

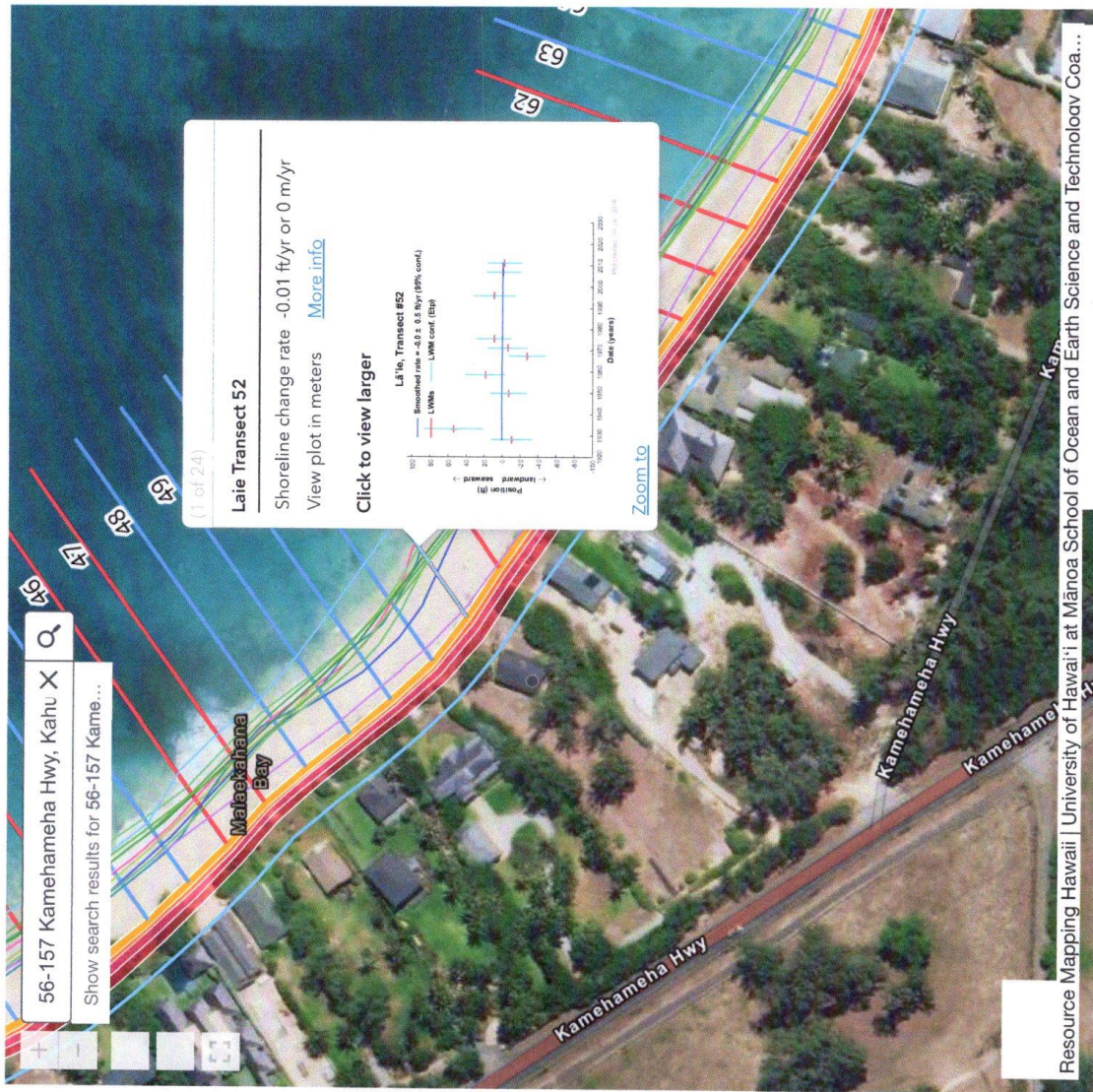


Figure 17 – Erosion Gain/Loss Map

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The theoretical 6’ sea level rise, but the Zucco lot is not in the low to high water depth of the 6’ scenario.

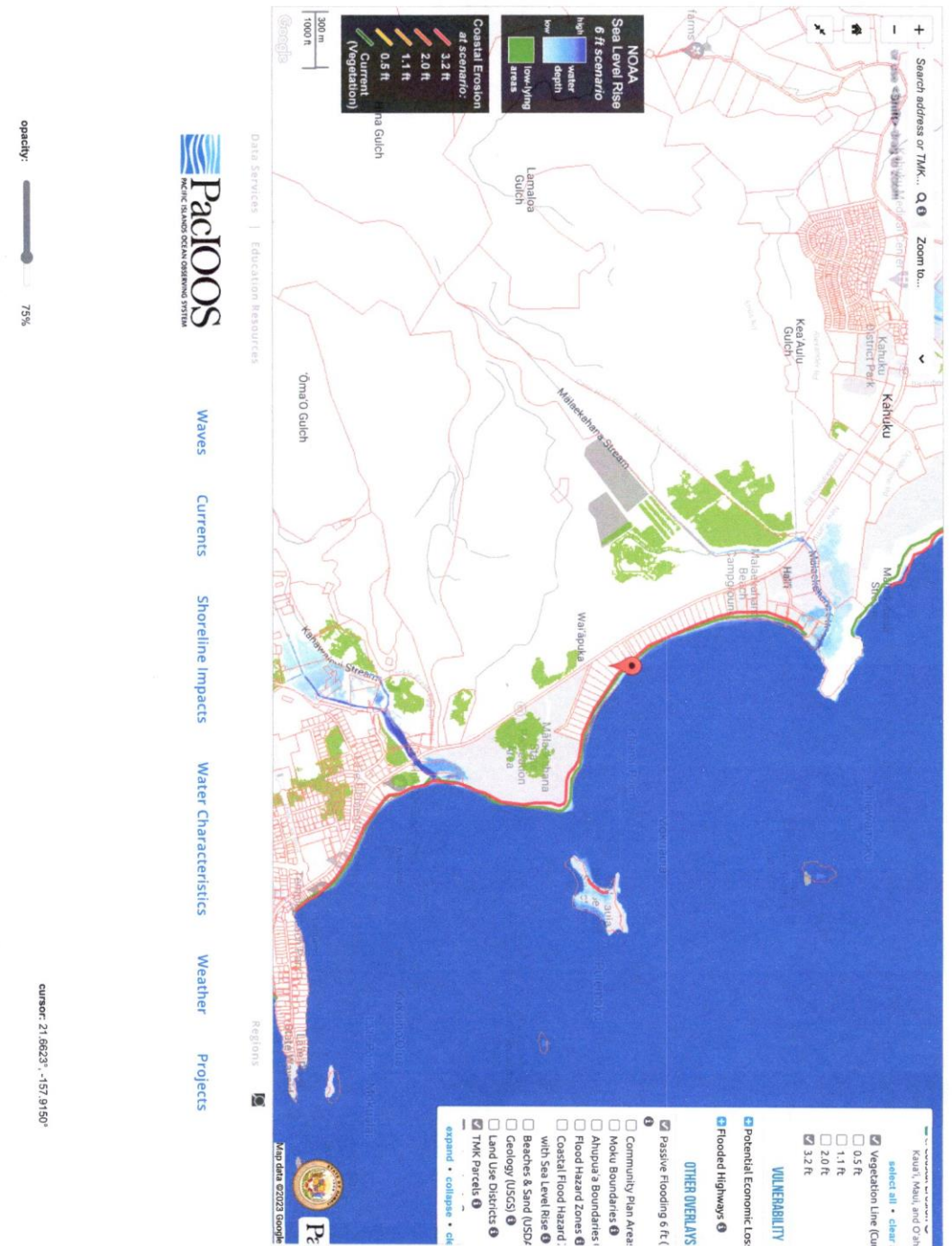


Figure 18 - NOAA 6’ Surge

3.4.2 Flood and Tsunami Hazards

Floods are the temporary inundation of land from excessive rainfall or other sources. Although floods are caused by natural events, most flood damage is a result of human occupation and development of lands that are susceptible to flooding without adequate protection. The CCH is vulnerable to flooding from storms, storm surge, high surf, and on rarer occasions, tsunamis. Every year flooding causes millions of dollars of damage. In the CCH, from about 1915 to 2018, floods caused by rainstorms, tsunamis, and hurricanes have claimed more than 140 lives and inflicted more than \$200 million dollars of direct and indirect damage (DEM, 2020). According to the Flood Insurance Rate Map (FIRM), prepared by the Federal Emergency Management Agency (FEMA), the Zucco Property is situated within one flood zone designation, Zone X (no elevation determined): areas determined to be outside the 0.2% annual chance floodplain.

All of the Project Site itself is situated within Zone X (See Figure 19). Zone X includes studied areas that are areas determined to be outside the 0.2% annual chance floodplain, and does not require mandatory flood insurance and floodplain management regulations or options, and as such, this project still applies stringent flood mitigation methods staying with first floor elevation above the 14.5' (*standard 11' flood elevation and 3.4' SLR*) denotation with its plans. With regards to tsunami hazards, since the early 1800's, approximately 50 tsunami(s) have inundated the State of Hawai'i's shores, including the 1946 tsunami that resulted in wave heights of 11 meters and killed 6 people on O'ahu alone. Additional tsunamis impacting O'ahu shores occurred in 1952, 1957, 1960, 1964, and 2011. According to the Tsunami Evacuation Zone maps for O'ahu, the property is situated within the Tsunami Evacuation Zone, but not the Extreme Tsunami Zone. However, the Project Site lies entirely within the Tsunami Evacuation Zone (See Figure 20). As well, the FIRM map for the site (see Figure 21) is included in the next few pages.

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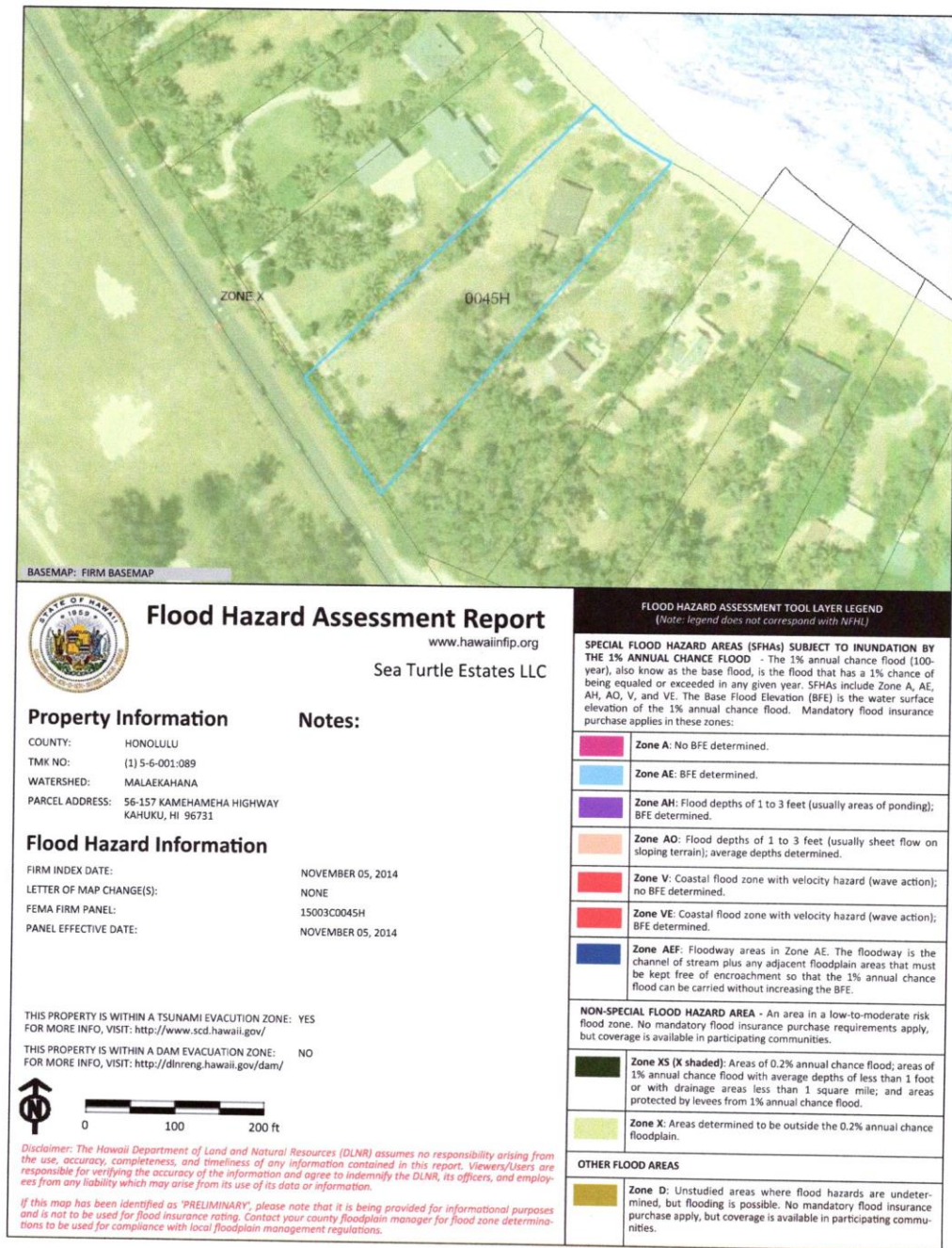


Figure 19 - FHAT Map

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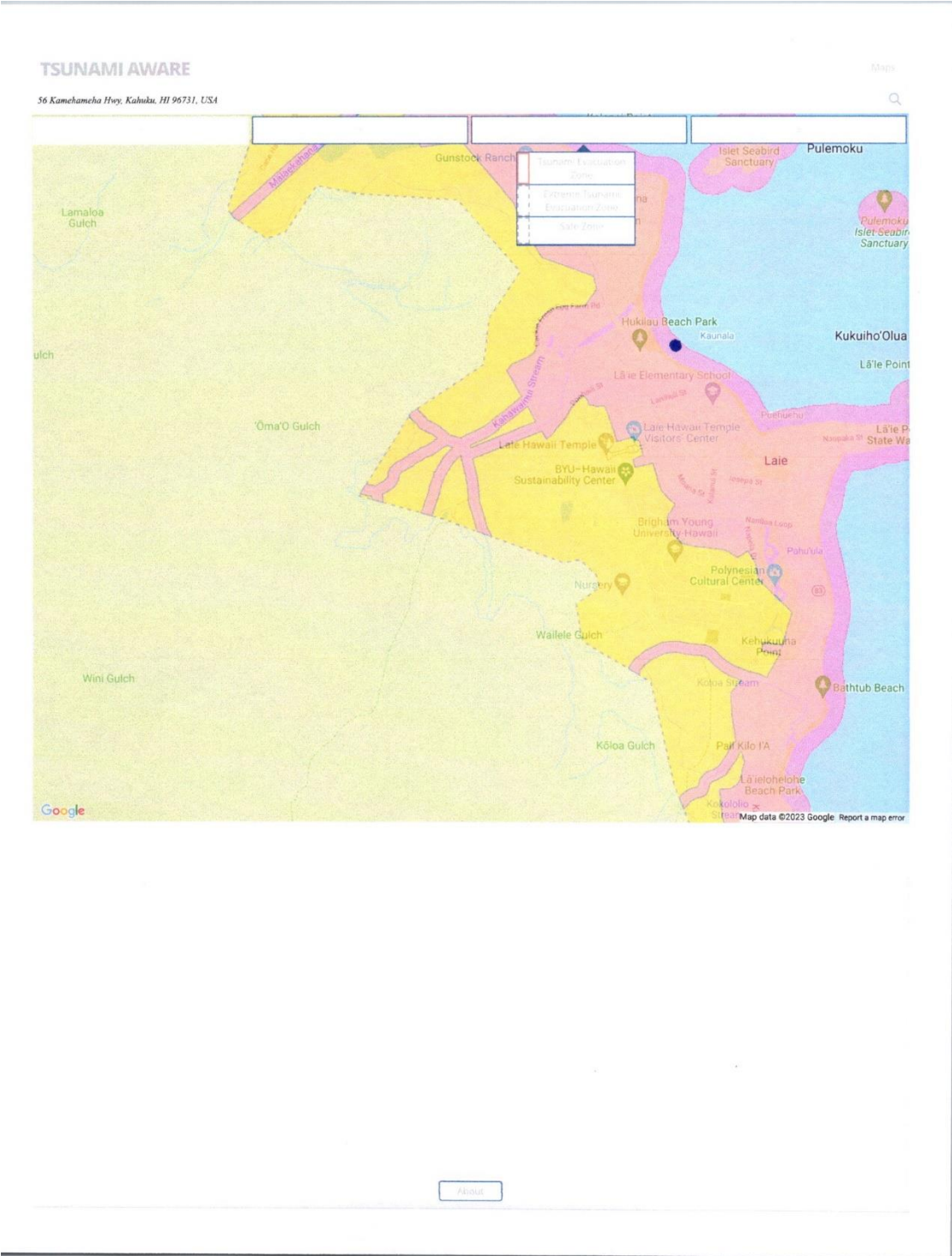


Figure 20 - Tsunami Map

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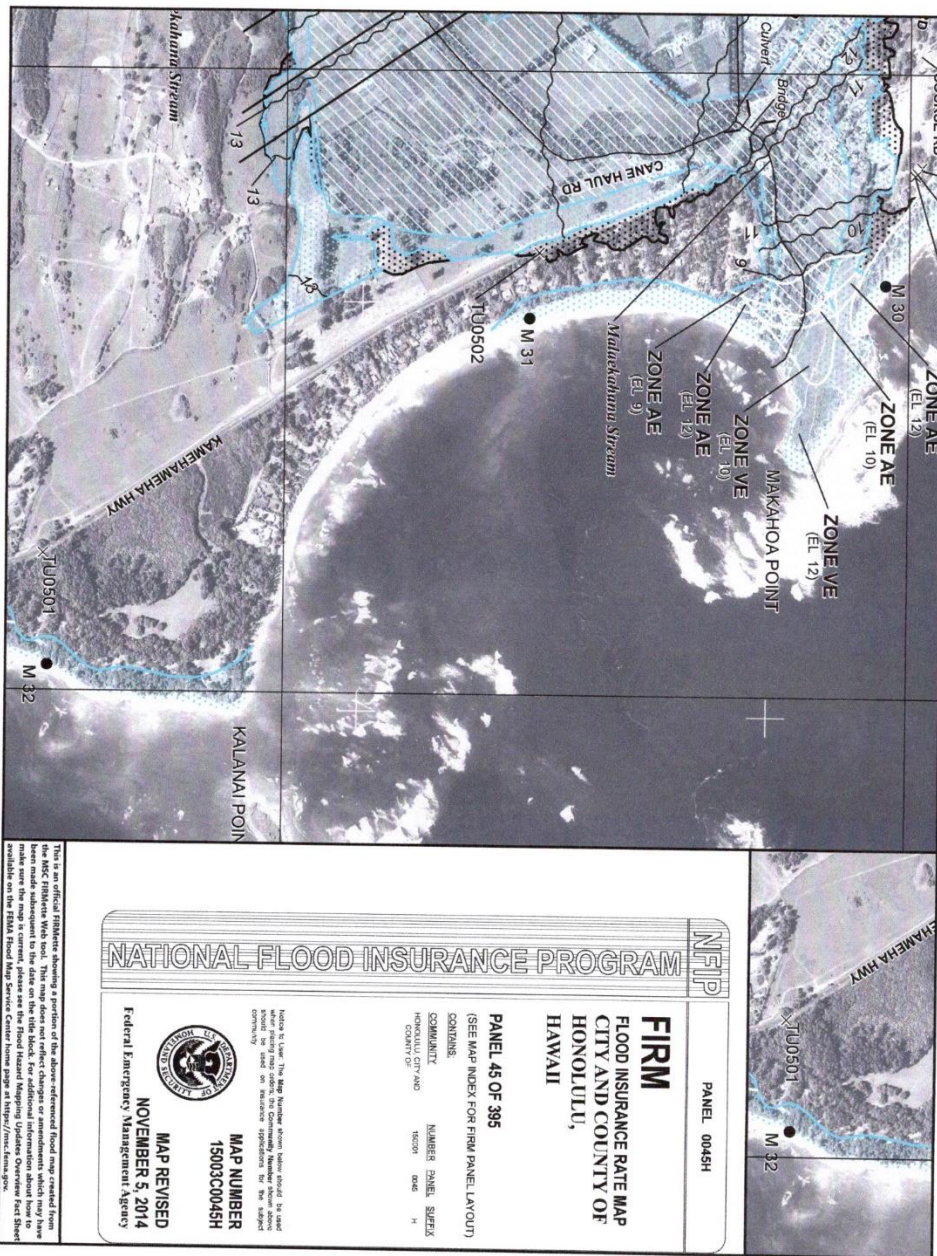


Figure 21 - FIRM Map

Impact and Mitigation

According to the Hawaii-National Flood Insurance Program Flood Hazard Assessment Tool, the Proposed Action is located within Zone X. The Proposed Action will comply with applicable sections of ROH (ROH, Article 11 Section 16-11 *and* Required Compliance with Chapter 21A ROH Flood Hazard Areas Ordinances) regarding elevation of the dwelling or structures, flood-proofing, waterproofing, and structural requirements for buildings and with structures potentially subject to coastal flood waters due to tsunami(s) with the site’s project action based on sea rise maps and hi-wave maps.

On DPP’s Site, the proposed actions locations are deemed “Climate Ready”. Graphic follows:

As a result, the Proposed Action would not result in significant impacts to people or property due to a flooding hazard, including hazards related to coastal flooding due to a tsunami. In the short- and long-term, no significant impacts on flood hazards on the Proposed Project are anticipated as the proposed improvements are not anticipated to increase flood risks or cause any adverse flood-related impacts at the project area. The Proposed Project will be designed and constructed to applicable flood zone requirements.

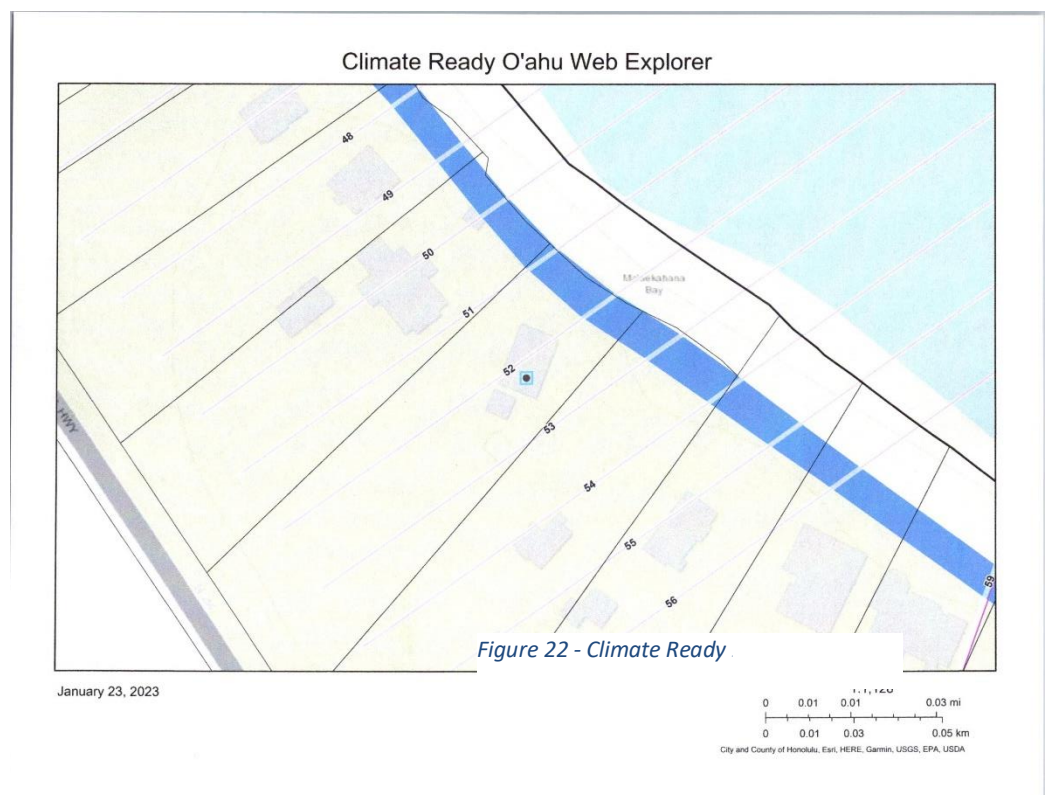


Figure 22 - Climate Ready Map

For the development, all drainage improvements, excavation, drilling, and grading will be coordinated with the appropriate agencies during permitting and construction in order to

ensure that the Proposed Project will not result in significant impacts regarding flood and tsunami hazards.

3.4.3 Hurricane and Wind Hazards

The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The State has been affected twice since 1982 by significant hurricanes, Iwa in 1982 and Iniki in 1992. During hurricanes and storm conditions, high winds caused strong uplift forces on structures, particularly on roofs. Wind-driven materials and debris can attain high velocity and cause devastating property damage and harm to life and limb. Along the coastline, a surge of water, topped by battering waves can move ashore into low lying coastal areas. However, it is difficult to predict how hurricane-induced storm surge may impact a specific location due to differences in atmospheric pressure, tidal stage, coastal topography, and location relative to the eye of the hurricane. It is difficult to predict these natural occurrences, but it is reasonable to assume that future events will occur. The Proposed Project is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes.

Impacts and Mitigation Measures

The potential for hurricanes, while relatively rare, is present across the State of Hawai'i. The Proposed Action's construction activities could potentially exacerbate the effect of hurricanes if loose materials are not secured prior to the event of a storm and become flying debris. To minimize this hazard, construction materials and equipment would be stored properly when not in use, consistent with construction best management practices (BMPs – secure the site in storm events). To safeguard against hurricane damage in the long-term, the Proposed Project improvements would be designed in compliance with American Society of Civil Engineers and International Building Code standards for wind exposure.

As can be seen from Category 4 (highest for Hawaii) and even in Category 1-4 Hurricane Surge Maps from the National Weather Service, the site is not exposed to hurricane surges to a level of *greater than 3' above ground* for Categories 1-4. *We are not sure if this is added to the 3.2' SLR elevation.*

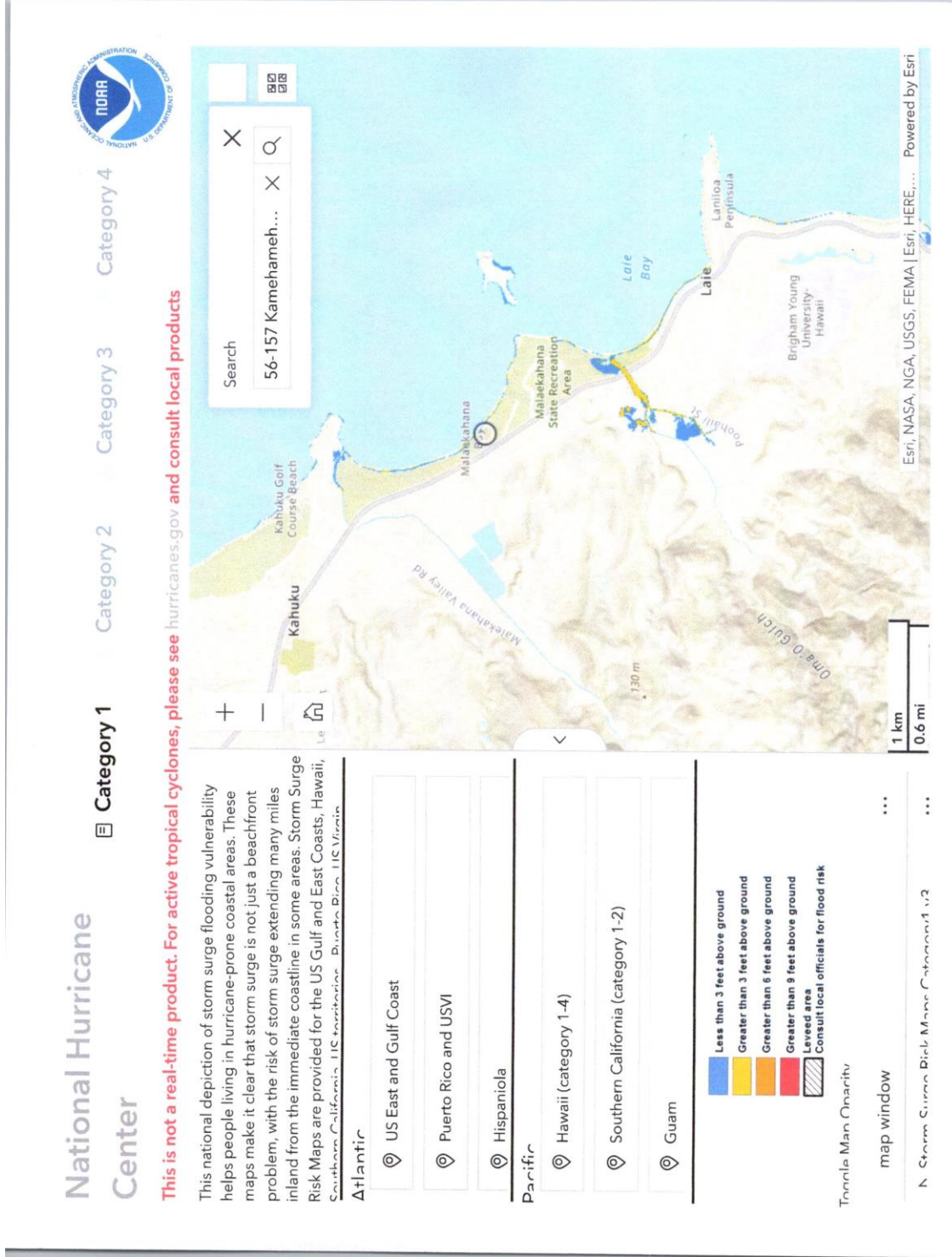


Figure 23 - Hurricane Surge Cat 1

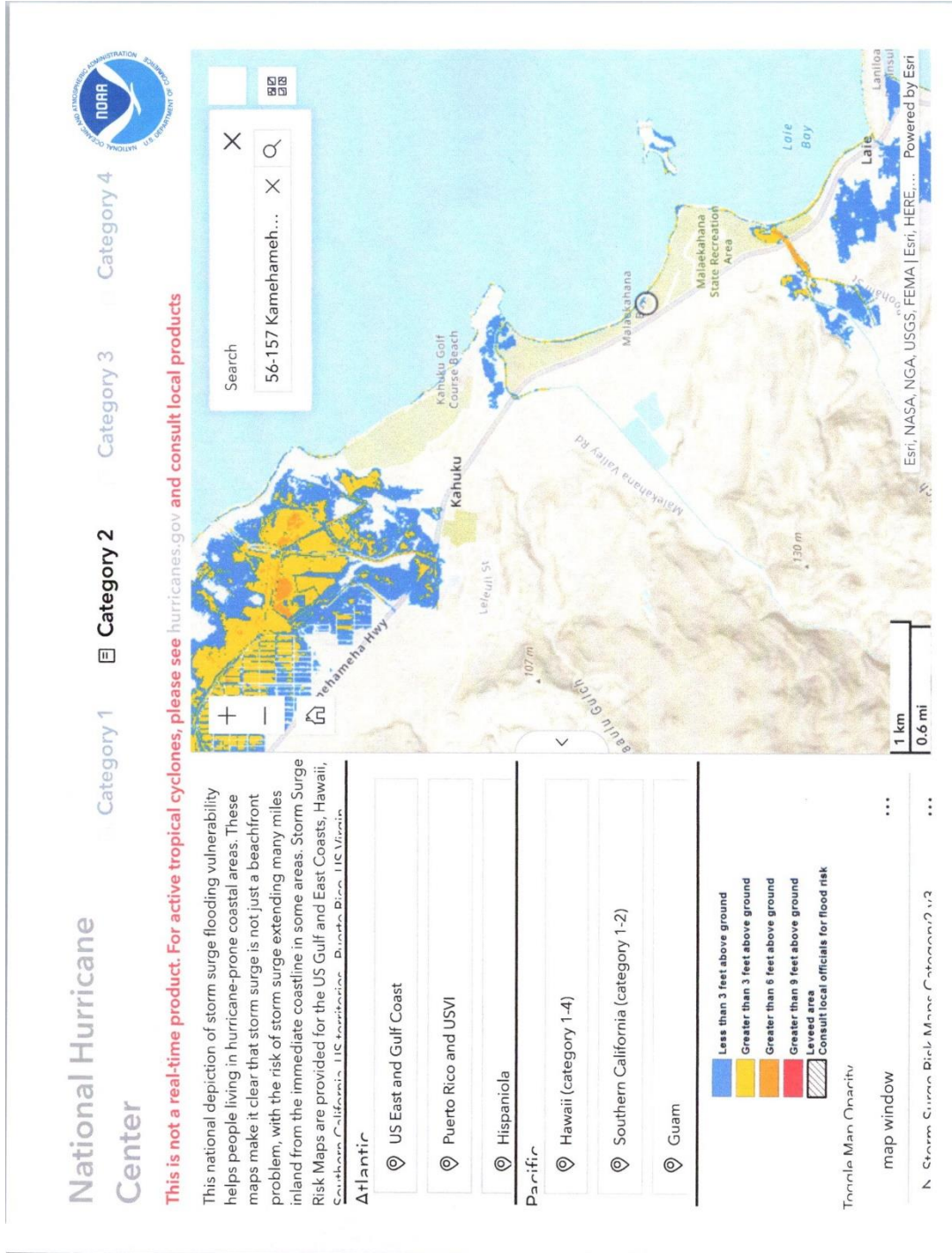


Figure 24 - Hurricane Surge - Cat 2.

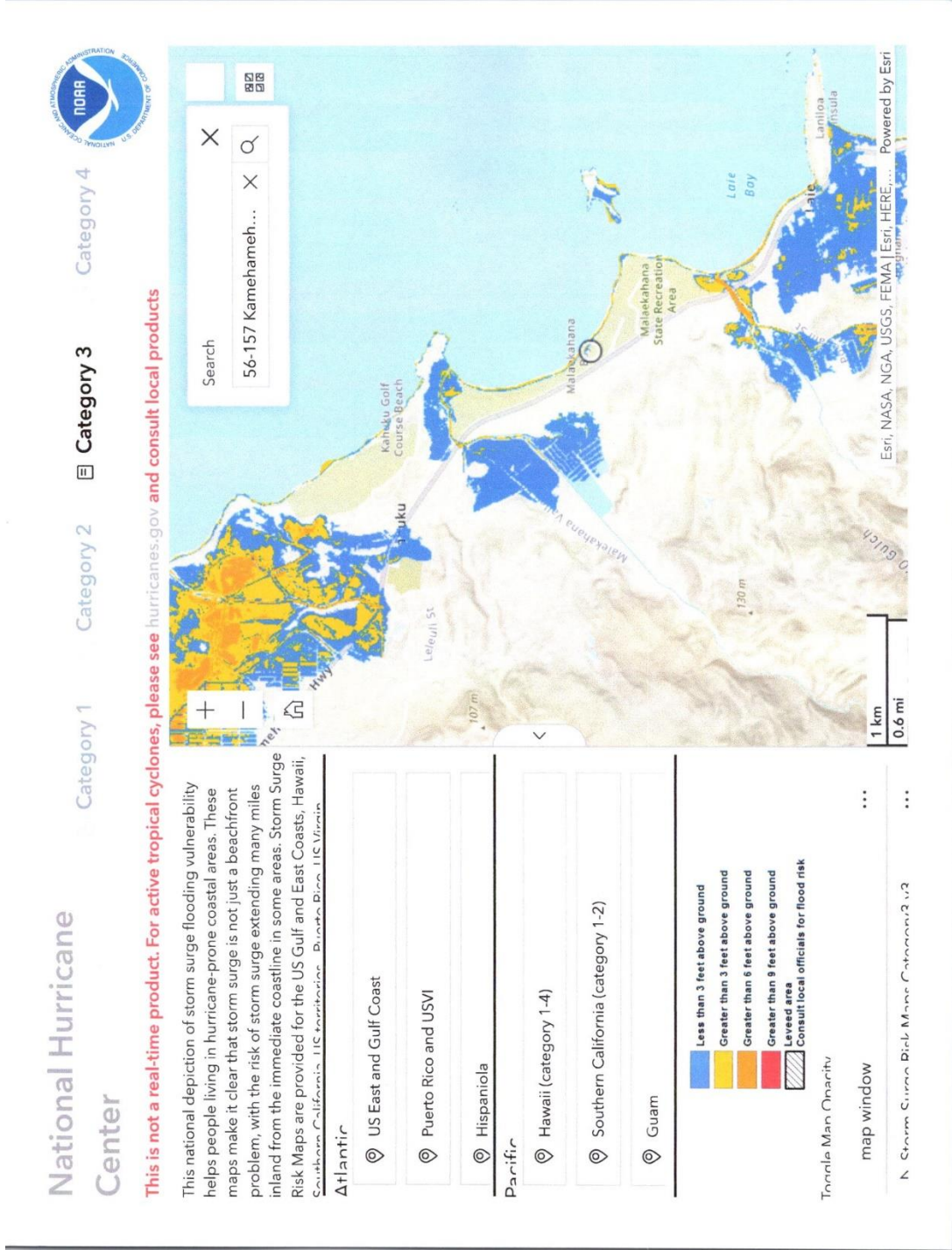


Figure 25 - Hurricane surge - Cat 3.

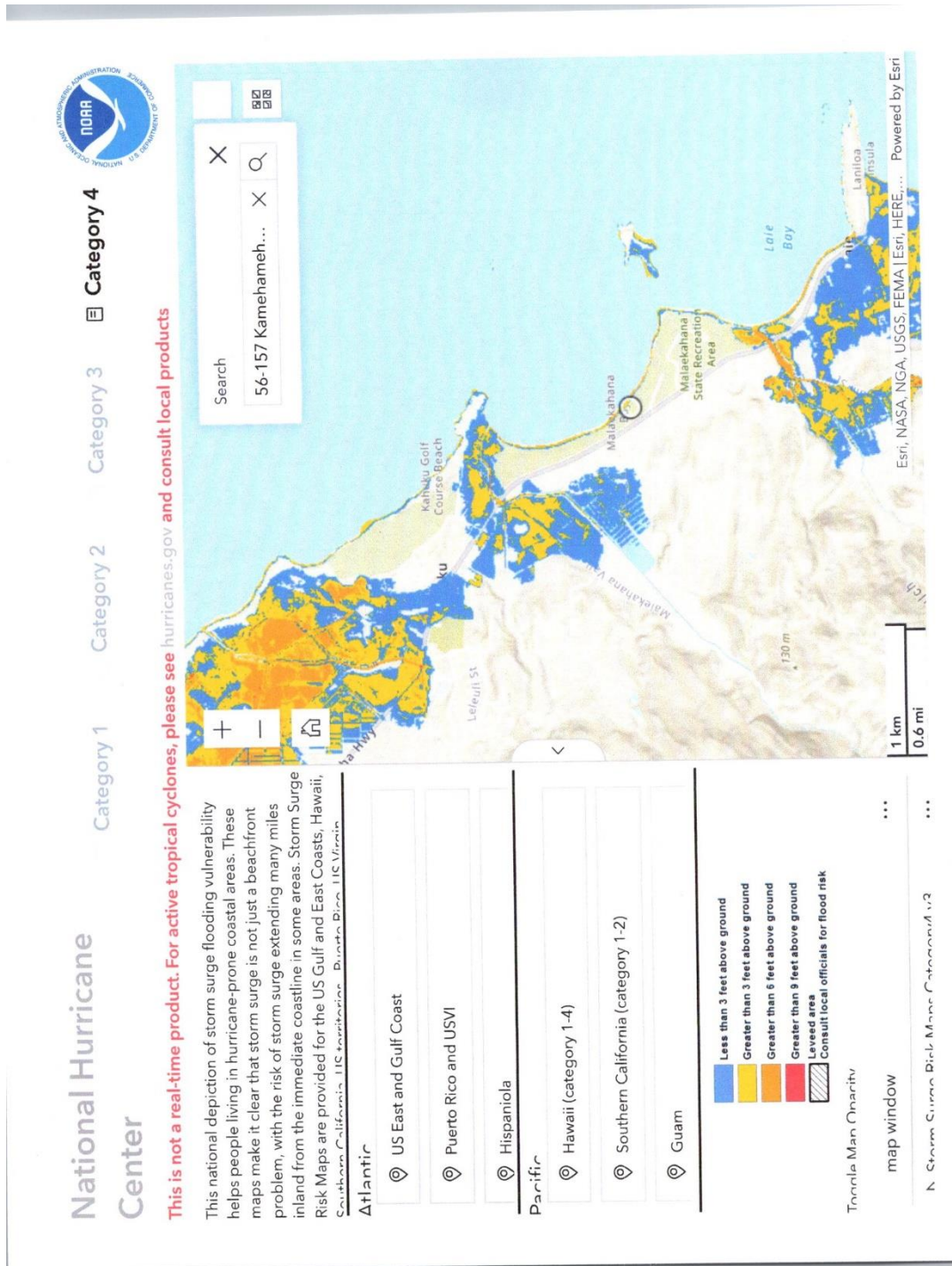


Figure 26 - Hurricane Surge - Cat 4.

3.4.4 Earthquake and Seismic Hazards

Seismic hazards are those related to ground shaking. Landslides, ground cracks, rock falls and tsunamis are all considered as seismic hazards. Although difficult to predict, an earthquake of sufficient magnitude causing structural or other property damage may occur in the future. However, except for the island of Hawai'i, the Hawaiian Islands are not situated in a high seismic area subject to numerous earthquakes (Macdonald et al. 1983). Thousands of earthquakes occur every year in the State of Hawai'i. Earthquakes in the Hawaiian Islands are associated with volcanic eruptions or tectonic movements. Most of these earthquakes are closely related to volcanic processes and are so small they can only be detected by seismometers. One of the larger and more recent earthquakes occurred offshore of Puakō, Hawai'i in 2006. The earthquake measured 6.7 on the Richter Scale and caused minor damages to structures and buildings on the island of O'ahu. Engineers and other professionals have created a system of classifying seismic hazards on the basis of the expected strength of ground shaking and the probability of the shaking actually occurring within a specified time. From our research in the International Building Code (IBC) seismic provisions, Hawaii has only adopted codes for Hawaiian Historic Properties, which this site does not contain. The IBC classifies the likelihood of seismic activity into zones ranging from 0 to 4. Seismic Zone 0 represents no chance of severe ground shaking and Seismic Zone 4 represents a 10 percent chance of severe shaking in a 50-year interval. The Project Site lies within the region of O'ahu, which is generally classified as Seismic Zone 2A under the IBC. Strong shaking is associated with earthquakes in this zone and may result in negligible damage to buildings in superior design and construction, slight to moderate damage in well-built ordinary structures, and considerable damage in poorly built structures. Thus, Haleiwa is assessed to have low vulnerability to earthquakes.

Volcanic hazards on O'ahu are considered minimal due to the extinct status of former volcanoes; however, the effects of earthquakes occurring on the islands of Hawai'i, and Maui may be felt on the island of O'ahu.

Impacts and Mitigation Measures

O'ahu has not experienced significant seismic events in the modern era. The development of the Proposed Action would not be subject to adherence to earthquake design requirements, but all buildings are expected to adhere to modern building standards that do incorporate seismic codes to ensure that all developments of the Proposed Action would comply with

geotechnical recommendations for seismic hazards and meet prevailing building codes by incorporating specifications to reduce vulnerability to earthquakes at that time.

3.4.5 Wildfire Hazards

Wildfires can threaten life and property, but they can also harm the environment and threaten important natural resources such as endangered species. While sometimes caused by lightning, nine out of ten wildfires are human caused. Put simply, "*wildfire*" is the term applied to any unwanted and unplanned fire burning in forest, shrub, or grass regardless of whether it is naturally or humanly induced (DEM, 2020). On a global basis, the number of wildfires has significantly increased in the last decades. Such an increase can be explained by four key factors:

1. *Past fire suppression policies, including one of "total suppression," which allowed for the accumulation of fuel in the form fallen leaves, branches, and excessive plant overgrowth in forest and wild land areas.*
2. *Increasingly dry, hot weather.*
3. *Changing weather patterns.*
4. *Increased residential development in the wild land/urban interface*

All the Hawaiian Islands are susceptible to wildfires, especially during prolonged drought and high winds. In recent years, the average annual cost to suppress wildfires in Hawai‘i is about \$1,100,000 - making it a Statewide risk (DEM, 2020). The greatest danger of fire is where the wildland borders urban areas. Through August 2018, wildfires in Hawai‘i have burned 30,000 acres (about double the annual average). Historically, most of these fires have been directly caused by humans, either directly or by negligence. Malakahana is within a moderate-risk area for wildfires due to nearby brush areas prone to fire risks (*Gunstock Ranch*).

Impacts and Mitigation Measures

The Proposed Project is somewhat anticipated to have impacts that could result in wildfire events as the Proposed Project is within a moderate-risk area being mostly cleared of brush, with a grass understory but with nearby fire prone areas across the Kam Highway. It is hopeful the highway suppresses spread to the shoreline. Irrigation and water supply for the property also provides fire suppression tools.

Moreover, the State Department of Land and Natural Resources-Division of Forestry and Wildlife (DLNR-DOFAW) has adopted a Fire Management Handbook, which specifies its standards for prevention, pre-suppression, and suppression. The document provides a structured approach in providing for public/firefighter safety and minimizing damage to Hawaii’s environment. Funding for the fire management program is provided by the State's general fund and federal cost share programs through the U.S. Forest Service. These programs include the Rural Community Fire Protection and Rural Fire Protection and Control programs. Additionally, the DLNR-DOFAW is a key agency within the State who can trigger provisions of the Stafford Act (Fire Suppression Assistance) which provides for FEMA funding assistance in situations where forest and grass fires on public or private lands threaten a major disaster to communities and economies. For DLNR-DOFAW to meet its legal fire protection mandate for State-owned lands and honor its partnership with other fire services, DLNR-DOFAW negotiated with its local fire departments and established a cooperative mechanism for prevention, pre-suppression, and suppression measures by way of the current Memorandum of Agreements (MOAs).

3.4.6 Volcanic Hazards

The island of O’ahu is formed from two principal volcanoes: Wai’anae and Ko’olau about *2.2 – 3.8 million years and 1.8 – 2.6 million years ago* respectively. O’ahu is also riddled with a number of more recent smaller “rejuvenation” vents such as Diamond Head, Koko head, Punchbowl, and many others, which are believed to have occurred between 70,000 and 500,000 years ago. Hence, volcanic hazards on O’ahu are considered minimal due to the extinct status of the former volcanoes. The Island of Hawai’i is composed of five volcanoes, two of which (Mauna Loa and Kilauea) have been highly active in the past 100 years and pose the most immediate threat to life and property. A third volcano, Hualalai, last erupted in 1801 and has the potential to erupt again within our lifetime. The other two are dormant. Mauna Kea last erupted approximately 3,500 years ago and is considered dormant but not extinct. Kohala, considered extinct, is the oldest volcano on the island and last erupted approximately 60,000 years ago. Hawaiian volcanoes are not as explosive as continental margin volcanoes (e.g., Rainier, Mt. St. Helens, Mt. Shasta) and are characterized by relatively quiet outflow of relatively fluid lava, therefore the probability of harmful volcanic rock debris and ashfall on O’ahu from the volcanoes on Maui and Hawai’i is negligible. Consequently, the only credible volcanic hazard on O’ahu is “VOG,” short for “volcanic gas” or “volcanic smog,” resulting from ongoing eruptions on Hawai’i.

VOG is a term used in Hawai‘i to describe hazy conditions caused by gaseous emissions from Kīlauea Volcano. VOG is created when volcanic gases react with sunlight, oxygen, and moisture. The VOG plumes from Kīlauea contain a variety of compounds, at varying concentrations, which could have adverse impacts on the downwind communities and environment. During slack or southerly winds, the entire island chain can be blanked in VOG. VOG is most prevalent in the winter when Kona winds are most frequent.

Impacts and Mitigation Measures

The Proposed Project will not have an impact on volcanic hazards nor exacerbate the impacts associated with volcanic hazards. Any former volcanoes on O‘ahu are now considered inactive and the probability of eruption on O‘ahu is negligible. Therefore, only neighboring volcanoes on the Island of Hawai‘i and possibly Haleakalā on Maui, which last erupted in the 1700’s, are expected to have any impact on O‘ahu. The main impact from volcanic hazards on O‘ahu would occur from VOG and not sourced from the project site.

VOG impacts are highly dependent on both proximity of the source to the affected area as well as the day-to-day climatic conditions. During trade-wind weather, VOG is carried from the Kīlauea vents is carried toward the southwest, around the southern tip of the island where some is trapped within an eddy system on the Leeward side of the island. Hence, during normal trade-wind conditions the southern and Kona communities on Hawai‘i Island are most heavily impacted by VOG. During slack or southerly winds, the entire island chain can be blanked in VOG. However, due to the short half-life of sulfur dioxide (SO₂) and sulfuric acid in the environment, O‘ahu is not expected to experience the elevated SO₂ levels that may be experienced on Hawai‘i island (DEM, 2020). SO₂ levels are greatly reduced further away or upwind from the vents as the gas disperses and reacts with water to form sulfuric acid and then with ammonia to form ammonium sulfate which is eventually washed or settles out of the atmosphere. The visible “hazy” appearance of VOG is often intensified when the gases and particulate matter combine with high humidity due to the warmer tropical temperatures when brought up from the south. Informational resources on VOG distributions can be found at this website, which provides modeled VOG plume trajectories based on current and projected weather conditions:

<http://mkwc.ifa.hawaii.edu/vmap/>

Other informational resources on VOG and mitigation actions that the public can take to reduce the impacts of VOG can be found at these websites:

<https://vog.ivhhn.org/>

<https://hilo.hawaii.edu/natural-hazards/vog>

3.5 Natural Environment

3.5.1 BIOLOGICAL AND FAUNA RESOURCES

Definition of Resource

Biological resources include species of vegetation, wildlife, fisheries, and habitat. Biological resources discussed in this section include botanical, avian, or mammalian resources of special concern, particularly species listed under federal, or state endangered species law evaluated in Appendix C – *Botanical and Fauna Report*. Also discussed are species considered sensitive, protected, or proposed for protection.

Affected Environment Changes

The affected environment for biological resources described below is based on the biological resources survey report prepared for the EA (in Appendix C) unless otherwise noted (WHALE Environmental Services LLC, January 2023).

Botanical Resources

The Proposed Action site is currently being used and is occupied. The vegetation in this area is non-native grasses and herbaceous plants that are common in disturbed coastal areas throughout the Hawaiian Islands with scattered palm trees and ironwood trees.

Mammalian and Avian Resources

No species of bird or mammal were observed during the point counts in the Proposed Action site. The site is mainly barren of plant materials that would have provided food, shade, cover, or habitat.

Special Status Species

According to the biological resources survey report (Appendix C), the Proposed Action site does not contain any plant or mammal species protected or proposed for protection under either federal or state endangered species programs. This was supported with consultation with USFW, which advised only biological monitoring and a cease-and-desist work

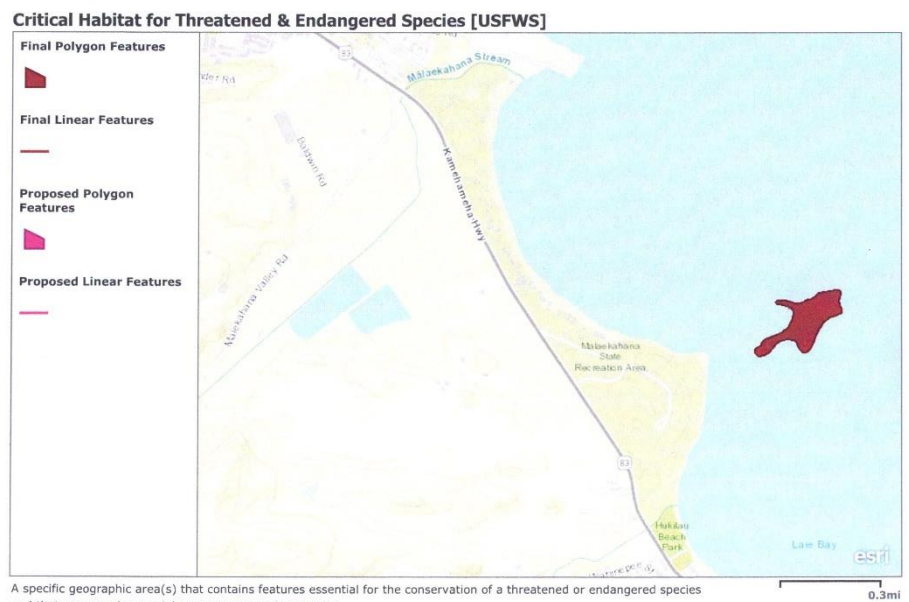
provision if any endangered species were observed and consultation with USFW and DLNR before any further action. This request will be complied with.

Impacts and Mitigation Measures

Unless otherwise noted, this section is based on the Biological Resources Survey, at the site conducted by WHALE Environmental Services LLC, January 2023. The entire site has been intensively disturbed and altered by human activity (e.g. – grass seeding, grading). The Proposed Action will not result in adverse impacts to any plant or animal species currently listed or proposed for listing under federal or state endangered species statutes, because no such species have been found on or near the site according to the recent survey of the proposed site. Bird species were observed outside the project area, none of which are an endangered species.

The Proposed Action site does not include, and would not affect, USFW critical habitat. There would be no significant impact to biological resources under the Proposed Action.

The Critical Habitat Map can be seen here.



City and County of Honolulu, Esri, HERE, Garmin, USGS, METI/NASA, EPA, USDA

Figure 27 - Critical Habitat

To adhere with provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), as amended (ESA) and from information received from USFW with pertinent information in their files, as it pertains to federally listed species in accordance with section 7 of the ESA; the applicant is aware that the following federally listed species *may* occur or *transit* through the vicinity of the proposed project area:

The endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*); endangered Hawaiian petrel (*Pterodroma sandwichensis*), threatened Newell's shearwater (*Puffinus auricularis newelli*), and endangered Hawaii DPS band-rumped storm-petrel (*Oceanodroma castro*) (hereafter collectively referred to as Hawaiian seabirds); the endangered Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian coot, (*Fulica alai*) Hawaiian gallinule (*Gallinula galeata sandvicensis*), and Hawaiian duck (*Anas wyvilliana*) (hereafter collectively referred to as Hawaiian waterbirds).

Hawaiian hoary bat The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage and particularly like ironwood. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away.

To avoid and minimize impacts to the endangered Hawaiian hoary bat the applicant is incorporating the following applicable measure into the project mitigations:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15). Ironwood will be removed after September and before June.
- Do not use barbed wire for fencing. Existing barbed wire fencing will be removed and replaced with wooden fencing. Hawaiian seabirds may traverse the project area at night during the breeding, nesting, and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To avoid and minimize potential project impacts to seabirds the following has been incorporated as applicable mitigation measures:

- Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.
- In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- If water resources are located within or adjacent to the project site, incorporate applicable best management practices regarding work in aquatic environments into the project design (see enclosure).
- Have a biological monitor that is familiar with the species' biology conduct Hawaiian waterbird nest surveys where appropriate habitat occurs within the vicinity of the proposed project site prior to project initiation. Repeat surveys again within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest). If a nest or active brood is found:
 1. Contact the USFW Service within 48 hours for further guidance.
 2. Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.
 3. Have a biological monitor that is familiar with the species' biology present on the project site during all construction or earth moving activities until the chicks/ducklings fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

The same provisions of monitoring for site entry, halt to construction, notification of species presence to USFW and DLNR/DAR and request for guidance will apply to other

species such as monk seals and green sea turtles that may enter the site from near shore waters and beaches.

3.6 Historical, Cultural and Archaeological Resources

Definition of Resource

Significant cultural resources are defined by the National Historic Preservation Act and Chapter 343 of the Hawaii Revised Statutes (HRS). According to the National Historic Preservation Act (NHPA), a historic resource is defined as, “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register...” According to Chapter 343 of the HRS, cultural resources are defined as “cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups.” Chapter 343 requires that the environmental assessment process accounts for cultural resources in determining the significance of impacts that could occur because of a proposed action.

Appendix F contains the Cultural Impact Assessment. Unless otherwise noted, this section is based on the Cultural Impact Assessment prepared by WHALE Environmental Services LLC (WHALE), February 2022. The cultural impact assessment completed by WHALE Environmental Services LLC supports the Project’s environmental review under HRS Chapter 343. WHALE performed a field inspection, historical research, and reviewed past archaeological and paleontological studies and found no significant cultural associations with the site.

An excerpt from that report follows:

Regional Cultural History Malaekahana Ahupua‘a, Ko‘olau Loa Moku District

Ko'olauloa is the northeastern district of O'ahu, from Waimea Bay on the North Shore to Ka'a'awa on the windward coast. ("Ko'olau" means "windward"; "loa" means "long"). The valleys from La'ie to Kahana are well-watered and fertile. The most famous god of this land was Kamapua'a, "Pig-Child," whose home was in the valley of Kaliuwa'a (Sacred Falls) in Kaluanui. The gods Kane and Kanaloa wandered through this district, creating springs and fishing. Fish is abundant; the coastline is also noted for its shark gods and shark men (mano kanaka). According to legend, during the Makahiki festival several Akua (Gods) appeared. Akua Loa traveled in a right circle around the island and Akua Poko journeyed to the left. Eventually, they met at the ahupua'a division between Kualoa and Ka'a'awa. As a result, the names Koolauloa and Koolaupoko were given to the moku to represent the meeting of the

Akua. The ahupua‘a from west to east are Waimea, Keahuohapu‘u, Pupukea, Paumalu, Kaunala (or Peapueo), ‘Opana, Kawela, Hanakao‘e, Kahuku (or Ahumanu), Keana, Malaekahana, Lā‘iewai, Laniloa, Lā‘iemalo‘o, Kaipapa‘u, Hau‘ula (or Lanakila), Mākoa, Kapaka, Kaluanui, Punalu‘u (or Moa‘e), Kahana (or ‘Āhiu), Ka‘a‘awa (or Holopalo), and Ka‘o‘io. In Hawaiian. Malaekahana has been historically known as “Puuhonua” (Place of Refuge). Hawaii is known for its many rains and winds of the islands.

Historical Changes and Map Analysis

For generations following initial settlement, communities in Ko‘olauloa were clustered along the shores which offered sheltered bays from which deep sea fisheries could be easily accessed. The near shore fisheries and coastal fishponds, which were enriched by nutrients carried in the fresh water, also offered opportunities for resource extraction and stewardship. It was in these coastal areas that clusters of houses were found, and where agricultural production first became established. Over a period of several centuries, these areas became populated and perhaps even crowded, and inland elevations began to be used for agriculture and some habitation. Taro would have been the dominant crop in this area with sweet potatoes planted only as a supplement for it (Handy and Handy 1972:282-283). Other crops would have included wauke, noni, gourds, sugarcane, ‘awa, breadfruit, bananas, coconuts, and ti (Stride et al. 2003). Other resources important to subsistence would have been gathered from the sea to the mountains. The period between A.D. 1200–1650 was characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification (Kirch 1985). Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. The concept of the ahupua‘a was established during the A.D. 1400s (Kirch 1985), adding another component to a then wellstratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. Ahupua‘a were ruled by ali‘i ‘ai ahupua‘a or lesser chiefs; who, for the most part, had complete autonomy over this generally economically self-supporting piece of land, which was managed by a konohiki. Ahupua‘a were usually wedge or pishaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986). Entire ahupua‘a, or portions of the land were generally under the jurisdiction of appointed konohiki or lesser chief-landlords, who answered to an ali‘i-‘aiahupua‘a (chief who controlled the ahupua‘a resources). The ali‘i-‘ai-ahupua‘a in turn answered to an ali‘i ‘ai moku (chief who claimed).

Impacts and Mitigation Measures

No surface historic properties were observed during a field examination within or in the immediate vicinity of the Proposed Action. No intact sinkholes, sand dune deposits, or

cultural material were observed within the project area, and none are believed to be present. As a result, the Proposed Action is not anticipated to adversely affect any historic properties. Furthermore, the Proposed Action would have no significant impact on historic properties as none are listed or detected.

Continued consultation with the State Historical Preservation Division (SHPD) will be necessary to determine if archaeological monitoring or other specific measures will be required. **However, in that unlikely event that previously unidentified historical, archaeological, or cultural resources or human remains are encountered, work in the immediate area would cease and notification of the proper authorities, including the State Historic Preservation Division, would occur immediately according to applicable law.**

3.7 – Air Quality

Definition of Resource

Air quality is defined by the concentrations of specific pollutants of concern in the general outdoor atmosphere to which the public has access, with respect to the health and welfare of the general public. These pollutants are generated by many direct and indirect sources such as: Factories and power plants (stationary); automobiles, buses, and planes (mobile); windblown dust and volcanic eruptions (natural), construction and site preparation (fugitive dust).

The United State Environmental Protection Agency (EPA) administers and enforces the Clean Air Act, a federal law that regulates air emissions from stationary and mobile sources. Passed by Congress in 1970, and later amended in 1977 and 1990, this law authorizes EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous, commonly occurring pollutants known as “criteria” pollutants. Thus far NAAQS have been set for six criteria pollutants (40 Code of Federal Regulations [CFR] 50): carbon monoxide (CO); nitrogen dioxides (NO₂); ozone (O₃) with nitrogen oxides [NO_x] and volatile organic compounds [VOCs] as precursors; particulate matter (PM) PM₁₀– less than 10 microns in particle diameter and PM_{2.5}– less than 2.5 microns in particle diameter; lead (Pb); and sulfur dioxide (SO₂). Two types of standards have been established. "Primary standards" set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. "Secondary standards" set limits to protect public

welfare which includes protection against decreased visibility, and damage to animals, crops, vegetation, and buildings. The EPA requires that states monitor the ambient air to determine attainment of the NAAQS and regulate industries that emit these and other pollutants.

In addition to NAAQS, the Hawaii DOH has established State ambient air quality standards (SAAQS) to further protect human health. SAAQS exist for the following pollutants: CO, NO₂, O₃, PM₁₀, Pb, hydrogen sulfide (H₂S), and SO₂. Performance standards exist for volatile organic compounds (VOC) and total suspended particulates (TSP) within HAR and are controlled by permit.

Air Pollutant	Hawaii Standard	Federal Primary Standard	Federal Secondary Standard
Carbon Monoxide 1-hour average 8-hour average	9 ppm 4.4 ppm	35 ppm 9 ppm	None None
Lead 3-month average	1.5 µg/m ³ (calendar quarter)	0.15 µg/m ³ (running 3-month)	Same as primary
Nitrogen Dioxide 1-hour average Annual average	None 0.04 ppm	100 ppb 53 ppb	None Same as primary
Particulate Matter (PM₁₀) 24-hour block average Annual average	150 µg/m ³ 50 µg/m ³	150 µg/m ³ None	Same as primary None
Particulate Matter (PM_{2.5}) 24-hour block average Annual average	None None	35 µg/m ³ 12 µg/m ³	Same as primary 15 µg/m ³
Ozone 8-hour rolling average	0.08 ppm	0.075 ppm	Same as primary
Sulfur Dioxide 1-hour average 3-hour block average 24-hour block average Annual average	None 0.5 ppm 0.14 ppm 0.03 ppm	75 ppb - None None	None 0.5 ppm - -
Hydrogen Sulfide 1-hour average	25 ppb	None	None

ppb = parts per billion by volume
 ppm = parts per million by volume
 µg/m³ = micrograms per cubic meter of air

Chart 2 - Air Quality Standards for Criteria Pollutants (DOH 2013)

Impacts and Mitigation Measures

During the construction of the proposed activities there is expected to be a marginal increase in air pollutants associated with the operation of commercial construction vehicles and the grading of project access roads during construction. These pollutants will be limited to NO₂, HS₂, PM₁₀ and CO, from the operation of construction vehicles; dust from the grading of project access roads; in the form of fugitive dust from vehicle traffic and site grading. This marginal increase will be temporary, and limited in duration to a period of 4-6 months. The laydown staging site will be on the lot. In order to mitigate any potential impacts to air quality, The construction project will proceed with construction under the guidelines of HAR Section 11-60.1-33.

During the operational lifetime of the project, air pollutants will be limited to mobile sources produced by the operation of residential vehicles entering and leaving the site.

Table 3.7 State and National Ambient Air Quality Standards

Pollutant	Unit	Averaging Period	NAAQS	SAAQS
CO	ppm	1-hour	35 ^b	9
		8-hour	9 ^b	4.4
Pb	µg/m ³	Quarterly	1.5 ^h	1.5
NO ₂	ppb	1-hour	100	None
	ppm	Annual	0.053 ^c	0.04
H ₂ S	ppm	1-hour	None	0.025
PM ₁₀	µg/m ³	24-hour	150 ^d	150
		Annual	None ^e	50
PM _{2.5}	µg/m ³	24-hour block avg.	35	None
		Annual	15 ^f	None
O ₃	ppm	8-hour rolling avg.	0.075 ^g	0.08
SO ₂	ppm	3-hour	0.5 ^a	0.5
		24-hour	0.14 ^b	0.14
		Annual	0.03 ^c	0.03
Notes:				
a. Federal Secondary Standard.				
b. Not to be exceeded more than once per year.				
c. Average of all 1-hour values in the year may not exceed the level of the standard.				
d. May not be exceeded more than one day per year.				
e. EPA revoked the annual PM ₁₀ standard effective December 17, 2006, due to lack of evidence				

	linking health problems to long-term exposure. The State still has an annual standard.
f.	The 3-year average of 24-hour values must not exceed the level of the standard.
g.	The 3-year average of the fourth highest daily maximum value must not exceed the level of the standard.
h.	Average of all 24-hour values in any calendar quarter may not exceed the level of the standard.
Source: DOH (2010)	

The marginal increase in emissions from construction activities will occur over a temporary, short-term period of 4 to 6 months. Use of water as-needed for dust control during construction will minimize the potential for visible emissions HAR §11-60.1-32. The Proposed Action will comply with the provisions of HAR §11-60.1-33 on fugitive dust by requiring the contractor to select appropriate measures to comply with the provision.

3.8 - Noise

Definition of Resource

Noise is defined by the EPA as “unwanted or disturbing sound”, and in the HAR as "any sound that may produce adverse physiological or psychological effects or interfere with individual or group activities, including but not limited to communication, work, rest, recreation, or sleep".

While the typical human response to noise pollution is annoyance, Noise pollution can cause stress related illnesses (e.g. high blood pressure, sleep disruption, and lost productivity) and potentially hearing loss, with prolonged exposure. The response of individuals to similar noise events is diverse and influenced by the type of noise; the perceived importance of the noise, and its appropriateness in the setting; the time of day and the type of activity during which the noise occurs; and the sensitivity of the individual. Most environmental noise includes a mixture of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable.

Sound is generally characterized by several variables, including frequency and intensity. Frequency describes the pitch of the sound and is measured in Hertz (Hz), while intensity describes the sound’s loudness and is measured in decibels (dB). Normal speech has a sound level of approximately 60 db. For the purpose of quantify sound for ordinance, sound level is usually expressed by reference to a known standard. Because the human ear is less sensitive to low audio frequencies, a table of octave values are added to the dB sound pressure level to

make the A-weighted scale (dBA). The result is a standard scale relative to the loudness perceived by the human ear, which incorporates both sound intensity and frequency.

In 1970 under the CAA, the EPA established the Office of Noise Abatement and Control (ONAC) with the purpose of performing studies on noise and its effect on the public health and welfare. In 1972 Congress passed the Noise Control Act, followed by the Quiet Communities Act in 1978. By 1981 the EPA concluded that noise issues were best handled at the State and local level. The Hawaii DOH is the State administrator of noise control ordinance in Hawaii. The DOH has set maximum permissible sound levels (specified in HAR §11-46-4), which cannot be exceeded beyond the source's property line. These maximums vary based on zoning district, being the highest for industrially zoned parcels. These noise limits apply to "stationary noise sources; and equipment related to agricultural, construction, and industrial activities". "Construction equipment" means any device designed and intended for use in construction, including but not limited to any air compressor, pile driver, bulldozer, pneumatic hammer, steam shovel, derrick, crane, tractor, grader, loader, power saw, pump, pneumatic drill, compactor, on-site vehicle, and power hand tool (HAR §11-46-4(a)).

Table 3.8 Hawai'i Administrative Rules §11-46 Noise Limits

Zoning District	Noise Limit (in dBA)	
	Daytime (7:00 am to 10:00 pm)	Nighttime (10:00 pm to 7:00 am)
Class A: Areas equivalent to lands zoned residential, conservation, preservation, public space, open space, or similar type.	55	45
Class B: All Areas equivalent to lands zoned for multifamily dwellings, apartment, business, commercial, hotel, resort, or similar type.	60	50
Class C: All Areas equivalent to lands zoned agriculture, country, industrial, or similar type.	70	70

Construction noise is generated by the use of heavy equipment and portable powered tools on job sites and is generally considered temporary. The noise can vary greatly in overall duration and aggregate magnitude depending on the construction processes or activities being conducted, the type and condition of equipment used, the layout of the construction site and the proximity of sensitive receptors. Generally, construction noise levels primarily represent the acoustical contribution of two categories of dominant sources: impact devices (e.g., jackhammers, pile drivers) that produce high amplitude impulsive, and large engine-driven equipment and vehicles (e.g., bulldozers, backhoes, dump trucks) that produce noise as they idle, move, or utilize engine power to perform a function.

Operation and maintenance noise refers to the sounds produced by the completed project (i.e., post-construction) under typical conditions and includes activities, equipment, and building systems that may occur either during the day, night, or continuously.

Impact and Mitigation Measures

The existing environment is characterized by relatively high noise levels associated with the general traffic on Kamehameha Highway on the west side of the site, other residential-associated noises in the area and ocean-generated noise from wave action or activity in the nearby beach parks.

Grading and construction will involve the use of excavators, trucks, and other heavy equipment. Some of the construction equipment is inherently noisy. Construction related noise from those sources will be short term, less than 2 months.

The greatest source of typical day and nighttime noise is generated by vehicle traffic along Kam Highway or perhaps marine activity in the marine activities, which is expected to be the secondary source of noise in the affected environment. A tertiary source of noise is the Gunstock Ranch which frequently has sounds from operations creating noise, though this is rare. Kahuku Training Area military excursions are usually over Turtle Bay Resort and do not use the flight path usually.

Construction noise impacts will be mitigated by compliance with provisions of the State DOH Administrative Rules, Title 11, Chapter 46, “Community Noise Control” regulations. These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels stated in the DOH Administrative Rules. It shall be the contractor’s responsibility to minimize noise by properly maintaining noise mufflers

and other noise-attenuating equipment, and to maintain noise levels within regulatory limits. Also, the guidelines for heavy equipment operation and noise curfew times, as set forth by the DOH noise control rules, will be adhered to; or, if necessary, a noise permit shall be obtained. In the long-term, operation of the Proposed Project is not anticipated to result in adverse noise impacts. The site is currently Class A zoned.

3.9 Hazardous Materials

Definition of Resource

The degree to which any given material or waste is deemed hazardous depends on its potential to pose a threat to human health or to the environment. The Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) define hazardous substances as those which can be severely harmful to human health and the environment. Many substances defined as hazardous are harmless in their normal uses but dangerous when released. Under the federal Resource Conservation and Recovery Act (RCRA) hazardous waste is defined as a solid waste which, because of its quality, concentration, or other characteristic may cause or contribute to impacts to human health or to the environment that are specified in the law. Substances are defined as hazardous under CERCLA, RCRA, and other federal laws. Appendix D holds the *Environmental Site Assessment (ESA)* Phase I Hazmat files.

Construction activities associated with the implementation of the Proposed Action improvements may involve the use of materials and processes that involve chemical agents or materials typical to construction that could be considered hazardous. These materials are primarily associated with vehicle and/or equipment maintenance that typically include flammable and combustible liquids, acids, aerosols, batteries, corrosives, solvents, paints, and hydraulic fluids.

Impacts and Mitigation Measures

No significant impacts are anticipated to result from the Proposed Project with regards to hazardous materials. As noted above, a Hazardous Material Survey was conducted prior to any construction activities. This survey identified any potential hazardous materials and recommended appropriate mitigation measures to manage and dispose of the hazardous materials. These remediation activities would comply with all established regulations and

procedural guidelines. Design features specific to the reduction of the potential effects of hazardous spills will be implemented, where appropriate. No significant impacts to hazardous waste disposal are anticipated to result from the implementation and operation of the Proposed Project.

Hazardous substances are controlled in the United States primarily by laws and regulations administered by the EPA, OSHA, and USDOT. Each agency incorporates hazardous substance safeguards according to its unique Congressional mandate. EPA regulations focus on protection of human health and the environment. OSHA regulations are designed primarily to protect workplace health and safety, and DOT regulations promote the safe transportation of hazardous substances used in industry and commerce.

As stated in the ESA Phase I HazMat Report located in the Appendix D, WHALE Environmental Services, LLC has determined that there has been no negative impact from past use that would raise any concerns related to hazardous materials or waste to affect current activities. The Phase One Historical Review report may be found in Appendix D.

3.10 Traffic

Surrounding Roadway Network

The Project Site is located at 56-157 Kamehameha Highway, a main drive of the subdivision of the project. The driveway entrance will be off the side road, private common driveway, to assist in avoiding traffic issues.

Transportation Facilities

Transit within the vicinity of the Project Site is provided by “The Bus” which is operated by the O’ahu Transit Service (OTS) for the City and County of Honolulu Department of Transportation Services. There are 1 bus stop locations within a quarter mile radius of the Project Site.

Bike Facilities

In the vicinity of the Project Site, there are bike paths or facilities across the street in the Kam Highway, which is popular and used,. There are no crosswalks or curb ramps along this locus stretch of the subdivision and there is no parking allowed as well on main roads

of the subdivision. There are no sidewalks and street lighting along the sides of the roads of the common driveway.

Parking Facilities

All parking for the project site is contained within the lot, as shown on the plans found in Appendix A. There is level parking space for vehicles, with parking spaces for residential parking next to the dwellings on the property.

Impacts and Mitigation Measures

Therefore, the Proposed Project is expected to result in a slight increase of vehicle trips to the Project Site. Short term will be the influx of construction vehicles. Long term use will be the owners and their family, but the property will be a new family residences where the Zuccos will use as a permanent residence with separate family quarters. Accordingly, long-term transportation impacts are not anticipated as occupants of the site will be limited to the same use as elsewhere in habituating North Shore. Most of the potential traffic impacts would be short-term, occurring during the construction of the facility, and would be caused by construction traffic. These would be temporary impacts, only occurring during construction. These impacts would no longer occur once the Proposed Project is complete. Potential traffic impacts associated with construction vehicles, construction workers, and construction parking demand would be mitigated through a construction traffic management plan developed by the builder which would include construction schedule notification to fire and police departments. The construction traffic management plan would identify appropriate parking areas for construction workers and constructions vehicles that will park within the project area and, thus will not affect traffic flow along the adjoining roadway except while traveling to and from the Project Site. Construction contractor(s) will be required to mitigate potential vehicular and pedestrian traffic impacts through appropriate traffic control measures and safety devices. Examples of such measures that may be implemented include:

- Providing barriers, cones, signage, lighting, non-skid covering over trenches, adequate and safe sidewalk widths, adequate intersection visibility and other provisions to promote safe passage of vehicles and pedestrians through the construction zone's entrance;
- Restricting transport of construction vehicles during school and commuter peak traffic hours;

- Notifying providers of emergency services (fire, ambulance, police) prior to implementation of any required detours or street closures;
- Coordinating with the City Department of Transportation Services (DTS) and O‘ahu Transit Services of any detours or street closures; and,
- Providing appropriate barriers as necessary to deter the public from unauthorized entry into restricted or hazardous construction zones during working and nonworking hours.

3.11 Visual Resources

Visual resources are public in nature and include views of a project to and from neighboring scenic resources. When evaluating scenic quality, both natural and manmade components of the existing visual environment should be collectively considered. These components may be evaluated in terms of whether each contributes or detracts to the overall scenic landscape character. In turn, this evaluation contributes to the assessment of scenic quality levels, which are established by evaluating the distinctiveness and diversity of a particular landscape setting. Public concern over adverse visual impacts is also an important part of the visual impact assessment process. Public concerns over the visual impacts associated with a project are often directly connected to the size and scale of a project. Additionally, the number and presence of people or activities nearby will further inform the level of concern for impacts to the existing scenic quality of the area. Visual impacts associated with a project can be evaluated in the following objective terms: form, line, color and texture. Such terms are used to measure the existing scenic quality and proposed scenic quality with the addition of the project. This methodology allows for an objective assessment of visual resources. The visibility of a project determines how the Project will be seen from particular viewing areas, which directly relates to the level of concern nearby viewers will have. In general, however, perception of details relating to form, line, color, and texture diminishes with increasing distance.

Impacts and Mitigation Measures

The Proposed Action site is currently a occupied site within a developed subdivision. The topography of the site is relatively slightly sloping with limited views of the shoreline due to the high coastal bank and is located adjacent to the common similar properties.

A band of other screened frontages of residences along the side of Kamehameha Highway prevent site views from the site to the ocean. The lot distance makes visual views of the ocean difficult and there is a large coastal bank above the beach. There are no viewsheds identified in this region in the KSCP or the 1987 viewshed study.

3.12 Socio-Economic Characteristics

Definition of Resource

Socio-economic resources and characteristics refer to the social and economic qualities of the human environment, such as demographic characteristics, employment and income-generating activities, and the ways in which people live, relate to one another, organize to meet their needs, and engage in leisurely activities.

The CCH accounts for 68.8% of the State's total resident population, down from 69.7% just a few years ago. Based on the latest population projections, Honolulu's population is expected to continue climbing, but at a slower rate than the other counties. By 2045, the county is projected to be home to nearly 1.074 million residents. However, the average annual growth rate is predicted to slow from 0.4% between 2020 and 2030 to 0.1% by 2045. The projected population increases will result in increased demand for housing and public services across the island.

The project site lies in the *Urban* State Land Use zone, and the City and County of Honolulu classification is R5 - Residential.

The population of Oahu was 953,207 in 2010 (U.S. Census 2010) and 1, 106, 508 in 2020. The town nearest the Proposed Action site is Laie, located approximately 1.5 miles to the south. The population of Laie was 5963 in 2020 (U.S. Census 2020) with a 2000 census of 4583. Most of its population is related to Brigham Young University. The median income for a household in the CDP was \$50,875, and the median income for a family was \$59,432. Males had a median income of \$40,242 versus \$26,750 for Females.

Impacts and Mitigation Measures

No significant impacts are anticipated to result from the construction or operation of the Proposed Project. In the short- term, construction expenditures related to the Proposed

Project will provide positive benefits to the local economy. This would include creation of construction and construction support jobs, and the purchase of materials from local suppliers, as well as indirect benefits to local retail businesses resulting from construction or residential activities. In the long-term, the project meets the goals of remaining zoned for shoreline use, common to the goals of the Oahu General Plan and the Koolaulua Sustainable Community Plan and would house a single family and transient construction workers during construction.

3.13 Public Services and Facilities

3.13.1 Police, Fire and Medical Services

Police protection is provided by the City's Honolulu Police Department. The Project Site is serviced by the Honolulu Police Department's District 4 – Kahuku to Kaneohe. The Honolulu Fire Department provides emergency service to the region from its Hauula Fire Station located approximately 5.6 miles south on the Kamehameha Highway. The nearest full-service hospital is Kahuku Hospital, approximately 2.0 miles from the Project Site. Emergency medical service is provided by the City's Emergency Services Department, Emergency Medical Services (EMS) Division located in the fire station.

Impacts and Mitigation Measures

In the short- and long-term, no significant impacts on police, fire, and medical services are anticipated. In the long-term, the Proposed Project may require occasional police and fire protection, as well as medical services, however it would likely not represent a significant amount relative to the overall regional demand. The Proposed Project will be designed and built-in compliance with the applicable County fire code requirements.

3.13.2 Education

There are three schools in the Kahuku region – two public and one private. Laie Elementary School on Kamehameha Highway services children K-7. Kahuku Intermediate and High School on Kamehameha Highway services children 7-12. Brigham Young University is a private college servicing adults in pursuit of college degrees.

Impacts and Mitigations

The Proposed Project Action is not anticipated to affect any of the educational facilities. The project site population is not expected to utilize the schools.

- **Recreational Facilities**

Definition of Resource

Recreational resources offer opportunities for residents and visitors to engage in leisurely activities. Recreational resources include parks and open space as well as other infrastructure facilitating leisurely activities on land or water, such as piers and arbors. Recreational resources offer opportunities such as hiking, fishing, beachcombing, spelunking, and boating. Recreational opportunities and resources are important to economic activity and quality of life. Recreational resources in the vicinity of the Proposed Action under consideration include the following parks and other recreational infrastructure within the

nearby towns of Kahuku and Laie and along the shoreline (relative to the Proposed Action):

- Ocean – accessible by nearby beach access easement(s).
- Malaekahana Recreational Area within ½ mile of the site
- Kahuku Golf Course within ½ mile of the site
- Hukilau Beach Park in Laie town
- Gunstock Ranch – horseback rides and tours
- Climb works – zip line • Ocean – accessible by nearby beach access easement(s).
- Malaekahana Recreational Area within ½ mile of the site
- Kahuku Golf Course within ½ mile of the site
- Hukilau Beach Park in Laie town
- Gunstock Ranch – horseback rides and tours
- Climb works – zip line

Impacts and Mitigation Measures

No significant impacts are anticipated to occur from the construction or operation of the proposed project.

3.13.4 Solid Waste

Solid waste collection and disposal service is provided by the ENV for incineration at the Campbell Industrial Park H-POWER Plant that generates electricity, followed by disposal of ash and non-combustibles at the Waimanalo Gulch Sanitary Landfill. Construction and demolition material is disposed of at the privately-owned PVT landfill in Waiʻanae.

Impacts and Mitigation Measures

No short-term or long-term significant impacts to municipal solid waste collection and disposal facilities are anticipated because of the construction and operation of the proposed project. Green slash resulting from the operation or trimming of production of plant stock is expected to be brought to the Kahuku Waste station on Kamehameha Highway.

3.13.5 Infrastructure and Utilities

3.13.5.1 Water System

Water for domestic use and fire protection is provided to the project site and surrounding area through private wells water system which draws only from groundwater sources.

Impacts and Mitigation Measures

No short- or long-term significant impacts are anticipated to result from the development and operation of the Proposed Project. On-site water system improvements will be required to accommodate the Proposed Project. The final line size and location will be determined during the design phase of the project.

Connections and improvements will be confirmed when construction drawings for the Proposed Project are developed and submitted to DPP Building Dept. for review and approval. It is anticipated that the connection would be using the existing connection to the site's current use.

3.13.5.2 Wastewater System

The site is served by a private septic system for which a tie-in application is being developed. There is no public sewage in this region.

Impacts and Mitigation Measures

No significant impacts are anticipated on the existing wastewater system because of the construction and operation of the Proposed Project.

3.13.5.3 Drainage System

There is no drainage system on the site or in this section of the subdivision. All drainage on the site will be through evaporation or percolation. The surrounding roads' paved asphalt surfaces direct runoff to the roadsides where it also percolates or evaporates.

Impacts and Mitigation Measures

No short- or long-term significant impacts on the quantity or quality of drainage in the project vicinity are anticipated during construction or operation of the Proposed Project. Construction of the Proposed Project will not involve major land disturbing activities that will significantly alter site contours. Applicable erosion control measures and best management practices will be implemented to mitigate any possible adverse effects relating to runoff. As applicable for each phase, these may include but are not limited to temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping also will be done as soon as possible on completed areas to help control erosion. Permanent sediment control measures will be used once construction is completed. More details can be found in the *Erosion and Sedimentation Control Plan* found in Appendix E.

3.13.5.4 Electrical and Communications Systems

Electrical power on the island of O'ahu is provided by Hawaiian Electric Company (HECO). Telephone service in the area is provided by Hawaiian Telcom. Spectrum is the local CATV provider in the region and also offers telephone service.

Impacts and Mitigation Measures

In the short- and long-term, the proposed project is not anticipated to impact or increase overall demand for electrical and communication systems in the area.

CHAPTER THREE – DESCRIPTION OF EXISTING ENVIRONMENT, IMPACTS, AND MITIGATION MEASURES

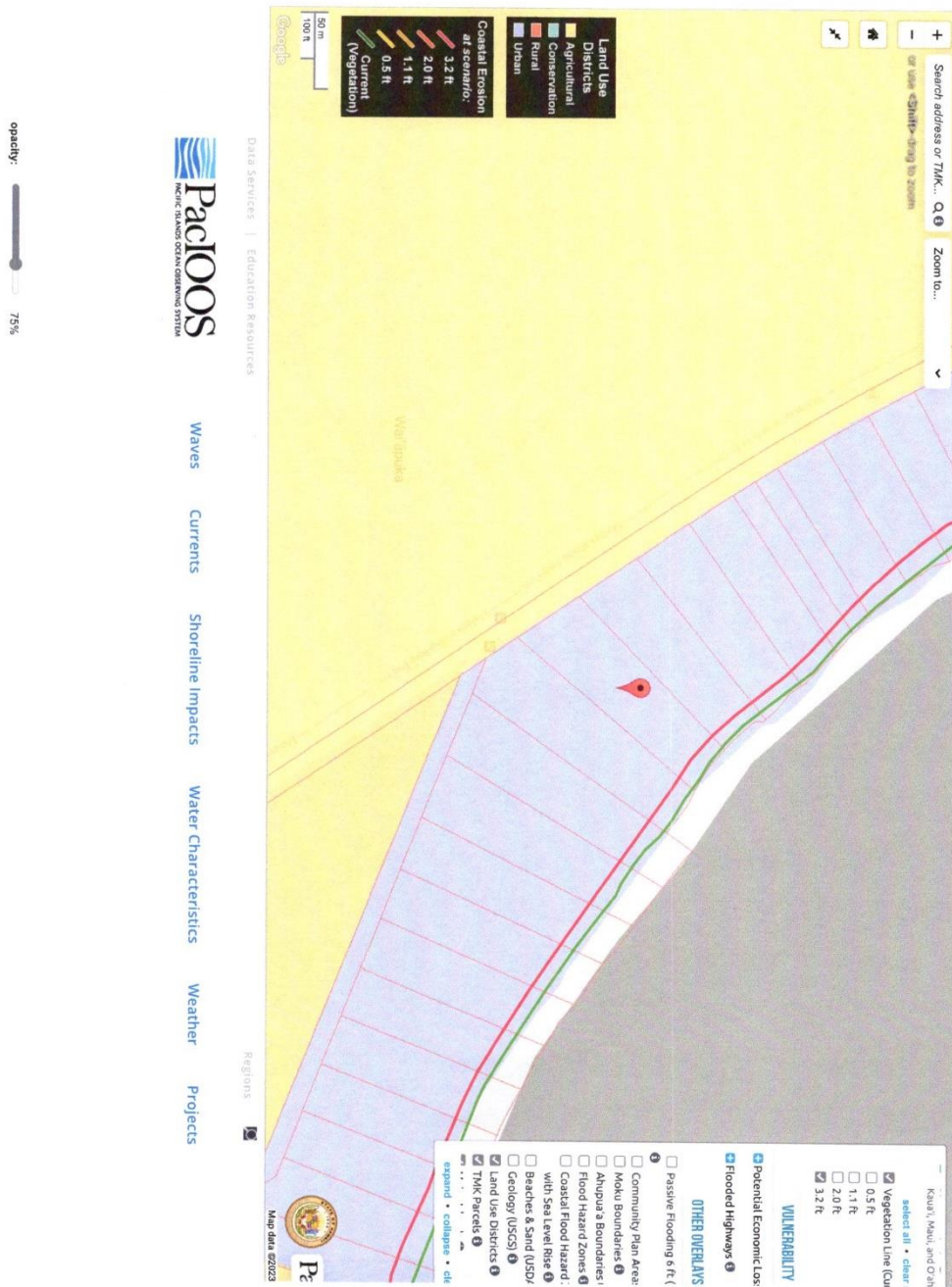


Figure 28 - Zoning

Zoning Map – R5

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Chapter Four

**RELATIONSHIP TO PLANS,
POLICIES, and CONTROLS**

4. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

Pursuant to HAR Section 11-200.1-24, this section describes the relationship of the Proposed Project to “*land use and natural or cultural resource plans, policies, and controls for the affected area.*” Discussed is how the Proposed Project “*may conform or conflict with objectives and specific terms of approved or proposed land use and resource plans, policies, and controls, if any, for the affected area.*”

Where a conflict or inconsistency exists, described is the extent to which the Proposed Project has been reconciled “*with the plan, policy, or control, and the reasons why*” the proposing entity (Sea Turtle Estates LLC Property) “*...has decided to proceed, notwithstanding the absence of full reconciliation.*” To facilitate describing the relationships of the Proposed Action to the numerous land use and natural or cultural resource plans, policies, and controls for the affected area, some of those plans, policies, and controls are presented in tabular form, and are described with text and/or the following letter code:

S = Supportive, NS = Not Supportive, N/A = Not Applicable

4.1 Land Use Plans and Policies – O‘ahu General Plan and North Shore Sustainable Communities Plan

4.1.1 O‘ahu General Plan

The General Plan for the City and County of Honolulu is a comprehensive statement of objectives and policies that sets forth the long-range aspirations of O‘ahu’s residents and the strategies to achieve them. It is the first tier of and lays the foundation for a comprehensive planning process that addresses physical, social, cultural, economic, and environmental concerns affecting the City and County of Honolulu. This planning process serves as the coordinative means by which the City government provides direction to the population projected for O‘ahu. The City’s planning process is comprised of three distinct tiers. As the first tier of planning, the General Plan establishes policy guidance for O‘ahu as a whole, with all subsequent community development plans, policy plans, and implementing regulations of the City and County of Honolulu required to be consistent with the General Plan. The second tier consists of the eight regional Development Plans (DPs) and Sustainable Communities Plans (SCPs). These plans relate to specific regions of the island, and

(1) conceptually describe the pattern of land use desired for the region,

- (2) provide guidance for functional infrastructure planning, and
- (3) identify areas within the DP/SCP boundary that might benefit from more detailed planning.

The third tier is comprised of the specific mechanisms to implement the two higher levels of the planning hierarchy. These include the implementing ordinances and regulations (i.e., the Land Use Ordinance and Zoning Maps, the Subdivision Rules and Regulations, and the City's Capital Improvement Program), public facilities and infrastructure functional plans, and special area plans that give specific guidance for specific portions of a DP or SCP area.

Specific consistency with the Oahu General Plan policies is as follows:

Population

Objective A – To plan for anticipated population in a manner that acknowledges the limits of O‘ahu’s natural resources, protects the environment, and minimizes social, cultural, and economic disruptions.

Policy 3 Seek a balanced pace of physical development in harmony with the City's environmental, social, cultural, and economic goals by effecting and enforcing City regulations.

Policy 5 Support family planning and social equity.

Finding: The project would increase the population in this area by a negligible amount. The project would also allow family planning for a family ohana “gathering place” home for family.

Objective B – To establish a pattern of population distribution that will allow the people of O‘ahu to live, work and play in harmony.

Policy 3 Manage land use and development in the urban-fringe and rural areas so that:

- a. Development is contained within growth boundaries; and
- b. Population densities in all areas remain consistent with the character, culture, and environmental qualities desired for each community.

Policy 4 Direct growth according to policies by providing development capacity and needed infrastructure to support a distribution of O‘ahu's resident population that is consistent with the table seen in the Oahu General Plan – page 20 of the OGP:

Finding: The project would adhere to land use and development in urban areas. As the Zuccos already occupy the property on a seasonal basis on Oahu and in the Malaekahana region, there will be no change in permanent population on the North Shore or Windward Shore (Malaekahana forms the boundary between two regions – Kahuku and Laie).

Balanced Economy

Objective A: To promote diversified economic opportunities that enable all the people of O‘ahu to attain meaningful employment and a decent standard of living.

Policy 7 Explore and encourage alternate economic models that reflect traditional cultural values and improve economic resilience, i.e., subsistence, barter and a culture of reciprocity and sharing

Finding: The project would promote a culture of reciprocity and sharing by keeping the Zucco family to their usual community.

Environment

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 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 O‘ahu’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 6 Design and maintain surface drainage and flood-control systems in a manner which will help preserve natural and cultural resources.

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 Hawai‘i and O‘ahu and protect their habitats.

Policy 9 Increase tree canopy and ensure its integration into new developments and protect significant trees on public and private lands.

Policy 12 Plan, prepare for, and mitigate the impacts of climate change on the natural environment, including strategies of adaptation.

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

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

Finding: The proposed project is in full agreement with these policies and adheres to the guidelines presented in each. The Zucco family has addressed these policies by enhancing sustainability efforts, protecting unique species, avoiding the shoreline, planning for adaptation to new climate change strategies, etc...

Housing To ensure a balanced mix of housing opportunities and choices for all residents at prices they can afford.

Objective A

Policy 2 Streamline approval and permit procedures, in a transparent manner, for housing and other development projects.

Policy 3 Encourage innovative residential developments that result in lower costs, sustainable use of resources, more efficient use of land and infrastructure, greater convenience and privacy, and a distinct community identity.

Policy 10 Promote the design and construction of dwellings which take advantage of O‘ahu's year-round moderate climate and use other sustainable design techniques.

Finding: Strong support for these policies. The project is designed with sustainability in mind and the Zuccos will continue to be a part of the distinct Maleakahana community.

Transportation

Finding: Not applicable to the Proposed Action

Energy Systems

Finding: Not applicable to the Proposed Action

Physical Development and Urban Design

Objective E To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live.

Policy 4 Maintain rural areas that reflect an open and scenic setting, dominated by small to moderate size agricultural pursuits, with small towns of low-density and low-rise character, and which allows modest growth opportunities tailored to address area residents' future needs.

Policy 5 Encourage the development of a variety of housing choices including affordable housing in rural communities, to give people the choice to continue to live in the community that they were raised in.

Policy 6 Ensure the social and economic vitality of rural communities by supporting infill development and modest increases in heights and densities around existing rural town areas where feasible to maintain an adequate supply of housing for future generations.

Objective F To create and maintain attractive, meaningful, and stimulating environments throughout O'ahu.

Policy 3 Require developments in stable, established communities and rural areas to be compatible with the existing communities and areas.

Policy 9 Recognize the importance of using Native Hawaiian plants in landscaping to further the traditional Hawaiian concept of mālama 'āina and to create a more Hawaiian sense of place.

Objective G To promote and enhance the social and physical character of O'ahu's older towns and neighborhoods.

Policy 1 Encourage new construction in established areas to be compatible with the character and cultural values of the surrounding community.

Policy 6 Support and encourage cohesive neighborhoods which foster interactions among neighbors, promote vibrant community life, and enhance livability.

Finding: The Proposed Action meets these requirements; the Zuccos will remain in the urban fringe community they reside in and are building in compatibility with the surrounding communities.

Public Safety and Community Resilience

Objective B To protect residents and visitors and their property against natural disasters and other emergencies, traffic and fire hazards, and unsafe conditions.

Policy 2 Require all developments in areas subject to floods and tsunamis, and coastal erosion to be located and constructed in a manner that will not create any health or safety hazards or cause harm to natural and public resources.

Finding: The Proposed Action is constructed in such a manner as to address flooding concerns and will not create any hazards or cause harm to natural resources.

Health and Education

Finding: Not applicable to the Proposed Action

Culture and Recreation

Finding: Not applicable to the Proposed Action

Government Operations and Fiscal Management

Finding: Not applicable to the Proposed Action

The following pages are a summary table of the Proposed Action relationship to the Oahu General Plan. It highlights the Proposed Action overall relatability to the 11 major areas of the Oahu General Plan.

4.1.1 - Oahu General Plan	S	NS	NA
<p>GOALS - The General Plan is a guide for all levels of government, private enterprise, neighborhood and citizen groups, organizations, and individual citizens. It is intended to guide land use and development decisions and to influence actions in 11 key areas</p>			
<p>(1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations</p>	X		
<p>(2) A desired and sustainable physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well being of the people.</p>	X		
<p>(3) Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life</p>	X		
<p>Discussion: The Proposed Project will support the Oahu General Plan goals, for present and future generations, to ensure individuals and groups may approach their desired levels of self-reliance and self-determination. The Proposed Project will support the State of Hawai'i economy by providing the creation of construction, construction support jobs, and the purchase of materials. The Proposed Project will provide an enhanced family opportunity with elements that provide for a better socio-economic well-being and community integration.</p>			
<p>OBJECTIVES AND POLICIES - A future which is sustainable is also of great importance for an island community interested in the current and future well-being of its people. The principles of sustainability recognize that there are limits to the complex network of systems (environmental, economic and social) that define our lifestyles and overall well-being. A sustainable Honolulu means having the capacity to support the current generation's basic resource needs without compromising the ability of future generations to meet their own needs. To do this, the City shall seek to find the appropriate balance and synthesis of the major elements of sustainability that are essential to the creation of a sustainable place.</p>			
<p>OBJECTIVES AND POLICIES - POPULATION</p>			
<p>The first is to provide for our existing and anticipated population in a manner that respects the limits of O'ahu's natural resources, protects the environment, and minimizes social, cultural, economic, and environmental disruptions. This includes the active management of tourism to prevent visitor impacts from overwhelming the quality of life for our island community</p>	X		
<p>The second is to maintain a pattern of population distribution that will allow people to live, work, and play in harmony</p>	X		

Discussion: The Proposed Project will support the Oahu General Plan goals, for present and future generations, to ensure individuals and groups may approach their desired levels of self-reliance and self-determination. The Proposed Project will support the objective of protecting the environment and avoiding or mitigating impacts. The intent to use Hawaiian-based landscaping plants keeps to the Hawaiian theme of communities.

BALANCED ECONOMY

The objectives and policies for balanced economic activity attempt to address the needs for an adequate standard of living, an improved quality of life for residents and future generations, and a diversified economy that advances O’ahu’s long-term sustainability. Critical issues include varied employment and advancement opportunities, living wage jobs, viability of both major industries and small businesses, the location of jobs, inclusion of flexible and remote work, and diversification of the economic base to ensure its resiliency to changes in global conditions. Policies address what government can do to provide, encourage, and promote economic opportunities, and reduce economic inequity for our residents. An innovative, sustainable, and technologically savvy economy that respects our unique traditions and cultural values will advance an equitable economic future.

X

Discussion: The Zuccos will continue to bring sustainability efforts to the community

NATURAL ENVIRONMENT AND RESOURCE STEWARDSHIP

The natural environment, next to the island’s people, is O’ahu’s greatest asset. Protecting the island’s natural resources and environmental quality is essential to ensuring the long term health and well-being of the community. O’ahu’s array of biologically rich and diverse ecosystems, year-round temperate climate, beautiful mountains, beaches, scenic vistas, and freshwater and marine environments are enjoyed by all. However, these precious resources that are fundamental to O’ahu’s lifestyle and economy are also adversely impacted by climate change, and in some cases the ill-effects of overuse. The City's policies seek to protect and enhance O’ahu’s natural beauty and environment by increasing public awareness and appreciation, and by mitigating against the degradation of these assets. The objectives and policies recognize the importance of protecting the natural environment for current and future generations.

X

HOUSING AND COMMUNITIES

Obtaining decent, reasonably priced housing in safe and attractive neighborhoods has been a persistent problem for the residents of O’ahu, and is a primary concern of the General Plan. This section recognizes the importance of diverse communities that are well-integrated with transportation, the surrounding land uses, and the natural environment, and that include housing and access to schools, services, amenities, and job opportunities. The objectives and policies for housing seek to ensure a wide range of housing opportunities and choices and to increase the availability of affordable housing, including at the lowest income levels, and meet City and State affordability goals; to encourage higher-density housing via mixed-use and transit-oriented developments in rail station areas; to encourage infill housing where permitted; to increase the use of sustainable building designs and techniques; to reduce speculation in land and housing; and to address issues associated with homelessness so that all people have decent and stable housing options.

Discussion: The Project is not in an urban district with access to rail and does not address homelessness issues or other housing issues.

TRANSPORTATION AND UTILITIES

Moving quickly toward a safe, efficient, and cost-effective multi-modal transportation system that is not dependent on fossil fuels and generates far less greenhouse gas emissions is essential to the environment, economic prosperity, and quality of life. The cost of building and maintaining the various elements of a comprehensive transportation system to service the island is a major public investment. Coordinated planning of accessibility and circulation requirements and integration of the island's transportation network within existing and planned developments is important in the effective management of urban growth and in meeting the community's daily needs. The transportation objectives and policies address the need for a balanced ground transportation system that allows safe, comfortable and convenient travel for all users, including pedestrians, micro-mobility users, bicyclists, public transit riders, and motorists. The airports and harbors are State facilities and are under State jurisdiction. The City’s role is limited to align and regulate surrounding land uses, provide connectivity to these key facilities, and process certain needed permits. Population growth results in increased demands for water, sewerage, recycling, and solid waste disposal services provided by government, as well as the communication, electricity, and other utility systems provided by the private sector. When meeting such needs, the social, economic, and environmental consequences must be carefully considered at all decision points. Reliability, cost-effectiveness, and capacity are necessary attributes of a highly functioning utility system. In addition to emphasizing the importance of these attributes, the objectives and policies for utilities emphasize the need for efficient and dependable transmission and service, adequate supplies of water, and environmentally sound waste disposal systems.

X

X

Discussion: The Proposed Action is not related to transportation or utilities issues or activities. By filing this DEA and subsequent SMA, Sea Turtle Estates LLC is adhering to meeting the CCH goals of regulation and permitting requirements.

ENERGY SYSTEMS

There is no more salient example of the direct impact of changing global conditions on an island community than the provision of energy and the attendant dangers of escalating global warming and the volatility of global energy supply chains. With more than 90 percent of O'ahu's electrical and transportation needs powered by imported fossil fuels, achieving energy self-sufficiency is a critical component of achieving sustainability. Our health and livability, even in the most urban area, directly depend on the health and integrity of natural ecosystems. Our island's achievement of 100 percent renewable energy and renewable transportation must include increasing the resilience of our energy grid, protecting agricultural productivity, enhancing community trust, and guarding against the most hazardous impacts of climate change. Policies have been revised to support net zero to net positive performance in the areas of energy, low carbon emissions, waste streams, all utilities, and food security.

Discussion: The Development of a new family homes does not create emissions or use much energy. Positive factors are that the over 1/2 of the site will be green plants that filters carbon dioxide and regenerates oxygen. Power will likely be PV based and not totally reliant on the grid.

PHYSICAL DEVELOPMENT AND URBAN DESIGN

Physical development and urban design are concerned with the management of growth and the quality of life that occur within the various parts of the island. The objectives and policies in this area are concerned with the coordination of public facilities and land development, compatibility of land uses, and specification of certain land uses at particular locations. It also deals with creating active, vibrant communities linked not only physically but digitally, and through social media and other forms of technology to promote public participation in the planning process in ways that engage our increasingly digital society. New policies also emphasize the need to recognize and prepare for the current and even greater long-term impacts of climate change. Urban design emphasis is contained in objectives to create and maintain attractive, meaningful, and stimulating environments, and to promote and enhance the social and physical character of O'ahu's older towns and neighborhoods. Given the population distribution reflected in the General Plan, it is intended that rural centers be allowed incremental growth over time, providing for generations to remain in their hometowns and maintain the economic viability of our rural and suburban communities. The General Plan now also contains an objectives on climate change and sea level rise, and the continued need to plan for and mitigate associated impacts. It calls for all public and private organizations to prepare for problems caused by rises in sea level, rises in groundwater levels, more frequent and severe storms, shifts in local rainfall patterns, increased flooding, and higher urban temperatures. The State and the City have adopted strategies and plans that guide the response to climate change.

X

Discussion: The Proposed Project has meet all strategies and plans that respond to potential climate change issues and events.

PUBLIC SAFETY AND COMMUNITY RESILIENCE

Many of the City's services derive from the concern for the safety of the people. The prevention and control of crime and maintenance of public order are one aspect of public safety. The City's policies reflect the roles of the citizen, and the City, State, and federal governments in providing for the safety of residents and visitors. Another aspect deals with the protection of people and property from natural disasters and other emergencies, traffic and fire hazards, and other unsafe conditions. This includes creating resilient, disaster-ready communities that are mentally and physically prepared for disasters and environmental stressors including those driven by climate change.

X

Discussion: The Proposed Project does not affect or interact with public safety outside of ensuring a fit with flooding prevention and climate change mitigation strategies and poses no traffic, fire hazards, or unsafe conditions

HEALTH AND EDUCATION

Public health and health care services are a joint State, City, and private sector responsibility. The City provides ambulance services, regulates hospital structures, helps to enforce the State health code, and promotes healthy lifestyles. New policies promote active lifestyles, enhance personal health, and support age-friendly cities so that people of all ages and abilities can thrive. Objectives and policies for education call for a wide range of educational opportunities, development of employable skills, efficient use of facilities and appropriate facility location, and the promotion of Honolulu as a center for higher education in the Pacific. A new education policy also calls for recognizing Honolulu's status as an international Pacific crossroads, and another encourages outdoor learning opportunities and venues that reflect O'ahu's unique natural environment and Native Hawaiian culture.

Discussion: The guidelines presented are not applicable to the Proposed Project

CULTURE AND RECREATION

Preservation and enhancement of Hawai'i's multiethnic culture will be achieved through policies that encourage and respect the Native Hawaiian culture and its vital influence on the way of life on O'ahu; recognize unique local cultures, values and traditions; prioritize equity for historically marginalized groups; protect and enhance cultural, historic and archaeological sites, buildings, and artifacts; and promote the living arts and culture of our multi-cultural heritage. The City also recognizes the importance of providing adequate park space and facilities to meet changing demand. Objectives and policies encourage visual and performing arts and the provision of a wide range of recreational facilities and services that are readily available to residents and visitors. New policies also call for using our unique natural environment in a responsible way for cultural events and activities, and for creating and promoting recreational venues for all to enjoy from kūpuna to keiki, and kama'āina to malihini.

Discussion: The guidelines presented are not applicable to the Proposed Project

GOVERNMENT OPERATIONS AND FISCAL MANAGEMENT

The objectives and policies in the first ten key areas rely on a well-run, transparent, and resourceful City government. Increased efficiency, effectiveness, responsiveness, and fiscal responsibility in carrying out the functions of City government are crucial to the City's ability to successfully fulfill its many duties. In an age of increased technology, automation, and citizen engagement, government operations must evolve to become more open and transparent, embrace crowd-sourcing, and collaborate with communities while also delivering services quickly and ensuring integrity. Increasing challenges require more nimble systems that are able to quickly adapt and adjust. Revenue mechanisms to support these operations should ensure social and economic equity, encourage sustainability, and be aligned to support the first ten key areas.

Discussion: The guidelines presented are not applicable to the Proposed Project

X

X

X

4.1.2 Koolauloa Sustainable Communities Plan

Koolauloa Sustainable Communities Plan

The Koolauloa Sustainable Communities Plan (KSCP) provides policies and guidelines for future development along the upper North Shore and upper Windward side. The KSCP covers an area that extends from Waiale'e to the north end of Kaneohe Bay, with the shoreline defining the northern and eastern edges and the slopes of the Ko'olau Mountain Ranges defining the western edge. The KSSCP Vision Statement focuses on retaining unique qualities that define the North Shore's attractiveness to residents and visitors alike, including coastal resources, scenic open spaces, and the community's heritage.

Vision through 2035:

- Adapt the concept of ahupua'a in land use and natural resource management,
- Preserve and promote open space and agricultural uses,
- Preserve and enhance scenic, recreational, and cultural features that define Ko'olau Loa's sense of place,
- Emphasize alternatives to private passenger vehicle as modes of travel,
- Protect and enhance residential character while adapting to changing needs,
- Define and enhance existing commercial and civic districts,
- Maintain the Community Growth Boundary to protect agricultural, open space, and natural resources.

While the region is to remain “*country*,” a mix of housing units is desired to meet the needs of residents, in a manner consistent with rural design and principles of sustainability (DPP 2011). The project is consistent with the below objectives for the regional goals.

KAHUKU COUNTRY TOWN

- Maintain a plantation town character that reflects the building forms and exterior appearance of traditional commercial and mixed-use buildings in Hawai'i's plantation communities. The mill theme should continue to be a dominant element for the town.
- Allow limited expansion to create sufficient critical and diversified mass for the center's continued viability to meet local and visitor shopping needs.
- Allow for compatible mixtures of commercial, industrial, and residential uses within the Country Town. Emphasize commercial uses along the Kamehameha Highway frontage.

- Emphasize commercial and related uses conducive to pedestrian activity at the street level along main street frontages. Encourage adequate landscaping, and where possible and appropriate, bikeway and public transportation provisions to improve public thoroughfares through these locations.

LĀ'IE RURAL REGIONAL COMMERCIAL CENTER

- Introduce a rural architectural character which incorporates appropriate themes and building forms reflective of the diverse heritage of Lā'ie's residents.
- Provide for a modest expansion of the district in order to meet future resident and visitor needs associated with Lā'ie's anticipated long-term housing and employment growth, and the expansion of visitor attractions. Given its size, and potential mix of uses, Lā'ie's center has potential as a focal point for the region's shopping and services, and expansion is appropriate in order to better serve adjoining communities as well as local residents.
- Limit uses primarily to commercial retail, business service establishments, professional offices and public uses such as a satellite city hall, library, post office, or other similar facilities, that provide services to Lā'ie and surrounding communities.

The Malaekahana Site lies between the Kahuku Country Town and the Laie Rural Regional Commercial Center. As such, it fits the classification of providing urban low density fringe housing for support to the commercial centers. In particular, it fits the goals of the KSCP as follows:

Open Space and Natural Environment

Open space preservation is a key element of the vision for Ko'olau Loa's future. Long-term protection and preservation of scenic resources, agricultural areas, natural areas, and recreational areas are important to maintaining the rural character of Ko'olau Loa for both residents and visitors. The open space system consists of areas that serve important ecological, recreational, and scenic functions, including undeveloped mauka and shoreline areas, parks and recreational resources, natural gulches and drainageways, utility corridors, and agricultural areas. It also includes the open space "gaps" that provide visual definition and physical separation between the existing rural communities in support of the region's rural development pattern.

- Define and maintain clear boundaries and separations between existing rural communities.

- Provide adequate shoreline setbacks that consider shoreline changes resulting from erosion hazards and rising sea levels, based on adopted projections of shoreline erosion rates and sea level rise.
- Allow outdoor lighting at the minimum level necessary for public safety, security and community aesthetics consistent with the goals of energy conservation and environmental protection.

Finding: The proposed project would be located outside of the shoreline setback area and would not adversely impact shoreline habitats or resources. It maintains a urban fringe housing with rural characteristics gap between the commercial centers of Laie and Kahuku. The units' foundations are designed to conform to and exceed all FEMA and National Flood Insurance programs and requirements. The design ensures that the dwellings will withstand the impact and remain intact under worst-case disaster scenarios. The proposed project would employ erosion and spill control BMPs, which would be implemented during construction to avoid and minimize potential indirect impacts to streams, bays, or other aquatic resources, as described in the ESCP in Appendix E. All disturbed soils would be replaced and stabilized, and landscaping would be installed around the proposed units to stabilize soils and prevent erosion over the long term. All outdoor lights would be fully shielded so bulbs could only be seen from below, and all outdoor lights would be turned off when human activity is not occurring (or motion sensors would be installed). All permanent outdoor lighting would be shielded using a seabird-friendly light style that also protects the dark, starry skies of Hawai'i. For aesthetics, the proposed landscaping would consist of native Hawaiian plants or non-invasive plants to the maximum extent possible. If native plants do not meet landscaping objectives (unlikely), plants with a minimal risk of becoming invasive would be substituted.

As the following map shows on the next page, the locus of the site between the two commercial villages of Laie and Kahuku provide that “rural” composition desired for these urban areas.

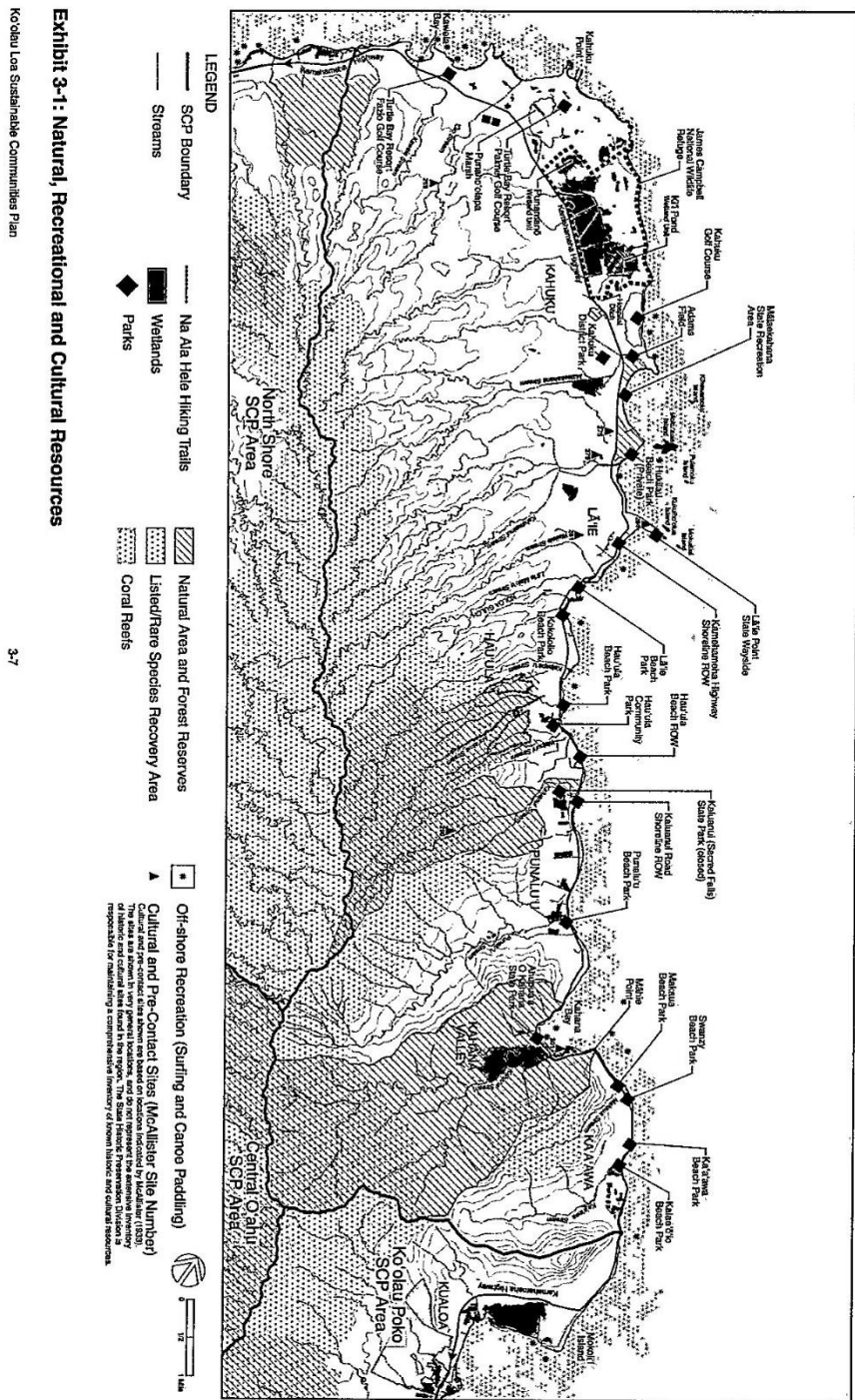


Figure 28- KSCP Map

EXISTING AND NEW RESIDENTIAL COMMUNITIES

The following policies are applicable to existing and new residential communities:

- Respect and help to preserve the natural setting of the Ko‘olau Loa region by requiring development in residential areas to be sensitive to physical constraints and have minimal impact on the area’s rural character.
- Maintain sufficient inventory of land within the Community Growth Boundary to accommodate existing and future housing needs of residents within the Ko‘olau Loa area by supporting limited expansion of residential areas in Kahuku and Lā‘ie to meet existing pent-up demand and provide land for affordable work force housing.
- Increase housing affordability to Ko‘olau Loa residents.
- Maintain the existing inventory of residential land for the communities of Ka‘a‘awa, Hau‘ula and Punalu‘u. Future residential needs in these communities will be met through infill residential development on appropriately zoned vacant lots within existing neighborhoods. No new housing areas are designated in these areas.
- Adopt zoning, subdivision and related project design regulations which foster a rural character in new residential developments and improvements to existing residential areas.
- Encourage and support the development of affordable housing in the region in order to address existing pent-up demand for housing and overcrowded housing conditions.

This project meets the standards of the KSCP for residential communities. It is an infill situation on an appropriate zoned site, maintain houses for members of the Zucco family, incorporates a “rural characteristic” with low rise construction, and employs constraints with setbacks, retention of open space and shorelines, maintaining pervious surfaces, etc... It maintains existing inventory.

Finding: The CIA research found no historic properties on the portion of the subject property that is currently planned for residential development. The area has previously been cleared and graded and no extant surface historic properties are present within the planned construction area. As part of the SMA permitting process for the current project, the project proponent will initiate the HRS 6E-42 historic preservation review for the project through the SHPD when the project advances to the SMA stage per their request. Until then, any inadvertent cultural detection will be immediately reported to SHPD.

4.1.3 LAND USE ORDINANCE (CHAPTER 21)

The City and County of Honolulu Land Use Ordinance (LUO), Chapter 21 of the ROH, regulates land use and development in accordance with adopted land use policies and plans, including the city’s General Plan. The provisions of the LUO are also referred to as the zoning ordinance. The project area is located within the Urban zoning district, which is intended to provide areas for concentrated housing still sensitive to natural resource protection, as stated in the LUO . The proposed project constitutes an allowed use within the Urban zoning district.

The project is also in compliance with the requirements set forth by Chapter 21A Flood Hazard Areas of the ROH. The structures would be flood zone X and thus will use the standard $11' + 3.2' = 14.2'$ flood elevation from MSL of which its first-floor elevation lies above at 20.0' above MSL.

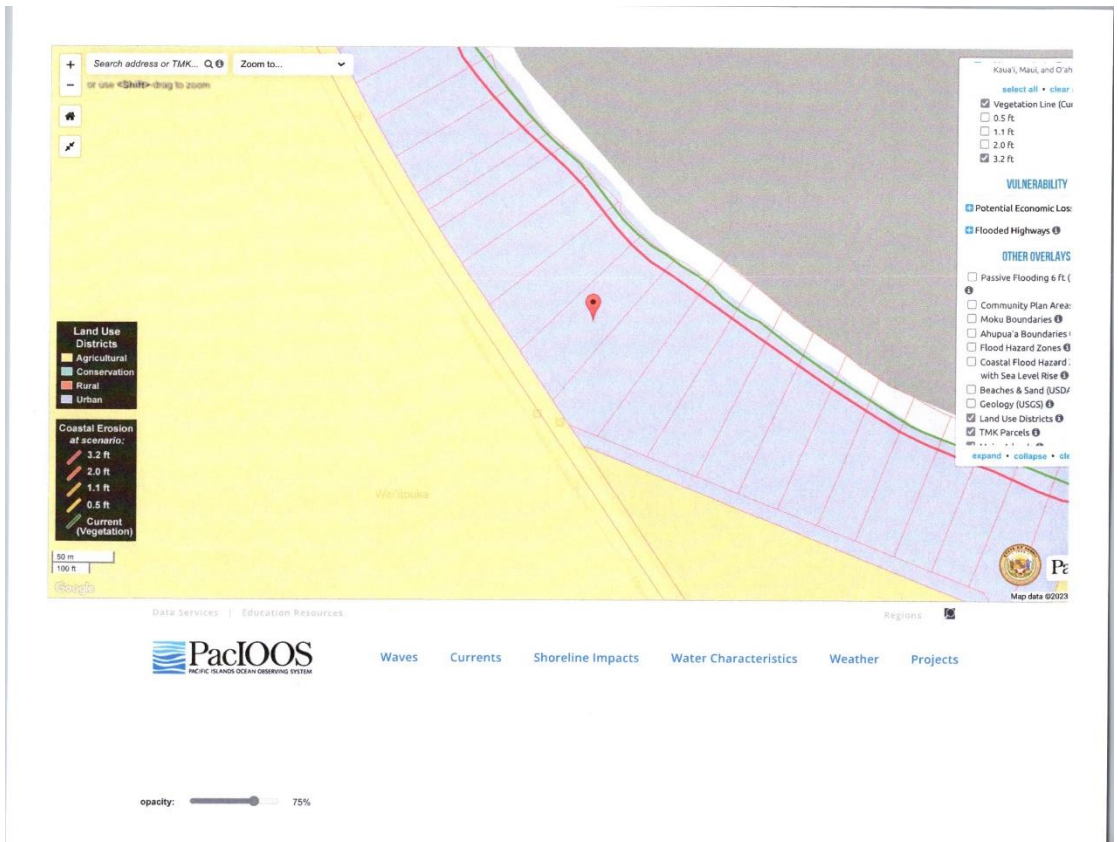


Figure 26 - Zoning Classification

4.1.4 SHORELINE SETBACKS (CHAPTER 26)

Chapter 26 of the ROH establishes standards and rules that apply to all shoreline areas of the city, and generally prohibits any construction or activity that may adversely affect beach processes, public access along the shoreline, or shoreline open space. ROH Sec 26-1.5 prohibits structures or activities in the shoreline area with exceptions granted for certain, minor structures or activities that do not affect shoreline processes or public access. An older shoreline survey was done, and the applicant is proposing a >70' setback from that survey which from shoreline erosion rate maps appears to have moved a neutral projection of less than 3' over 70 years. The survey is located in Appendix B. The proposed development would be located 75+ feet mauka of the shoreline area. Therefore, the project would be following shoreline setback requirements outlined under Chapter 26 of the ROH by extending the setback further than is required (40').

4.1.5 SPECIAL MANAGEMENT AREAS (CHAPTER 25)

Chapter 25 of the ROH regulates development within special management areas, including coastal zones and natural or historic wetlands. According to Sec 25-3.3, all development within the SMA is subject to review and approval by the agency and is subject to compliance with the objectives, policies, and guidelines set forth under Chapter 25 of the ROH. Article 5 of the SMA regulations outlines submittal requirements for proposed developments seeking an SMP. In accordance with Sec 25-6.3, specific requirements applicable to shoreline or nearby lots, all exterior lighting for the proposed housing units would be shielded to reduce potential impacts to wildlife, and all landscaping and irrigation would be contained and maintained within the property boundaries and would not extend into the shoreline area.

4.2 State Regulations

4.2.1 Hawai'i Coastal Zone Management Program (HRS 205A)

The Hawai'i Coastal Zone Management (CZM) Program (HRS Chapter 205A) was promulgated in 1977 in response to the Federal Coastal Zone Management Act of 1972. Hawai'i's CZM area encompasses the entire state, including all marine waters seaward to the extent of the state's police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters. The project is located within the SMA and a Urban District. The purpose of the SMA permit is to ensure that uses, activities, and operations within the SMA are conducted in compliance with the state's CZM law (HRS

205A) and is compatible in its goals with an DEA/FEA/SMA. SMA and EA permits regulate permissible land uses that are already allowed by land use policies, considering zoning designations, county general plans, and community plans. Projects within the SMA are required to undergo procedural steps set forth in HRS 343 prior to applying for an SMA or FEA permit which is being done.

Hawai'i's CZM program has 10 objectives and policies. Each of these objectives and policies are listed below, along with a description of how the proposed project is consistent with each of them.

- **Recreational resources:** The proposed project is located on private land and will have no adverse effect on recreational uses or public access. The project would not result in a change or adverse effect to recreational resources or public access to the beach and coastal resources.
- **Historic resources:** The property through CIA research did not detect any indicators that an archaeological inventory survey would be required as CIAs mainly use cultural historical research, SHPD and OHA database research and cursory surface land examination. The project area was the location of a previously cleared residential land. Grubbing, grading, and leveling for that activity would have destroyed any surface historic properties within the planned construction area. **As aforementioned, SHPD will be further consulted with, and the applicant has agreed to stop work immediately in the event any historical or cultural artifacts are discovered and contact SHPD.**

During that cursory surface examination, no surface historic properties were observed within or in the immediate vicinity of the Proposed Action. No intact sinkholes, sand dune deposits, or cultural material were observed within the project area, and none are believed to be present. As a result, the Proposed Action is not anticipated to adversely affect any historic properties. Furthermore, the Proposed Action would have no significant impact on historic properties as none are listed or detected.

Continued consultation with the State Historical Preservation Division (SHPD) will be necessary to determine if archaeological monitoring or other specific measures will be required. **However, in that unlikely event that previously unidentified historical, archaeological, or cultural resources or human remains are encountered, work in the immediate area would cease and notification of the proper authorities, including the**

State Historic Preservation Division, would occur immediately according to applicable law.

- **Scenic and open space resources:** The proposed dwelling would be visually consistent with the surrounding residential landscape setting (see Appendix A – *Building Plans*). The project would not impact any public open space resources. Landscaping would include native flora.
- **Coastal ecosystems:** The proposed units would be located outside the 40-foot shoreline setback area and is set at 75'+ away. Erosion and spill control BMPs would be implemented during construction to avoid and minimize potential indirect impacts to coastal ecosystems. All disturbed soils would be replaced and stabilized, and landscaping would be installed around the proposed units to stabilize soils and prevent erosion over the long term.
- **Economic uses:** The proposed housing units would provide additional residential housing use and temporary construction employment within the community, would generate tax revenue for the City, and would create temporary jobs during construction. The houses are appropriately located within zoning designations and meets requirements under LUOs.
- **Coastal hazards:** The units' foundations are designed to conform to and exceed all FEMA and National Flood Insurance programs and requirements. The design ensures that the dwellings will withstand the impact and remain intact under disaster scenarios. In addition, the proposed project has been designed to avoid development within sea level rise exposure areas up to 3.2 feet by 2100.
- **Managing development:** The proposed project represents an allowed residence development within its zoning designation. The impacts of the proposed project have been analyzed and disclosed in this Draft EA as part of the permitting process.
- **Public participation:** In addition to the 30-day public review and comment period of the Pre-Consult Draft EA, the project's DEA/FEA/SMA permitting process provides opportunities for public participation, including providing written notice and a presentation to appropriate neighborhood boards, providing written notice to surrounding property owners, and holding an additional public hearing by DPP. Stakeholder agencies were contacted and approximately 1/3 responded with comments ranging from no comment to specific suggestions such as with USFW. Abutters were notified as well with no response (one is the property owner). Communication will be found in Appendix G – Consultation

with agencies and stakeholders as responses have been received during DEA development. In addition to the 30-day public review and comment period of the Draft EA and a 60-day review period upon agency request, the Koolauloa Neighborhood Board hearing, the project's permitting process provides additional opportunities for public participation even further during DEA *EN* notification, including providing written comments or additional presentations to appropriate neighborhood boards or/and hearings, providing proof of written notice to surrounding property owners, and stakeholders mailings.

- **Beach protection:** The proposed development is located outside of the shoreline setback, and there are no other forms of development proposed within the shoreline area (e.g., landscaping or seawalls). Therefore, the project would have no impact on existing beach conditions or access.
- **Marine resources:** The proposed units would have no impact on marine resources. Erosion control, setbacks, spill prevention, and stormwater management measures would be implemented to protect off-site marine waters from being affected by the project.

A CZM summary chart appears on the next page.

COASTAL ZONE MANAGEMENT AREA, CHAPTER 205A, HRS

KEY: S = Supportive N/S = Not Supportive N/A = Not Applicable

Recreational Resources	S	N/S	N/A
Objective: (A) Provide coastal recreational opportunities accessible to the public.			x
Policies:			x
(A) Improve coordination and funding of coastal recreational planning and management; and			x
(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:			x
(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;			x
(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;			x
(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			x
(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;			
(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;			x
(vi) 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;	x		
(vii) Developing new shoreline recreational opportunities, where appropriate. such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and			x
(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.			x

Discussion: The proposed Project does not obstruct coastal recreational opportunities accessible to the public. Given the recreational value of the shoreline, the Project will be designed to minimize pollution via stormwater runoff from the Project site.

Historic Resources	S	N/S	N/A
Objective: (A) Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.	x		
Policies:			
(A) Identify and analyze significant archaeological resources;	x		
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and	x		
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.	x		

Discussion A review of historic maps and aerial photographs indicates that the Project area itself did not likely support use and field exam indicate no detectable past use.

Fieldwork for the current Project was conducted by WHALE. During the site inspection and field survey, the entire (100%) exposed ground surface of the Project area was visually inspected by field technicians walking transects oriented east-west, spaced no more than 10 meters apart. As a result of the fieldwork, no historic properties of any kind were observed within the Project area. Given the negative findings of the current study with respect to archaeological resources, WHALE concluded that the development of the proposed site development on the subject parcel will not impact any historic properties. Therefore, the determination of effect for the proposed Project is "no historic properties affected."

With respect to the historic preservation review process of the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD), WHALE's recommendation is that no further work needs to be conducted within the current Project area prior to or during project implementation. In the unlikely event that archaeological resources are discovered during ground disturbing activity associated with the proposed development, work should cease in the area of discovery and DLNR-SHPD contacted pursuant to HAR 13§13-280

Scenic and Open Space Resources	S	N/S	N/A
Objective: (A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.	x		
Policies:			
(A) Identify valued scenic resources in the coastal zone management area;	x		
(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;	x		
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and			x
(D) Encourage those developments that are not coastal dependent to locate in inland areas.	x		

Discussion: The Project involves the construction of residential home with internal ADU which is setback from shoreline. The use of the Site will remain residential and there will be no change to shoreline resources

Coastal Ecosystems	S	N/S	N/A
Objective: {A} Protect valuable coastal ecosystems, including reefs, from disruption or and minimize adverse impacts on all coastal ecosystems.	x		
Policies:			
(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;	x		
(B) Improve the technical basis for natural resource management;			x
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;			x
(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	x		
(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.	x		

Discussion: The Project will not directly impact coastal ecosystems, including reefs as it is setback over 60 feet from the shoreline. BMPs will be implemented during construction to prevent erosion and stormwater runoff during the construction phase.

Economic Uses	S	N/S	N/A
Objective: (A) Provide public or private facilities and improvements important to the State's economy in suitable locations.			x
Policies:			
(A) Concentrate coastal dependent development in appropriate areas;			x
(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			x
(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:			x
(i) Use of presently designated locations is not feasible; X			
(ii) Adverse environmental effects are minimized; and X			
(iii) The development is important to the State's economy. X			

Discussion: The proposed Project is a private facility and its improvements cannot be considered "coastal dependent."

Coastal Hazards	S	N/S	N/A
Objective: (A) Reduce hazard to life and property from tsunamis, storm waves, stream flooding, erosion, subsidence, and pollution.	x		
Policies:			
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;	x		
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;	x		
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and	x		
(D) Prevent coastal flooding from inland projects.	x		

Discussion: According to the Flood Insurance Rate Map, all of the Project Site is located in Zone X (areas studied and determined to be outside the 0.2% annual chance floodplain). There are no known hazards to life and property on the Project site from stream flooding, erosion, subsidence, and pollution.

Managing Development	S	N/S	N/A
Objective: (A) Improve the development review process, communication, and public participation in the management of coastal resources and hazards.	x		
Policies:			
(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;	x		

(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and x

(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. x

Discussion: . The intent of this application is to address previous communication from DPP regarding SMA permitting so that the Applicant can proceed with it's proposed action.

Public Participation S N/S N/A

Objective: (A) Stimulate public awareness, education, and participation in coastal management. x

Policies:

(A) Promote public involvement in coastal zone management processes; x

(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 x

(C) Organize workshops. policy dialogues, and site-specific mediations to respond to coastal issues and conflicts. x

Discussion: The objective and policies of "Public Participation" are not applicable to the proposed project action.

Beach Protection S N/S N/A

Objective: (A) Protect beaches for public use and recreation. x

Policies:

(A) Locate new structures inland from the shoreline setback to conserve open space. minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion; x

(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, e)(cept when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and x

(C) Minimize the construction of public erosion-protection structures seaward of the shoreline. x

(D) 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 proposed project action. x

Discussion: The objective and policies of "Beach Protection" are not applicable to the proposed project action, though the project does protect beach areas and minimize impact.

4.2.2 Hawai'i Revised Statutes, Chapter 343

The State of Hawai'i EIS law, HRS Chapter 343, was developed “*to establish a system of environmental review which will ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical considerations*” (HRS 343-1). This chapter requires the development of an EA or EIS that discloses the effects of a proposed action, including the cumulative and overall effects, relative to an established set of 13 significance criteria, as defined in 11 HAR 200-12. HRS 343 also mandates that state agencies consider the potential effects of a proposed action on cultural practices as part of the environmental review process. Act 50 of the Session Laws of Hawai'i (*A Bill for an Act Relating to EISs*) clarifies that “*the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai'i's culture, and traditional and customary rights*” and stresses the need to include consideration of cultural resources, customs, practices, and beliefs as part of the EA and EIS process. As part of the project's permitting process, this Draft EA has been prepared in accordance with HRS Chapter 343, as required under ROH Chapter 25.

4.2.3 Hawai'i Land Use Law (Hawai'i Revised Statutes 205)

Hawai'i Land Use Law (HRS Chapter 205) classifies the state into four land use districts: Urban, Rural, Agricultural, and Conservation. The proposed project is in an area classified as Urban. Private residences used for housing purposes are permitted within that district, and thus the project is consistent with its land use classification.

4.2.4 Hawai'i State Planning Act

The Hawai'i State Planning Act (HRS 226-1) was implemented in 1978, to “improve the planning process in this state, to increase the effectiveness of government and private actions, to improve coordination among different agencies and levels of government, to provide for wise use of Hawai'i's resources and to guide the future development of the State.” The project is consistent with the Hawai'i State Planning Act's objectives and policies, particularly those related to the physical environment land-based, shoreline, and marine resources; scenic, natural beauty, and historic resources; and land, air, and water quality. The project has been designed to avoid or minimize impacts to all natural resources and would not cause any long-term adverse effects to natural resources as demonstrated in this Draft EA.

4.2.5 Hawai'i State Environmental Policy (HRS Chapter 344)

The purpose of this chapter is to “*establish a state policy which will encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawaii.*” HRS Chapter 344 provides specific guidelines for the conservation of natural resources and enhancement of quality of life for Hawai'i's people. The project is consistent with HRS 344 guidelines for the conservation of land, water, mineral, visual, air, and other natural resources because the project has been designed to avoid or minimize impacts to all natural resources and would not cause any significant adverse effects to natural resources as demonstrated in this Draft EA. The project is also consistent with HRS 344 guidelines for the enhancement of quality of life since the project would create a new housing and use and opportunity for the owners that is in balance with the unique natural and social environment of Hawai'i.

4.3 Federal Regulations

4.3.1 Endangered Species Act

The Endangered Species Act (ESA) provides broad protection for plants, fish, and wildlife that have been listed as threatened or endangered in the United States or elsewhere and conserves ecosystems on which these species depend (16 United States Code 1531–1544). Section 9 of the ESA prohibits the unauthorized take of any endangered or threatened species of fish or wildlife listed under the ESA. Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect species listed as endangered or threatened, or to attempt to engage in any such conduct (50 Code of Federal Regulations [CFR] 17.3). Harm has been defined by the USFWS to mean an act that actually kills or injures wildlife and may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Harass has been defined to mean an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns that include but are not limited to breeding, feeding, or sheltering (50 CFR 17.3). Section 10 of the ESA contains exceptions and exemptions to Section 9, if such a taking is incidental to the conducting of an otherwise lawful activity. Due to the lack of a federal nexus, formal consultation under the ESA is not required for the project. However, official species lists were requested from

USFWS and DLNR and are included in Appendix G (*Letters and Responses*). Biological resource surveys were performed at the project area to document flora and fauna species and assess the site's potential to provide habitat for special-status species. A detailed description of the survey methods and results can be found in the biological resources memorandum (Appendix C – *Botanical and Fauna Report*). The project area is largely disturbed from previous land use and is dominated by plant species that are not native to Hawai'i. No federally or state-listed threatened, endangered, or candidate plant species or rare native Hawaiian plant species were observed in the survey area. Although there are no special-status wildlife species known to occur within the project area, potential habitat for Hawaiian hoary bat, Hawaiian monk seal, and sea turtles occurs nearby the project area. To prevent impacts to these species during construction, regular on-site staff would be trained to identify special-status fauna with the potential to occur on-site and would know the appropriate measures to be taken if they are present. No long-term impacts to wildlife species are anticipated to result from the proposed development since they would be located within previously disturbed habitats and would have no effect on the long-term health and function of adjacent coastal or riparian habitats where most wildlife species are expected to occur. Therefore, with the consideration of BMPs and species-specific measures that would be implemented during construction, the project is not anticipated to have any adverse effects on special-status species.

4.1.2 Migratory Bird Treaty Act

The MBTA prohibits the taking of migratory birds. A list of birds protected under MBTA regulations is provided in 50 CFR 10.13. Unless permitted by regulations, under the MBTA it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to, or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product. The USFWS does not currently have a comprehensive program under the MBTA to permit the take of migratory birds by otherwise lawful activities. On December 22, 2017, the U.S. Department of the Interior, Office of the Solicitor issued a memorandum opinion concluding that the MBTA does not prohibit incidental take of migratory birds. Conservation measures that avoid or minimize impacts to listed species would be incorporated into the project's plans and specifications. No MBTA-protected bird species were observed in the project area during biological resource surveys (see Appendix C). However, given the property's proximity to shoreline, estuarine, and riparian habitats, there is potential for migratory birds to be present on-site or transit the area. Implementation of

the MBTA-related guidelines which are the same as USFW for *Dark Sky* provisions, no barbed wire, avoid roosting/nesting seasons, etc... is expected to avoid all direct impacts to birds protected by the MBTA.

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Chapter Five

ALTERNATIVES

Chapter 5. Review of Alternatives including the Proposed Action

The project site and its project action zone are a current occupied lot with a mostly dominant herbaceous grass and light tree canopy with a large internal grassed areas as well with gravel driveways. The site's botanical and faunal characteristics are fully described in Appendix C to the DEA – *Botanical and Faunal Report*. Culturally, it appears from research and contacts that the site was not used for farming, but the shoreline likely was used pre-contact for fishing. The proposed action zone does not affect the shoreline. Other details on the site may be found in Appendix D of the DEA – the *Environmental Site Assessment* which includes a Hazardous Materials Investigation, Database, Historical Aerial Imagery, and other information.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The applicant (Sea Turtle Estates LLC) intended to construct a new single-family residential home development with family dwellings to replace a termite damaged existing dwelling with new dwelling for family members and a detached carport. A detailed description of the proposed action may be found in Appendix A of this DEA – *Site-Specific Conceptual Design and Building Plans* which further details the required components and layout.

A: Physical Setting

The proposed site is located in Kahuku on the north side of Oahu. The Proposed Action will be located on acres that is denoted by TMK Parcel (1) 5-6-001:089 and is identified as Proposed Action Site.

Project Site

The Proposed Action will be located on a occupied site that is dominated by invasive species vegetation and a grass landscape. There is a fine layer of vegetative-derived detritus that forms a small ½ inch to 1 inch silt layer above the soils in some locations.

Project Site Access

There is an existing parking area and access from Kamehameha Highway from the Zucco Owner gate to the lot used to access the site. Two new access driveways are planned for the lot and shown on the building plans. There is no beach access path on this property.

B. Mitigation Measures

There are two proposed mitigation measures planned.

First is the BMPs (Best Management Practices) proposed to mitigate construction activity. These are outlined in Appendix E of the DEA – *Erosion and Sedimentation Control Plan*. These are designed to minimize construction impact such as dust control, runoff, equipment storage and use, etc.....

Last is land use alteration. Construction of a dwelling and support dwellings as an allowed use in its district places the structures outside areas that may harm natural resources and employs practices that are in relation to mitigating flood hazards and shoreline impact.

Alternatives

An EA must consider alternatives to the Proposed Action in accordance with Chapter 343, HRS. However, detailed analysis is only required for those alternatives determined to be reasonable.

Reasonable alternatives are alternatives that could attain the purpose and need of the Proposed Action, regardless of cost. This EA identifies and evaluates the environmental impacts of alternative uses on the property (Alternatives 1-3) capable of attaining the purpose and need of the Proposed Action.

Alternatives

5.1 Alternative 1 – (Proposed Action)

5.1.1 Technical Characteristics

Demolition of Existing Residence. Construction of a new Single-family residence. Add two more dwellings and a detached carport.

Alternatives Considered but Dismissed

Other Alternatives of previous designs and layout for the residence were considered but dismissed to avoid site security risks, no reduction of impact to resources, or lack of viability for crop production. Consideration was given to:

- Moving closer to the shoreline to avoid Kamehameha Highway noise, but that places the dwelling closer to flood hazards and the climate change potential sea rise.
- Moving the parking to the rear of the site (makai) was rejected for the same reasoning as above.

5.2 No Action Alternative

The No-Action Alternative where the proposed project would not be constructed and there would be no allowed development (residence) in the SMA area. Therefore, the Zuccos would not benefit from an allowed use of the property for housing.

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Chapter Six

ANTICIPATED DETERMINATION OF FONSI

The proposed project involves the construction and replacement of a new single-family residence with additional family dwelling and a carport. Potential impacts of the proposed improvements have been evaluated in accordance with the significance criteria of §11-200.1- 13 of the Administrative Rules. Discussion of the project's conformance to the criteria is presented as follows:

6. A FONSI is anticipated for this project, based on the following analysis:

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

No irrevocable commitment to loss or destruction of any natural or cultural resource would result. The project is not expected to irrevocably commit to the loss or destruction of any natural or cultural resources. The project area has been previously disturbed, and the proposed units have been designed to avoid sensitive and protected resource areas. BMPs would be implemented during construction to further avoid or minimize potential construction impacts to natural or cultural resources. **In the event of unexpected discovery of historic or archaeological resources, the SHPD will be immediately notified for appropriate response and action.**

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

The Proposed Action would not curtail the range of beneficial uses of the environment. The project is not expected to curtail the range of beneficial uses of the environment.

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

The State's environmental policies enumerated in Chapter 344, HRS promote conservation of natural resources, and an enhanced quality of life for all citizens. The Proposed Project does not conflict with the State's long-term environmental policies, goals, or guidelines as expressed in Chapter 344, HRS, and will not significantly impact natural resources due to the fact that the Project Site is already disturbed and has been subject to human utilization since the project area was developed for current residential uses. The project would be in conformance with the State's long-term environmental policies and goals expressed under HRS 344.

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

In the short term, construction expenditures will provide positive benefits to the local economy. This would include creation of some construction and construction support jobs, and the purchase of materials from local suppliers, as well as indirect benefits to local retail businesses resulting from construction activities, but not at a level that would generate any significant population expansion. The Proposed Action would not substantially affect the economic, cultural practices or social welfare of the community or State. The project is not anticipated to cause substantial, adverse effects to the economic or social welfare of the community or State. The project would increase tax revenue for the City and will create temporary jobs during construction.

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

The Proposed Action would not affect public health. The project is not anticipated to affect public health. No identifiable adverse short- or long-term impacts on public health are anticipated to result from the construction and operation of the Proposed Project. Typical short-term construction-related impacts (e.g., noise and air quality) are anticipated, however, they will be temporary in nature and will comply with Federal, State, and County regulations.

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

No substantial secondary impacts, such as population changes or effects on public facilities, are expected. The project is not expected to result in substantial secondary impacts to population or public facilities. Substantial impacts to public facilities are not anticipated to result from the construction and operation of the Proposed Project. Moreover, the Proposed Project is not anticipated to induce population growth in the area or region. Existing private water and utility infrastructure have served the area for many years and are expected to have sufficient capacity to serve project demands. Agencies with jurisdiction over their respective infrastructure systems will be consulted as the Proposed Project proceeds to assure that it can be accommodated.

(7) Involve a substantial degradation of environmental quality.

No substantial degradation of environmental quality is expected due to the Proposed Action. The project is not anticipated to cause substantial degradation of environmental quality. The Proposed Project is not anticipated to substantially degrade environmental quality. Long-term impacts to air and water quality, noise levels and natural resources will be minimal. Typical short-term construction-related impacts (e.g., noise and air quality) are anticipated, but will be temporary and will comply with State and County regulations.

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

No cumulative effect on the environment or commitment to larger actions would be involved. The project is not anticipated to have adverse cumulative environmental effects and it is not linked to any larger action. The Proposed Project will not have any substantial negative secondary impacts on the environment. Implementation of the Proposed Project will not commit the applicant to any other larger actions and will not generate any additional actions that could have a cumulative effect on the environment.

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

No rare, threatened and/or endangered flora or fauna species are known to inhabit the project area. However, it was acknowledged by the State Department of Land and Natural Resources – Division of Forestry and Wildlife (DLNR-DOFAW) that the State listed Hawaiian Hoary Bat or ‘Ōpe‘ape‘a (*Lasiurus cinereus semotus*) could potentially occur in the vicinity of the project area and may roost in nearby trees, the State threatened White Tern (*Gygis alba*) or Manu o Kū is known to nest in the vicinity of the Proposed Project, State-listed waterbirds such as the Hawaiian Duck (*Anas wyvilliana*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), Hawaiian Coot (*Fulica alai*), and Hawaiian Common Gallinule (*Gallinula chloropus sandvicensis*) could potentially occur in the vicinity of the Proposed Project. No adverse impacts resulting from the project are anticipated. However, measures to prevent adverse effects to protected species include the following:

- Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed.

Barbed wire should be avoided for any construction because bat mortalities have been documented as a result of becoming ensnared by this type of fencing during flight.

- During construction activities, all nighttime lighting will be shielded and angled downward to reduce glare and disruption of bird flight. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea. Following construction, permanent light sources will be shielded and angled downward to eliminate glare that could disturb or disorient birds in flight.
- If tree trimming or removal is planned, DLNR-DOFAW strongly recommends a qualified biologist survey for the presence of endangered species prior to any action that could disturb the trees.
- If any of the State-listed waterbirds are present during construction activities, then all activities within 100 feet (30 meters) should cease, and the bird should not be approached. Work may continue after the bird leaves the area of its own accord.

No rare, threatened, or endangered species or their habitats would be adversely affected. Although no special-status species are known to occur within the project area, potential habitat for Hawaiian hoary bat, Hawaiian monk seal, and sea turtles, Hawaiian sea birds, and potentially MBTA migratory species occurs nearby the project area. In order to prevent impacts to these species during construction, regular on-site staff would be trained to identify special-status fauna with the potential to occur on-site and would know the appropriate measures to be taken if they are present. Long-term impacts are not anticipated. Therefore, it is not anticipated that the project would adversely impact any rare, threatened, or endangered species or their habitats.

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

The Proposed Action would not detrimentally affect air or water quality, or ambient noise levels. The project is not anticipated to adversely affect air or water quality or ambient noise levels. Construction of the project would temporarily increase air emissions and noise levels within the immediate project area but would be minimized through BMPs. Erosion and spill control BMPs would be implemented during construction to avoid and minimize potential indirect impacts to streams or water resources. Compliance with all state and local regulations would be followed to ensure that the impacts are less than significant.

No long-term significant impacts to air quality, water quality, or noise levels within the Project Site are anticipated as a result of the construction and operation of the Proposed Project. Land disturbing activities include demolition, foundation work, and potential utility upgrades. Construction of the residence will be performed in accordance with Federal, State and County regulations, thereby minimizing potential impacts to air and water quality. In the short-term, noise from construction activities will be unavoidable. The increase in noise level will vary according to the phase of construction. Noise may also increase because of operating power equipment during the construction period.

Construction noise impacts will be mitigated by compliance with provisions of the State DOH Administrative Rules, Title 11, Chapter 46, “*Community Noise Control*” regulations. These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels stated in the DOH Administrative Rules. It shall be the contractor’s responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment, and to maintain noise levels within regulatory limits. In the long term, no significant noise impacts are anticipated once the construction of the Proposed Project has been completed. Since the Proposed Project is not expected to significantly increase roadway capacity or travel demand, ambient noise levels in the vicinity attributable to the Proposed Project should not change significantly.

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

The Proposed Action would not detrimentally affect environmentally sensitive areas such as floodplains, tsunami zones, beaches, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters, or coastal waters. The project has been designed to avoid impacts to, and development within, environmentally sensitive areas including coastal hazard areas, coastal shorelines and setbacks, waters features, and riparian buffers, and the units would be above the flood elevations. BMPs would be implemented to minimize potential erosion due to construction activities.

In the short- and long-term, no significant impacts on flood hazards on the Proposed Project are anticipated as the proposed improvements are not anticipated to increase flood risks or cause any adverse flood-related impacts at the project area. The Proposed Project will be designed and constructed to applicable flood zone requirements and mitigations.

(12) Have a substantial adverse effect on scenic vistas and view planes, during day or night, identified in county or state plans or studies;

The Proposed Action would not substantially affect scenic vistas and view planes identified in county or state plans or studies. The project would not adversely impact scenic vistas and view planes. The proposed home and associated landscaping and structures would be visually consistent with the surrounding residential landscape setting. Moreover, the Proposed Project is not expected to adversely affect scenic and visual resources in the project area. The Proposed Project will not degrade lateral coastal views or mauka-makai views from areas in the vicinity of the site. The vertical components of the Proposed Project will be consistent with the visual character of the surrounding uses in terms of height and character as well as surrounding community.

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

There would be no requirement for substantial energy consumption. The project would not require substantial energy consumption. The proposed development would increase energy consumption within the overall community by small amount but is expected to be offset by use of potential PV panels. The Proposed Project will not require substantial energy consumption nor produce substantial GHG emissions. Additionally, it is anticipated that the Proposed Project will implement energy efficient fixtures as feasible to reduce overall energy consumption.

6.1 Anticipated Determination

Based on a review of the significance criteria in HRS Chapter 343, and HAR Section 11-200.1- 13, it is anticipated that the project would not result in significant adverse effects on the natural or human environment. A FONSI is expected.

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Chapter Seven

CONSULTATION

7. CONSULTATION

7.1 Pre-Assessment Consultation

Below are the following agencies and organizations that were consulted before the preparation of the Draft EA. Consultation was conducted to solicit comments regarding potential concerns and requirements pursuant to refining the scope of EA documentation. All written comments are reproduced in Appendix G since the DEA is formulated.

The agencies and organizations listed in Table below received electronic copies of the Draft EA as part of the Chapter 25, ROH & HRS 343 review process during the DPP pre-consultation review, and before the Neighborhood Public Hearing.

**Table - List of Agencies and Organizations
Receiving the Pre-Consult Documents for formulating aDraft Environmental Assessment**

FEDERAL AGENCIES
United States Army Corps of Engineers Pacific Ocean Division, Building 230 Fort Shafter, Hawaii 96858-5440
United States Department of the Interior Fish and Wildlife Service Pacific Islands Fish and Wildlife Office 300 Ala Moana Blvd., Room 3-122, Box 50088 Honolulu, Hawaii 96813
United States Department of Agriculture Natural Resources Conservation Service Hawaii State Office 300 Ala Moana Blvd. Room 4-118 Honolulu, HI 96850-4118

STATE AGENCIES
State of Hawaii Department of Agriculture Office of the Chairperson 428 S. King Street Honolulu, Hawaii 96814
State of Hawaii Department of Accounting and General Services Kalanimoku Building 1151 Punchbowl Street Honolulu, HI 96813

STATE AGENCIES
State of Hawaii Department of Business, Economic Development and Tourism Office of Planning P.O. Box 2359 Honolulu, Hawaii 96804
Hawaii Dept. of Health Environmental Management Division 2827 Waimano Home Road Rm 222 Pearl City, Hawaii 96782
State of Hawaii Department of Hawaiian Home Lands 91-5420 Kapolei Pkwy Kapolei, HI 96707
State of Hawaii Department of Labor and Industrial Relations 830 Punchbowl Street Honolulu, HI 96813
State of Hawaii Department of Land and Natural Resources Land Division 1151 Punchbowl St, Room 220 Honolulu, Hawaii 96813
Office of Hawaiian Affairs 560 Nimitz Highway Honolulu, Hawaii 96817
Office of Conservation and Coastal Lands Kalanimoku Building, 1151 Punchbowl St. Rm 131 Honolulu HI 96813

COUNTY AGENCIES
Board of Water Supply 630 S. Beretania Street Honolulu, HI 96843
Department of Environmental Management 1000 Uluohia Street, Suite 308 Kapolei, HI 96707
Department of Transportation Services 650 S. King Street, 3rd Floor Honolulu, HI 96813
C&C of Honolulu, Police Dept. 801 S. Beretania Street Honolulu HI 96813
County of Oahu – Fire Department Administrator – Dept of Fire and Public Safety 636 South Street Honolulu. HI 96813

ADJACENT AND NEARBY PROPERTIES

Abutters
Koolauloa Neighborhood Board
Kahuku Community Association

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

Chapter Eight

PREPARERS

CHAPTER 8 - LIST OF PREPARERS

This report was prepared for Sea Turtle Estates LLC – Applicant (s), by WHALE Environmental Services LLC. Members of the WHALE professional staff are listed below.

Project Management

- Mark Howland/Bonnie Howland

Quality Assurance

- Mark Howland/Kri Brook

Technical Analysts

- Mark Howland, Caitlin Coska

Graphic Design

- Mark Howland/Gabe Blossom

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

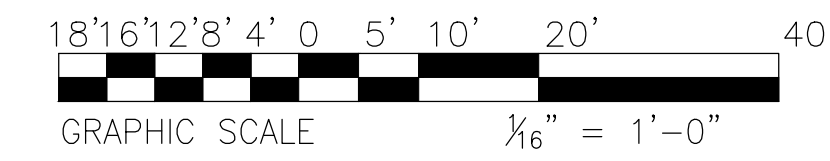
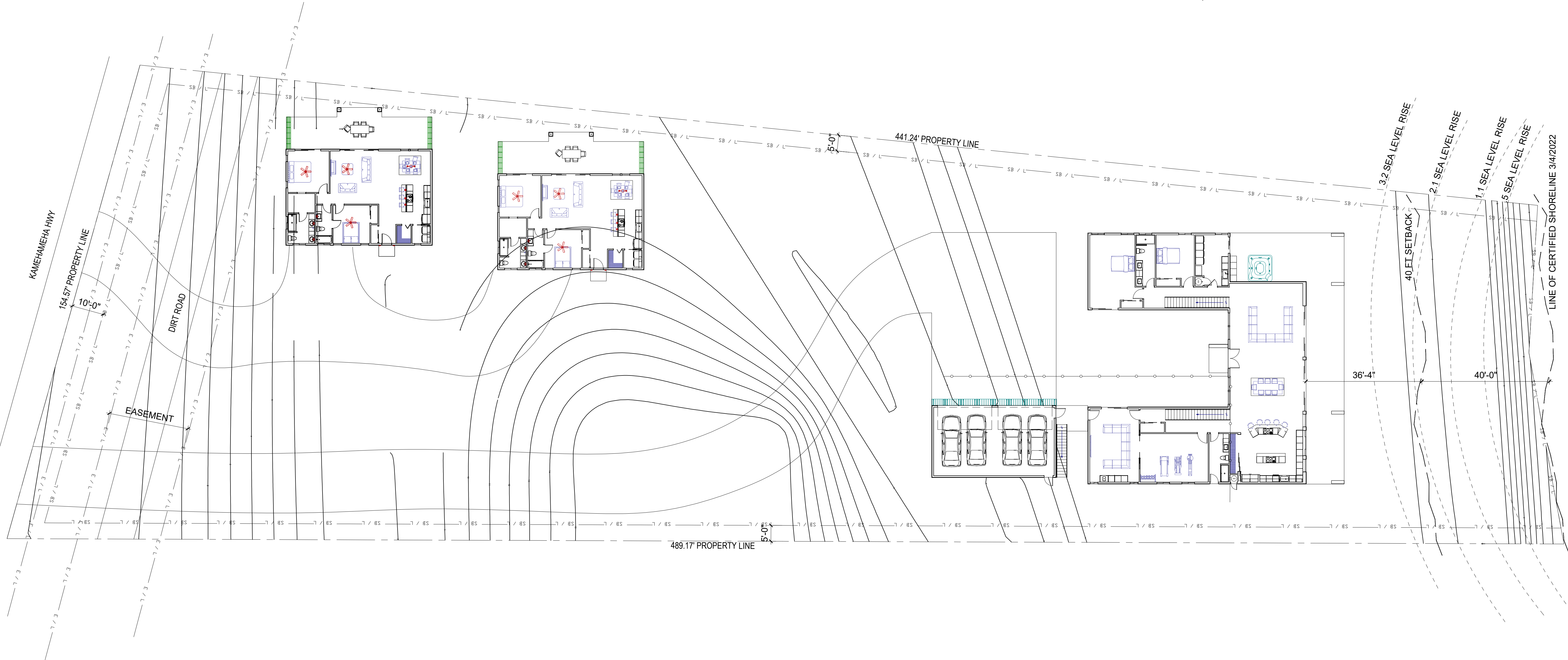
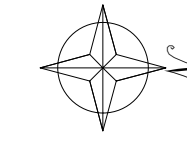
APPENDIX A

**Demolition, New Home construction with
two (2) Dwellings & Carport**

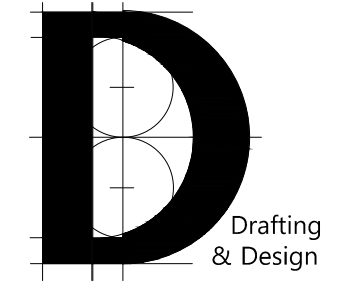
Site Specific Conceptual Design

LUO DATA

TMK: 5-6-001:089
 ZONING: R5
 LOT AREA: 43,560 SF
 MAX. BLDG HT PER LUO: 25'-0" UNLESS SLOPING
 FRONT YARD SETBACK: 5'-0"
 SIDE & REAR YARD SETBACK: 5'-0"
 SMA ZONE: SMA - SHORELINE NOT AFFECTED
 FLOOD ZONE: X



Design	Date	Prod.	Date	Permit	Date	Set	Date



PO BOX 22578
 HONOLULU, HI 96823
 P: (808) 221-2868



EXP DATE 4/30/2024
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SUPERVISION AS DEFINED IN TITLE XVI, CHAPTER 115, SECTION 16-115-2 OF THE RULES & REGULATIONS OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS OF THE STATE OF HAWAII

Revisions:

3/30/2023	SMA

ZUCCO RESIDENCE
 56-187 KAM HWY, KAHUKU, HAWAII 96731
 TMK 5-6-001:089

PLOT PLAN

Job No:	
Drawn by:	
Date:	
Drawing No:	001
1 of 1 Sheets	

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

APPENDIX B

**Demolition, New Home construction with
two (2) Dwellings & Carport**

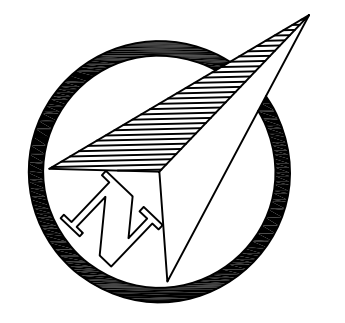
Shoreline Information

KAMEHAMEHA HIGHWAY

LOT 1265

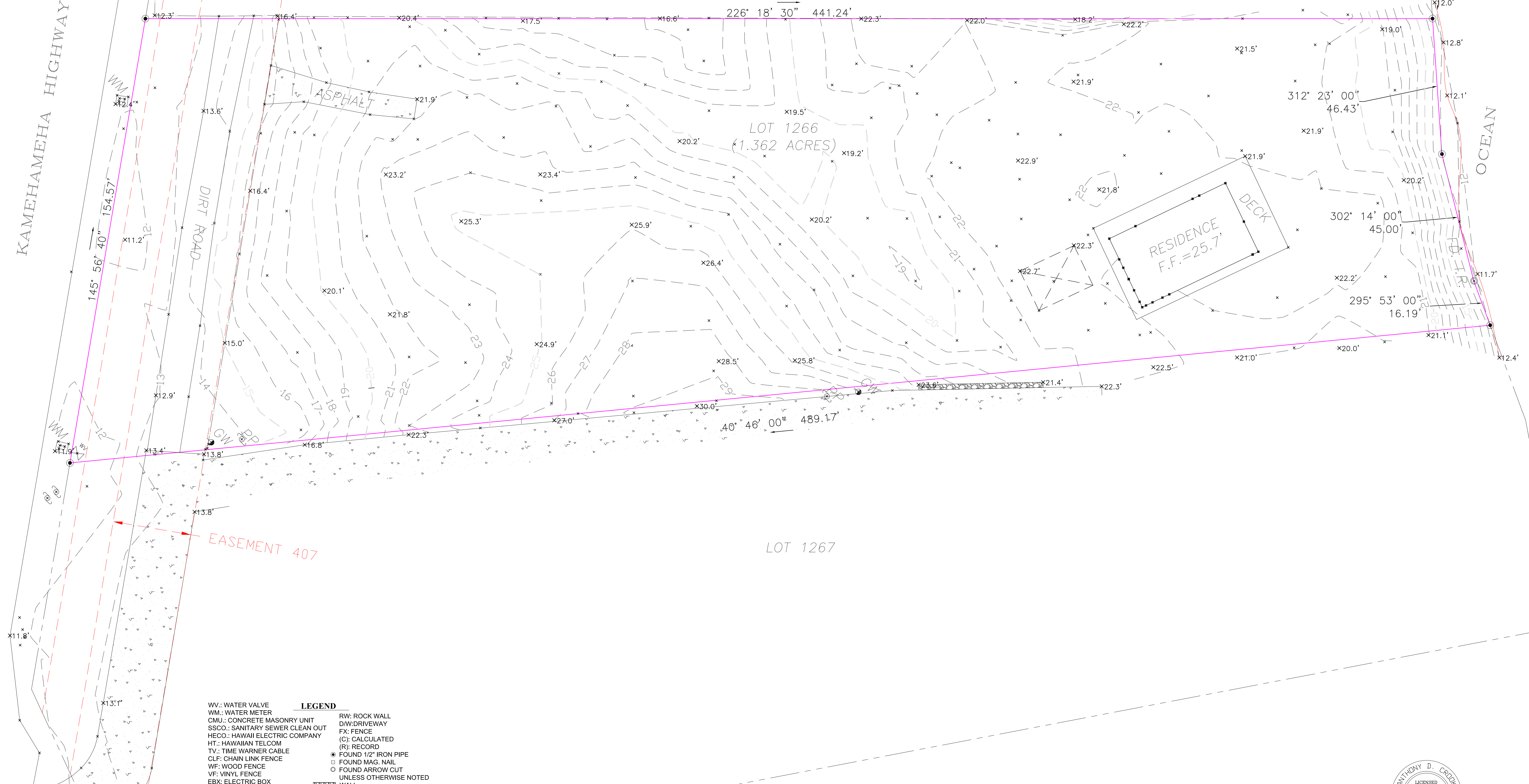
LOT 1266
(1.362 ACRES)

LOT 1267



0 8 16 32
Foot
SCALE: 1"=16'

SHORELINE FOLLOWS ALONG THE VEGETATION LINE - NOT YET CERTIFIED.



- LEGEND**
- WV.: WATER VALVE
 - WM.: WATER METER
 - CMU.: CONCRETE MASONRY UNIT
 - SSCO.: SANITARY SEWER CLEAN OUT
 - HECO.: HAWAII ELECTRIC COMPANY
 - HT.: HAWAIIAN TELCOM
 - TV.: TIME WARNER CABLE
 - CLF.: CHAIN LINK FENCE
 - WF.: WOOD FENCE
 - VF.: VINYL FENCE
 - EBX.: ELECTRIC BOX
 - PP.: POWER POLE
 - MAG.: MAGNETIZED NAIL
 - PL.: PROPERTY LINE
 - PC.: PROPERTY CORNER
 - RW.: ROCK WALL
 - DW.: DRIVEWAY
 - FX.: FENCE
 - (C): CALCULATED
 - (R): RECORD
 - FOUND 1/2" IRON PIPE
 - FOUND MAG. NAIL
 - FOUND ARROW CUT
 - UNLESS OTHERWISE NOTED
 - WALL
 - CONCRETE
 - COVERED
 - STRUCTURE INSIDE PROPERTY
 - STRUCTURE OUTSIDE PROPERTY

TOPOGRAPHIC MAP

LOT 1266
LAND COURT APPLICATION NUMBER 1095, MAP 180

AT HONOLULU, EWA, CITY AND COUNTY OF HONOLULU,
STATE OF HAWAII

AILANA SURVEYING & GEOMATICS LLC
PHONE (808)346-1818
FAX 1-800-655-6297
INFO@AILANASURVEYING.COM

ANTHONY D. CROOK
LICENSED PROFESSIONAL LAND SURVEYOR
No. 12094
HAWAII, USA

THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION
ANTHONY D. CROOK
LICENSED PROFESSIONAL LAND SURVEYOR
CERTIFICATE No. 12094

DAVID Y. IGE
GOVERNOR OF HAWAII



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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 4, 2022

File No.: OA-1967

Ailana Surveying & Geomatics, LLC
P.O. Box 1240
Kula, Hawaii 96790

Dear Applicant:

Subject: Transmittal of Signed Shoreline Certification Maps
Owner(s): Diane Zucco
Tax Map Key: (1) 5-6-001:089

Enclosed please find three (3) copies of the certified shoreline survey maps for the subject property.

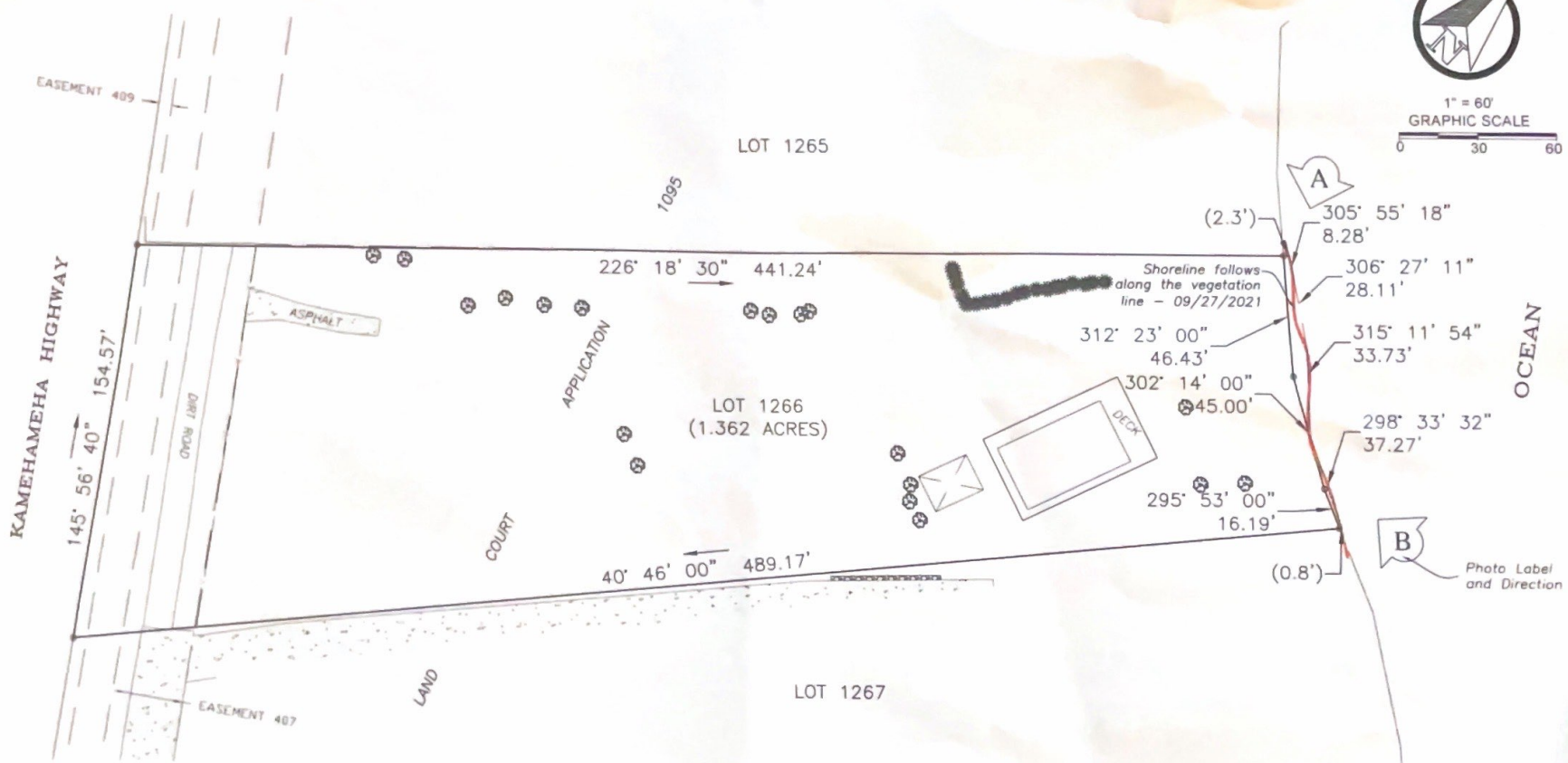
If you have any questions, please feel free to call us at (808) 587-0424. Thank you.

Sincerely,

Cal Miyahara
Shoreline Disposition Specialist

Enclosures

cc: DAGS



Property Address
56-157 Kamehameha Highway
Kahuku, HI 96731

Property Owner
Sea Turtle Estates, LLC
c/o Diane Zucco
56-157 Kamehameha Hwy
Kahuku, HI 96731

The shoreline as delineated in red is hereby certified as the shoreline as of

MAR 04 2022

[Signature]
Chairperson, Board of Land and Natural Resources

SHORELINE MAP

LOT 1266
LAND COURT APPLICATION NUMBER 1095, MAP 180
AT MALAEKAHANA, KOOLAULOA, OAHU, HAWAII



THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION.
MY LICENSE EXPIRES: APRIL 30, 2022
ANTHONY D. CROOK
LICENSED PROFESSIONAL LAND SURVEYOR
CERTIFICATE No. 12094

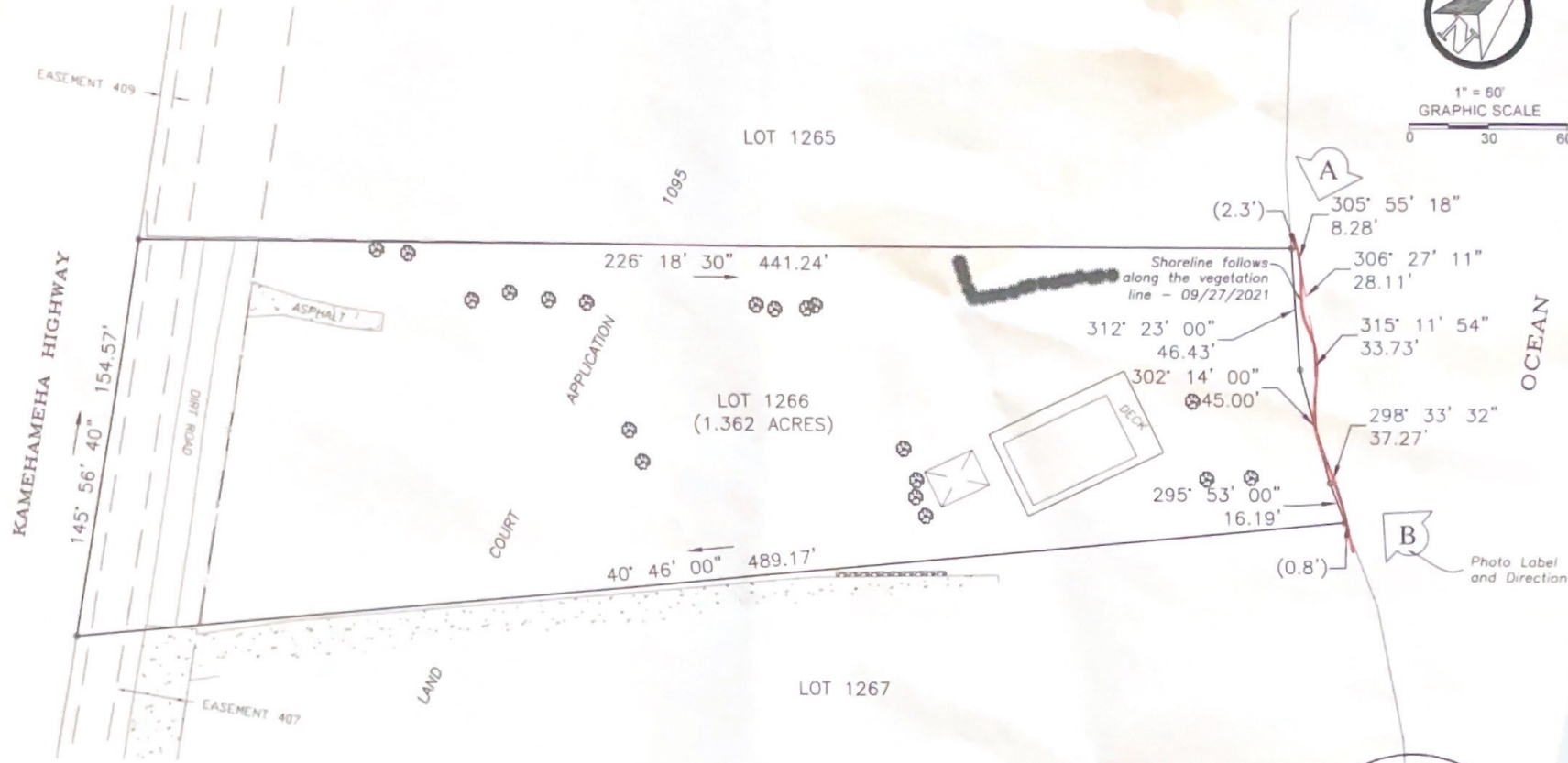
AILANA SURVEYING & GEOMATICS LLC
PHONE (808)346-1818
FAX 1-800-655-6297
INFO@AILANASURVEYING.COM

MAP DATED: January 14, 2022

TMK(1) 5-6-001-089



1" = 60'
GRAPHIC SCALE
0 30 60



Property Address
56-157 Kamehameha Highway
Kahuku, HI 96731

Property Owner
Sea Turtle Estates, LLC
c/o Diane Zucco
56-157 Kamehameha Hwy
Kahuku, HI 96731

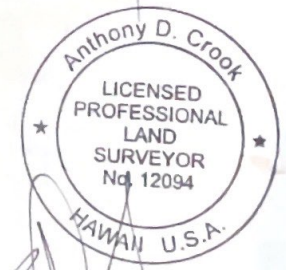
The shoreline as delineated in red is hereby certified as the shoreline as of

MAR 04 2022

[Signature]
Chairperson, Board of Land and Natural Resources

SHORELINE MAP

LOT 1266
LAND COURT APPLICATION NUMBER 1095, MAP 180
AT MALAEKAHANA, KOOLAULOA, OAHU, HAWAII



THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION.
MY LICENSE EXPIRES APRIL 30, 2022
ANTHONY D. CROOK
LICENSED PROFESSIONAL LAND SURVEYOR
CERTIFICATE No. 12094

AILANA SURVEYING & GEOMATICS LLC
PHONE (808)348-1818
FAX 1-800-655-6297
INFO@AILANASURVEYING.COM

MAP DATED: January 14, 2022

TMK(1) 5-6-001-089

**REPORT
GEOTECHNICAL INVESTIGATION**

**PROPOSED RESIDENCES
56-157 KAMEHAMEHA HIGHWAY
KAHUKU, HAWAII 96731
TMK: (1) 5-6-001: 089**

for

SEA TURTLE ESTATES, LLC

Project No. 21-0099
November 29, 2021

SHINSATO ENGINEERING, INC.
98-747 KUAHAO PLACE, #E
PEARL CITY, HI 96782

SHINSATO ENGINEERING, INC.

CONSULTING GEOTECHNICAL ENGINEERS

98-747 KUAHAO PLACE, SUITE E
PEARL CITY, HAWAII 96782
PHONE: (808) 487-7855
FAX: (808) 487-7854

November 29, 2021
Project No. 21-0099

Sea Turtle Estates, LLC
Attention: Diane Zucco, Manager
c/o 4D Designs, LLC
P.O. Box 686
Kailua, Oahu, Hawaii 96734

Dear Ms. Zucco:

This report presents the results of a geotechnical investigation for the proposed residential development at 56-157 Kamehameha Highway in Kahuku, Oahu, Hawaii.

- 1) The subsurface conditions at the site were explored by drilling 3 test borings to depths of 15.0 feet below the existing grade. In general, the borings encountered loose to medium dense, calcareous SAND to the final depths of the borings. No groundwater was encountered in the borings at the time of the field investigation
- 2) Two (2) percolation tests were performed on the property. The percolation tests were performed at depths of 1.88 and 2.38 feet below existing grade. The soil percolation rates were calculated to be faster than 1 minute per inch.
- 3) Special considerations will be required in the design and construction of the project due to existing site conditions. These include but may not be limited to the following:
 - a) The underlying SAND is susceptible to caving especially in the presence of water such as rainfall or surface water runoff. Proper safety precautions should be used when excavating into the underlying soils.
 - b) Compaction of fill and backfill material should be done with care due to the close proximity of the neighboring structures.
- 4) Based on the findings and observations made during this investigation, it is concluded that from a geotechnical perspective, the site may be developed for the intended use provided the recommendations contained in this report are included in the design and construction of the project.
- 5) The proposed structures can be supported on relatively shallow footings. An allowable bearing value of 2,500 psf may be used for footings embedded a minimum of 12-inches below the lowest adjacent grade (measured to the bottom of the footing, and bearing on firm on-site soil and/or properly compacted structural fill).

Details of the findings and recommendations are presented in the attached report.

Sea Turtle Estates, LLC
November 29, 2021
Page Two

This investigation was made in accordance with generally accepted engineering procedures and included such field and laboratory tests considered necessary for the project. In the opinion of the undersigned, the accompanying report has been substantiated by mathematical data in conformity with generally accepted engineering principles and presents fairly the design information requested by your organization. No other warranty is either expressed or given.

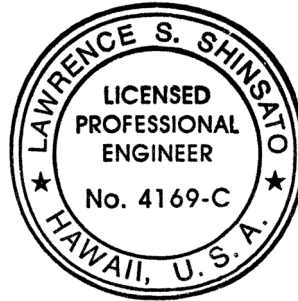
Respectfully submitted,

SHINSATO ENGINEERING, INC.



Lawrence S. Shinsato, P.E.
President

LSS:ls



This work was prepared by me
or under my supervision.
License Expires 04/30/22

GEOTECHNICAL INVESTIGATION REPORT
Proposed Residences
56-157 Kamehameha Highway
Kahuku, Hawaii 96731
TMK: (1) 5-6-001: 089

1.0 INTRODUCTION

This investigation was made for the purpose of obtaining information on the subsurface conditions from which to base recommendations for foundation design and to provide soil percolation rate data for the proposed residential development at 56-157 Kamehameha Highway in Kahuku, Oahu, Hawaii. The location of the site, relative to the existing streets and landmarks, is shown on the Vicinity Map, Plate A-1.

2.0 SCOPE OF WORK

The services included drilling 3 test borings to the depths of 15.0 feet below existing grade, performing 2 field percolation tests at depths of 1.88 and 2.38 feet below the existing grade, obtaining samples of the underlying soils, performing laboratory tests to determine pertinent engineering properties of the representative soil samples, and performing an engineering analysis to determine foundation design parameters. The following information is provided for use by the Architect and/or Engineer:

- 1) General subsurface conditions, as disclosed by the test borings.
- 2) Physical characteristics of the soils encountered including the results of the field percolation tests.
- 3) Recommendations for foundation design, including bearing values, embedment depth and estimated settlement.
- 4) Recommendations for placement of fill and backfill.
- 5) Special considerations.

3.0 PLANNED DEVELOPMENT

From the information provided, the project will consist of constructing new residential structures and septic systems on the property.

4.0 FIELD INVESTIGATION

4.1 Drilling

The subsurface explorations consisted of drilling test borings at the locations shown on the Plot Plan, Plate A-2. The test borings were advanced with a Geo Probe 6620 drill rig using continuous flight augers.

The augers are 4 inch diameter continuous helical flight augers with the lead auger having a head equipped with changeable cutting teeth. Soil cuttings are brought to the surface by the continuous flights. After the bore hole is advanced to the required depth and cleaned of cuttings by additional rotation of the augers, the augers are retracted for soil sampling or in-situ testing.

Probing is done to determine soil consistency at deeper depths. The probe consists of a 2 inch diameter steel tip that is attached to AW drilling rods. The probe is driven into the underlying material with a 140 pound safety hammer falling from a height of 30 inches. The number of blows required to drive the sampler at 12 inch intervals are shown on the boring logs.

4.2 Soil Sampling

Samples of the underlying soils were obtained from the boring by driving a soil sampler into the subsurface material using a 140-pound safety hammer falling from a height of 30 inches. The sampler was driven approximately 18 inches into the soil (or until refusal is encountered) and the number of blows required to drive the sampler was recorded at 6 inch intervals. The blow count for the last 12 inches of sampling are shown on the boring log.

The sampler was retracted from the bore hole and a section of the retrieved soil was placed in a close-fitting waterproof container in order to retain field conditions until completion of the laboratory tests. Samples were then transported to the laboratory for testing.

Soil samples were obtained using a modified California Sampler which is a 3 inch outside diameter, 2.5 inch inside diameter steel sampler with an interior lining of one-inch long, thin brass rings.

4.3 Field Logging

During the subsurface explorations, continuous logs of the borings were kept. The logs included visual classification of the soils encountered using the Unified Soil Classification System as well as other pertinent information which were gathered during the drilling process. The final boring logs included in this report incorporates engineering analysis and results of the laboratory tests.

4.4 Field Percolation Testing

The percolation test was performed using test procedures developed by the Robert A. Taft Sanitary Engineering Center. In general, this consists of drilling the test hole, filling the bottom with 2 inches of coarse sand and then saturating the hole with water (overnight for clayey soils). The test is conducted by filling the hole with clear water and then measuring the drop in water level with time. The results of the measurements are used to determine the percolation rate.

5.0 SITE CONDITIONS

5.1 Surface

The property is located on the ocean side of Kamehameha Highway approximately 400 feet north of the intersection with Gun Stock Road. The lot is bordered by residential lots to the northwest, southeast, the ocean to the northeast, and Kamehameha Highway to the southwest.

At the time of the field investigation the lot was occupied by an existing single story residential structure at the back portion of the lot.

From the topographic map provided to us, surface elevations range from approximately +12' at the front of the lot along Kamehameha Highway then slopes upward into the property. Within the property, the surface elevation range from approximately +14' to +29'. There is an existing house at the back of the lot.

5.2 Subsurface

The subsurface condition at the site was explored by drilling 3 test borings to depths of 15.0 feet below the existing grade. The locations of the borings are shown on the Plot Plan, Plate A-2. Detailed logs of the borings are presented in the Log of Borings, Plates B-1 through B-3.

In general, the borings encountered loose to medium dense, calcareous SAND to the final depths of the borings. No groundwater was encountered in the borings at the time of the field investigation

From the USDA Soil Conservation Service "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii," the site is located in an area designated as Jaucas sand, 0 to 15 percent slopes (JaC). This series consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean on all islands. These soils developed in wind- and water-deposited sand from coral and seashells. On this soil, permeability is rapid. Runoff is very slow to slow, and the hazard of water erosion is slight, but wind erosion is a severe hazard where vegetation has been removed.

6.0 LABORATORY TESTING

6.1 General

Laboratory tests are performed on various soil samples to determine their engineering properties. Descriptions of the various tests are listed below.

6.2 Unit Weight and Moisture Content

The in-situ unit weight and moisture content of the samples are used to correlate similar soils at various depths. The sample is weighed, the volume determined, and a portion of the sample is placed in the oven. After oven-drying, the sample is again weighed to determine the moisture loss. The data is used to determine the wet-density, dry-density, and moisture content.

6.3 Direct Shear

Direct shear tests are performed to determine the strength characteristics of the representative soil samples. The test consists of placing the sample into a shear box, applying a normal load and then shearing the sample at a constant rate of strain. The shearing resistance is recorded at various stages of the test. By repeating the test with varying normal load conditions, the angle of internal friction and cohesion can be determined.

6.4 Classification Tests

The terms and symbols used to describe the soil materials are based on the Unified Soil Classification System which provides a basis for classifying soils using either visual methods or laboratory test results. Laboratory tests include sieve and hydrometer analysis for particle size distribution, and Atterberg Limits test for liquid limit, and plasticity index determination.

Grain-size distribution of the soil is determined by passing the soil through a series of sieves. If 50 percent or more of the soil by dry weight passes the #200 sieve, the soil is classified as fine-grained. If more than 50 percent of the soil by dry weight is retained on the #200 sieve, the soil is classified as coarse grained.

Coarse grained soils are described as follows:

Boulder	Material retained on a 12-inch square sieve
Cobble	Material passing a 12-inch sieve but retained on a 3-inch sieve
Gravel	Material passing a 3-inch sieve but retained on a #4 sieve
Sand	Material passing a #4 sieve but retained on a #200 sieve

Fine-grained materials are silts and clays. The liquid limit and plastic limit results from an Atterberg Limits test are used to determine if the soil is a silt or clay.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 General

Based on the findings and observations made during this investigation, it is concluded that from a geotechnical perspective, the site may be developed for the intended use provided the recommendations contained in this report are included in the design and construction of the project.

7.2 Special Considerations

Special considerations will be required in the design and construction of the project due to the existing soil conditions. These include but may not be limited to the following:

- a) The underlying SAND is susceptible to caving especially in the presence of water such as rainfall or surface water runoff. Proper safety precautions should be used when excavating into the underlying soils.
- b) Compaction of fill and backfill material should be done with care due to the close proximity of the neighboring structures.

7.3 Foundations

An allowable bearing value of 2,500 pounds per square foot may be used for footings that bear on either firm on-site soil and/or on properly compacted structural fill. The bearing value is for dead plus live loads and may be increased by one-third (1/3) for momentary loads due to wind or seismic forces. If any footing is eccentrically loaded, the maximum edge pressure shall not exceed the bearing pressure for permanent or for momentary loads.

The minimum footing embedment depth shall be as follows:

- a) For footings constructed on relatively level ground: minimum 12-inches below the lowest adjacent finished grade (measured to the bottom of the footing).
- b) For footings located adjacent to utility trenches: the bottom of the footing shall be deepened below a 1 horizontal to 1 vertical plane projected upwards from the edge of the utility trench.
- c) For footings located on or adjacent to slopes: the footing shall be deepened such that there is a minimum horizontal distance of 5-feet from the edge of the footing to the slope face.
- d) For footings located adjacent to retaining walls or other structural elements which are not designed for surcharge loading, the new footing shall be deepened below a 45-degree plane projected upwards from the adjacent structure.

The bottom of all footing excavations shall be compacted to a minimum of 95% of the maximum dry density as determined by the ASTM D1557 test procedure. Any soil at the bottom of footing excavations that cannot be compacted shall be removed to firm soil and the resulting depression shall be backfilled with compacted structural fill material prior to laying of steel or pouring of concrete.

7.4 Seismic Design Parameters

In accordance with the 2012 International Building Code the occupancy category for this project was assumed to be Category II. The seismic site parameters are as follows:

Site class	D
Mapped spectral acceleration parameter, S_s	0.553
Mapped spectral acceleration parameter, S_1	0.155
Site coefficient, F_a	1.358
Site coefficient, F_v	2.29
MCER spectral response acceleration parameter, $S_{MS} = F_a \times S_s$	0.75
MCER spectral response acceleration parameter, $S_{M1} = F_v \times S_1$	0.355
Spectral response acceleration parameter, $S_{DS} = S_{MS} \times 2/3$	0.5
Spectral response acceleration parameter, $S_{D1} = S_{M1} \times 2/3$	0.236
Seismic design category	D
Site Modified peak ground acceleration: PGA_M	0.342

7.5 Settlement

Under the fully applied recommended bearing pressure of 2,500 psf, it is estimated that the total settlement of a 4 foot square column footing or a 3 foot wide continuous footing that bear on firm on-site soils and properly compacted fill will be on the order of 1-inch. The estimated settlement may be assumed to increase or decrease in proportion to the increase or decrease in the applied bearing pressure and footing width.

7.6 Lateral Earth Pressures and Frictional Resistance

The values for the lateral earth coefficients and frictional resistance may be assumed as follows:

Material	Unit Weight (pcf)	Passive Coefficient (Kp)	Active Coefficient (Ka)	At-rest Coefficient (Ko)	Coefficient of friction
on-site sandy soils	110	3.0	0.27	0.43	0.60
properly compacted structural fill	140	3.5	0.22	0.36	0.80

*Lateral resistance and friction may be combined.

7.7 Slab-on-Grade

Conventional slab-on-grade construction may be used. However, during construction should expansive clay soils be found under slab areas, the expansive soils shall be overexcavated to a minimum depth of 24-inches below the bottom of slab elevation and be replaced with non-expansive granular fill. The thickness of the non-expansive granular fill may be reduced to 6-inches for exterior concrete slabs such as sidewalks.

It is recommended that concrete floor slabs that have moisture sensitive floor covering be constructed using a vapor retarder and a capillary moisture barrier of 4-inches of clean gravel cushion material such as #3-fine gravel (ASTM Designation No. 67).

For design of slabs, a modulus of subgrade reaction of 100 pci may be used for the on-site soil or properly compacted structural fill.

Preparation of the subgrade shall be in accordance with the Site Preparation and Grading section to this report.

7.8 Pavement Design

Flexible (asphaltic concrete) pavement areas to be used by cars and light trucks (up to 10,000 pound GVW) may be designed using 2-inches of asphaltic concrete on 6-inches of compacted base course gravel. In areas used by heavier vehicles, the flexible pavement section shall be increased to 3-inches of A.C., 6-inches of base course gravel, and 6-inches of select borrow.

Rigid (concrete) pavements for cars and light trucks may be designed using 5-inches of concrete poured on 4-inches of compacted base course gravel. For heavier traffic, the pavement section should be increased to 6-inches of concrete and 6-inches of compacted base course gravel. Expansion/contraction joints shall be provided in the concrete slab. Prior to constructing the concrete pavement, the subgrade soil shall be moisture conditioned to plus or minus 2 percent of optimum moisture content (ASTM D1557-00).

The base course gravel, any select borrow and the top 6 inches of subgrade shall be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D1557-00 test procedure. All material quality and compaction requirements for the pavement section shall be in accordance with Hawaii Standard Specifications for Road and Bridge Construction, dated 2005.

7.9 Soil Percolation and Infiltration Test Results

Two (2) falling head percolation tests were performed to determine the percolation/infiltration rates of the on-site soils. The tests consisted of drilling the borings using a 4-inch diameter auger to depths of 1.88 and 2.38 feet below existing grade. The location of the tests are shown on the Plot Plan, Plate A-2.

The falling head percolation tests were performed in general accordance with the procedures detailed in the Hawaii Administrative Rules 11-62 Appendix C. The details and results of the tests are presented on the attached Department of Health - Wastewater Branch, Individual Wastewater System (IWS) - Site Evaluation/Percolation Test forms.

For the purpose of estimating the soil infiltration rate for the disposal of surface water runoff, the Porchet Method was used to estimate the soil infiltration rate based on the results of the falling head percolation tests.

The results of the tests are as follows:

Percolation Test No.	Test Depth (ft)	Percolation Rate (min/inch)	Infiltration Rate (inch/hour)	Soil Description
P-1	1.88	0.42	36.0	SAND
P-2	2.38	0.13	115.4	SAND

The Department of Health Recommended Standards (Chapter 10) indicate that leach fields (absorption trenches) should not be used in soils with a percolation rate slower than 60 minutes per inch. Based on the results of the tests, it is concluded that leach fields (absorption trenches) may be used for the disposal of septic sewage effluent.

The percolation rate of the underlying SAND is faster than 1 inch per minute. Reduction in the percolation rate may be required. Installation of a layer of base course gravel can be used to reduce the flow rate.

If a reduced percolation rate is required, well-graded GRAVEL such as untreated base course gravel may be used as backfill material. Untreated base course gravel (UTB) shall be imported quarry material with gradation meeting the City and County of Honolulu Standard Specifications for Untreated Base Course Aggregate.

UTB is classified as a well-graded gravel. The coefficient of permeability for well-graded gravel is on the order of 0.001 cm/sec. From the "Septic Tank Systems" by Winneberger (1984), the correlation between the coefficient of permeability and the soil percolation rate is given by the equation:

$$\log k = -4.76 + 1.55 \log p$$

where k = Darcy's coefficient of permeability (cm/sec)
 p = USPHS percolation rate (in/hr)

Using this equation and a coefficient of permeability of 0.001 cm/sec for the UTB, the approximate percolation rate is calculated as 4.39 min/in. If a reduction in the percolation rate is required, we recommend using 5 minutes per inch for the UTB material.

7.10 Site Preparation and Grading

It is recommended that the site be prepared in the following manner:

- a) Clearing and Grubbing:
In all areas to receive fill and in structural areas, all vegetation, weeds, brush, roots, stumps, rubbish, debris, soft soil and other deleterious material shall be removed and disposed of off-site.
- b) Preparation of Ground to Receive Fill:
The exposed surface shall then be scarified to a depth of 6 inches, moisture conditioned to near optimum moisture (ASTM D1557) and then compacted to the degree of compaction specified below. If soft or loose spots are encountered, the loose/soft areas shall be removed to firm material and the resulting depression shall be filled with properly compacted fill.
- c) Types of Fill and Backfill Material:
Structural fill and backfill shall be described as material placed beneath buildings and extending a horizontal distance of 3 feet beyond the edge of the building line. Non-structural fill shall be described as material placed beyond 3 feet from the building line.
- d) Material Quality:
Fill and backfill material shall consist of soil which is free of organics and debris. The maximum size particle for fill and backfill material shall be as follows:

Structural Fill	
Top 2 feet below finished subgrade (FSG)	3"
Below 2 feet from FSG	6"
Non-structural fill and Pavement areas	
Top 2 feet from FSG	3"
2 to 6 feet from FSG	6"
Below 6 feet from FSG	12"

Structural fill shall have a Unified Soil Classification of either GW, GM, SW, or SM. The plasticity index of the fine portion as determined by the ASTM D4318 test shall be less than 15.

e) Placement of Fill and Backfill:

Each layer of fill and backfill material shall be placed in lifts not exceeding the following (loose thickness):

Structural Fill (including pavement areas)	
Top 2 feet below finished subgrade (FSG)	8"
Below 2 feet from FSG	12"
Non-structural fill	
Top 6 feet from FSG	12"
Below 6 feet from FSG	*

*The loose thickness of this layer shall not exceed 1.5 times the largest size particle; this is predicated upon proper compaction of each lift.

Prior to placing of fill and backfill material, the material shall be aerated or moistened to near optimum moisture content (ASTM D1557 test procedure). Where fill is placed on existing ground that is steeper than 5 horizontal to 1 vertical, the existing ground surface shall be benched into firm soil as the fill is placed.

f) Degree of Compaction:

Each layer of fill and backfill shall be thoroughly compacted from edge to edge using conventional compaction equipment designed for the purpose. The minimum degree of compaction for each layer (as determined by the ASTM D1557 test procedure) shall be as follows:

Structural Fill (under and 3 feet beyond the edge of buildings)	95 %
Non-structural fill	* 90 %

*Where compaction tests are not practical due to the size of the material, each layer shall be compacted by track rolling until it does not weave or creep under the weight of the track rolling equipment (D-8 dozer or larger).

It is particularly important to see that all fill and backfill soils are properly compacted in order for the design parameters to remain applicable.

- g) Preparation of Footing Excavations:
Footing excavations shall be cleaned of loose material and soils disturbed by the excavation prior to placing of steel or pouring of concrete. Any soft soil encountered at the bottom of the footing excavation shall be removed to firm material. The resulting depression shall then be backfilled with properly compacted structural fill.
- h) Site Drainage:
During construction, drainage shall be provided to minimize ponding of water adjacent to or on foundation and pavement areas. Ponded areas shall be drained immediately. Any subgrade soil that has become soft due to ponding shall be removed to firm material and replaced with compacted structural fill.

8.0 INSPECTION

During the progress of construction, so as to evaluate compliance with the design concepts, specifications and recommendations contained in this report, it is recommended that a representative from this office be present to observe the following operations:

- 1) Site preparation and grading including field density tests for soil compaction.
- 2) Any special inspection services including a report after grading that may be required by the City to close the grading permit.
- 3) Foundation excavations to verify that suitable bearing material has been encountered at the bottom of foundation excavations.

9.0 REMARKS

The conclusions and recommendations contained herein are based on the findings and observations made at the test boring locations. If conditions are encountered during construction which appear to differ from those disclosed by the explorations, this office shall be notified so as to consider the need for modifications.

This report has been prepared for the exclusive use of Sea Turtle Estates, LLC and their respective design consultants. It shall not be used by or transferred to any other party or to another project without the consent and/or thorough review by this facility. Should the project be delayed beyond the period of one year from the date of this report, the report shall be reviewed relative to possible changed conditions.

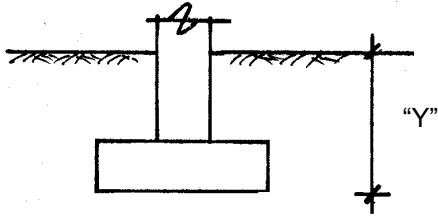
Samples obtained in this investigation will deteriorate with time and will be unsuitable for further laboratory tests within one (1) month from the date of this report. Unless otherwise advised, the samples will be discarded at that time.

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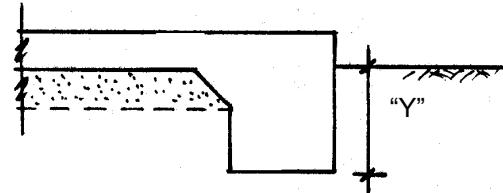
The following are included and complete this report:

	<u>Plate</u>
Foundation Design Details -----	GE-1
Vicinity Map -----	A-1
Plot Plan -----	A-2
Logs of Test Borings -----	B-1 through B-3
Results of Laboratory Tests -----	L-1 through L-3
DOH-IWS_Site Evaluation/Percolation Test Forms	

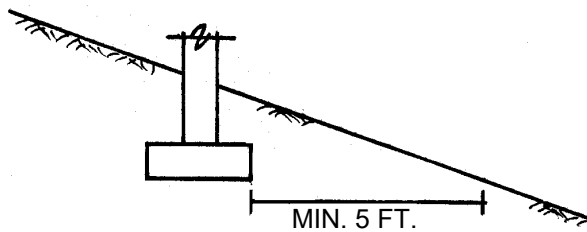
- "Y" = min. 12-inches to bottom of footing.
- Allowable soil bearing pressure = 2,500 psf for footings bearing on firm on-site soil or properly compacted structural fill.
- Remove any soft soil found at bottom of the footing trench and replace with compacted structural fill.
- Reinforcing details to be provided by others.
- Site Class (2012 IBC): D (stiff soil profile)



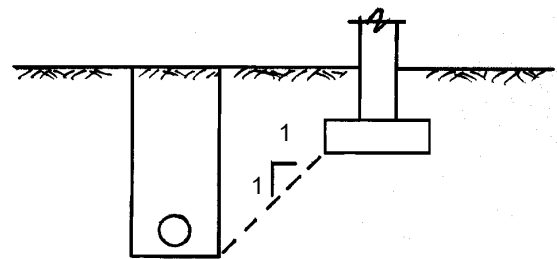
COLUMN FOOTING



THICKENED EDGE FOOTING

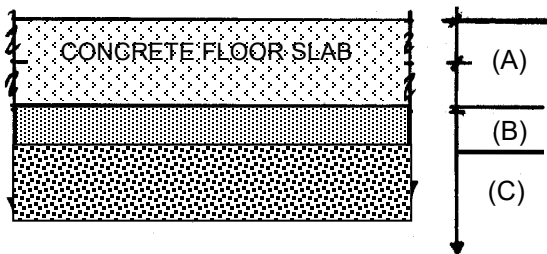


FOOTING ON SLOPE



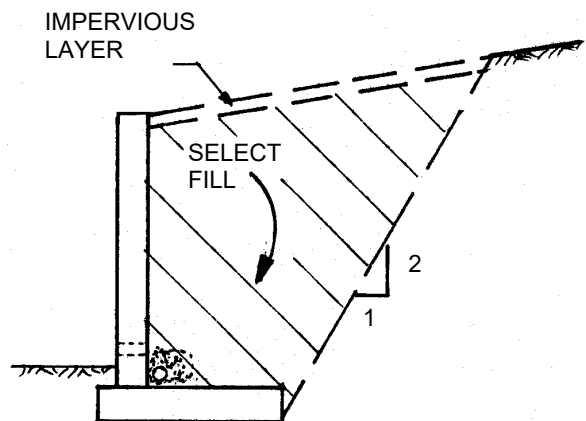
FOOTING ADJACENT TO UTILITY TRENCH

FOOTING EMBEDMENT DEPTH DETAILS



- (A) Slab thickness and reinforcing details by others.
- (B) Vapor retarder over capillary clean gravel fill. Detail by others.
- (C) Firm on-site soil and/or compacted structural fill.

SLAB-ON-GRADE



Provide backfill drainage using weepholes or a footing drain; Cap the top 12-inches of backfill with an impervious layer (clayey soil, concrete AC, etc.) If the on-site clayey soil is used as backfill material in lieu of select (granular) fill, design the wall for a higher active earth pressure.

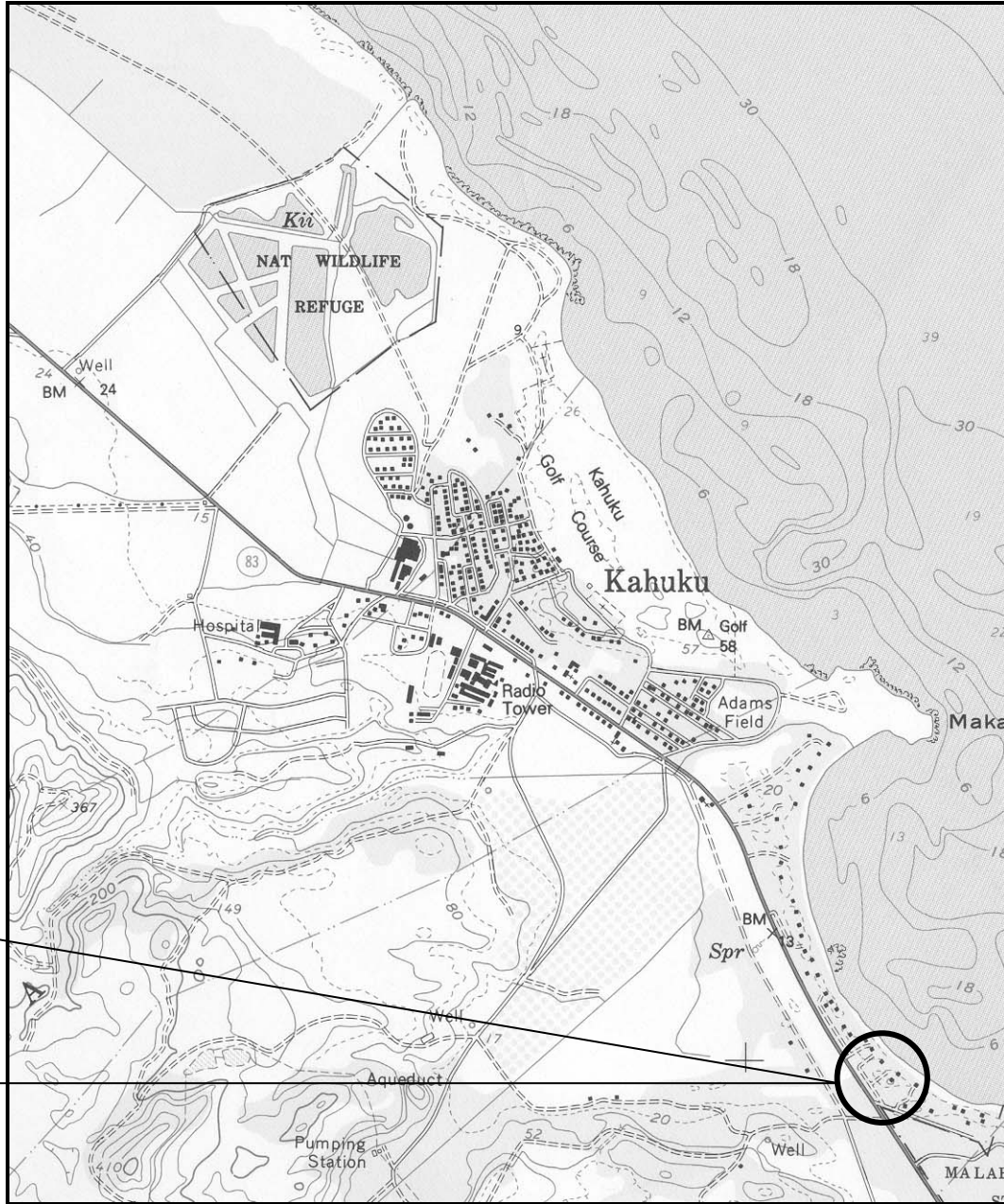
RETAINING WALL BACKFILL

Project: SEA TURTLE ESTATES, LLC
56-157 KAMEHAMEHA HIGHWAY
Project No. 21-0099

SHINSATO ENGINEERING, INC.
Consulting Geotechnical Engineers
98-747 Kuahao Pl. Pearl City, HI 96782

**PLATE
GE-1**

VICINY MAP

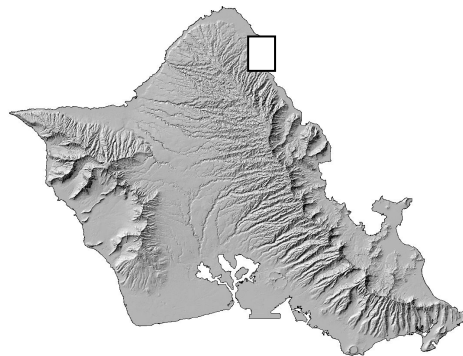


TRUE
NORTH



SITE
LOCATION

REFERENCE:
USGS TOPOGRAPHIC MAP
KAHUKU QUADRANGLE
DATED 1998
SCALE: 1"=2000'

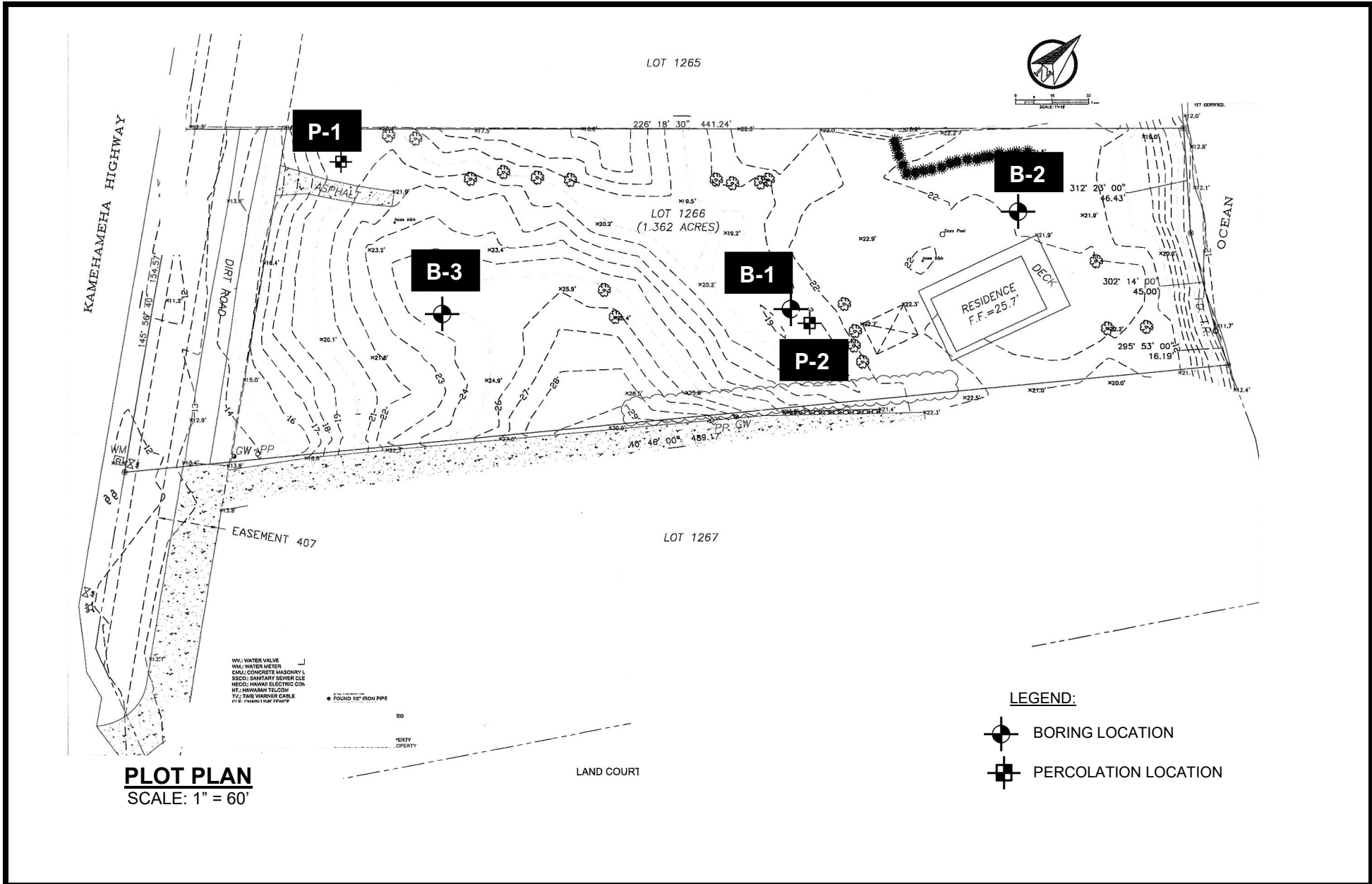


Project: SEA TURTLE ESTATES, LLC
56-157 KAMEHAMEHA HIGHWAY
Project No. 21-0099

Shinsato Engineering, Inc.
Consulting Geotechnical Engineers

98-747 Kuahao Pl. #E, Pearl City, HI 96782

**PLATE
A-1**



Project: SEA TURTLE ESTATES, LLC
 56-157 KAMEHAMEHA HIGHWAY
 Project No.: 21-0099

Shinsato Engineering, Inc.
 Consulting Geotechnical Engineers
 98-747 Kuahao Pl. Pearl City, HI 96782 TEST PIT

PLATE
A-2

LOG OF BORING NO. 1

DRILLING METHOD: **GEO PROBE 6620**
 HAMMER WEIGHT (lbs): **140**
 HAMMER DROP (in): **30**

ELEVATION (FT.): **+/-20' (estimate)**
 DEPTH OF BORING (FT.): **15**
 DEPTH TO GROUNDWATER (FT.): **Unknown**
 DATE DRILLED: **September 28, 2021**

DEPTH (FT.)	GRAPHIC SYMBOL	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	BLOWS/FOOT	COLOR	MOISTURE	CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	TORVANE STRENGTH (TSF)
0		SM	silty SAND; trace roots			dark brown	slightly moist	loose				
2		SP	SAND, calcareous, fine to medium grained, no roots		14	tan	moist		75.1	7.47		
4					11				77.7	8.24		
6												
8												
10					10				80.2	6.22		
12								medium dense				
14					24				75.2	10.9		
16			END OF BORING		21				75.7	9.26		
18												
20												
22												
24												
26												
28												
30												

Project: **SEA TURTLE ESTATE, LLC**
56-157 KAMEHAMEHA HIGHWAY
 Project No.: **21-0099**

SHINSATO ENGINEERING, INC.
 CONSULTING GEOTECHNICAL ENGINEERS
 98-747 KUAHAO PL. #E, PEARL CITY, HI 96782

PLATE
B-1

LOG OF BORING NO. 2

DRILLING METHOD: **GEO PROBE 6620**
 HAMMER WEIGHT (lbs): **140**
 HAMMER DROP (in): **30**

ELEVATION (FT.): **+/-21.5' (estimate)**

DEPTH OF BORING (FT.): **15**

DEPTH TO GROUNDWATER (FT.): **Unknown**

DATE DRILLED: **September 28, 2021**

DEPTH (FT.)	GRAPHIC SYMBOL	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	BLOWS/FOOT	COLOR	MOISTURE	CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	TORVANE STRENGTH (TSF)
0		SP	SAND; calcareous, fine to medium grained, trace roots --no roots			tan	slightly moist	loose				
2					15				83.0	6.29		
4					13				80.1	4.8		
6					15				78.9	6.68		
8					13				77.4	8.85		
10												
12												
14					20			medium dense	77.5	9.22		
16			END OF BORING									
18												
20												
22												
24												
26												
28												
30												

Project: **SEA TURTLE ESTATE, LLC**
56-157 KAMEHAMEHA HIGHWAY
 Project No.: **21-0099**

SHINSATO ENGINEERING, INC.
 CONSULTING GEOTECHNICAL ENGINEERS
 98-747 KUAHAO PL. #E, PEARL CITY, HI 96782

PLATE
B-2

LOG OF BORING NO. 3

DRILLING METHOD: **GEO PROBE 6620**
 HAMMER WEIGHT (lbs): **140**
 HAMMER DROP (in): **30**

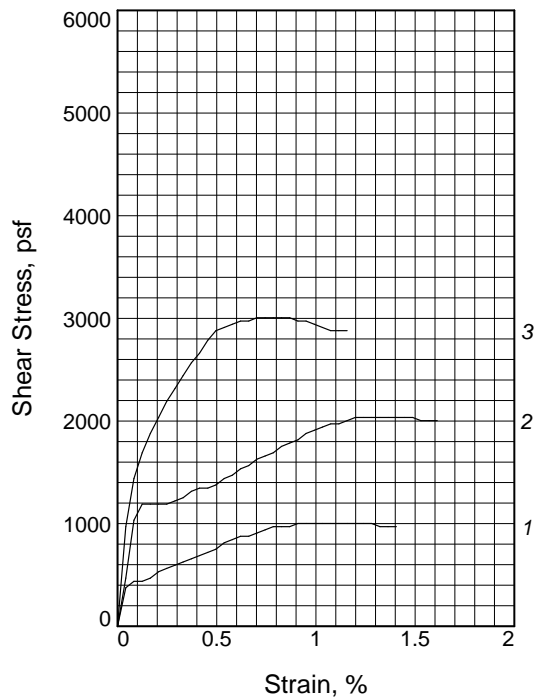
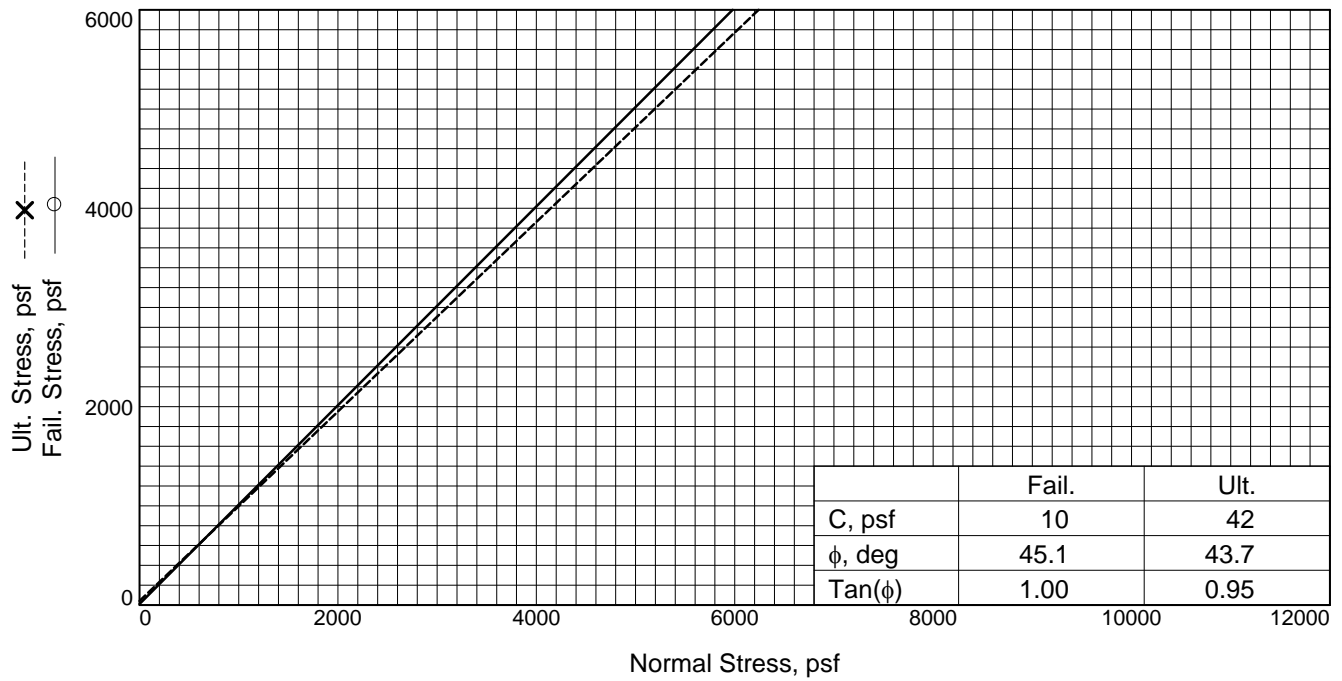
ELEVATION (FT.): **+/-25' (estimate)**
 DEPTH OF BORING (FT.): **15**
 DEPTH TO GROUNDWATER (FT.): **Unknown**
 DATE DRILLED: **September 28, 2021**

DEPTH (FT.)	GRAPHIC SYMBOL	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	SAMPLE	BLOWS/FOOT	COLOR	MOISTURE	CONSISTENCY	DRY DENSITY (PCF)	MOISTURE CONTENT (% OF DRY WT.)	PENETROMETER (TSF)	TORVANE STRENGTH (TSF)
0		SP	SAND; calcareous, fined to medium grained, few roots --no roots									
2					14				67.7	2.49		
4					12			67.5	2.21			
6					13			79.5	6.58			
10					20			76.4	13.7			
14					24			76.4	11.3			
16			END OF BORING									
18												
20												
22												
24												
26												
28												
30												

Project: **SEA TURTLE ESTATE, LLC**
56-157 KAMEHAMEHA HIGHWAY
 Project No.: **21-0099**

SHINSATO ENGINEERING, INC.
 CONSULTING GEOTECHNICAL ENGINEERS
 98-747 KUAHAO PL. #E, PEARL CITY, HI 96782

PLATE
B-3



Sample No.	1	2	3	
Initial	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	N/A	N/A	N/A
	Height, in.	N/A	N/A	N/A
Normal Stress, psf	1000	2000	3000	
Fail. Stress, psf	1002	2035	3005	
Strain, %	0.9	1.2	0.7	
Ult. Stress, psf	971	2004	2880	
Strain, %	1.3	1.5	1.1	
Strain rate, in./min.	N/A	N/A	N/A	

Sample Type:

Description: SAND; fine to medium grained

Assumed Specific Gravity=

Remarks:

Client:

Project: SEA TURTLE ESTATE, LLC

56-157 KAMEHAMEHA HIGHWAY

Source of Sample: 1 **Depth:** 4.0

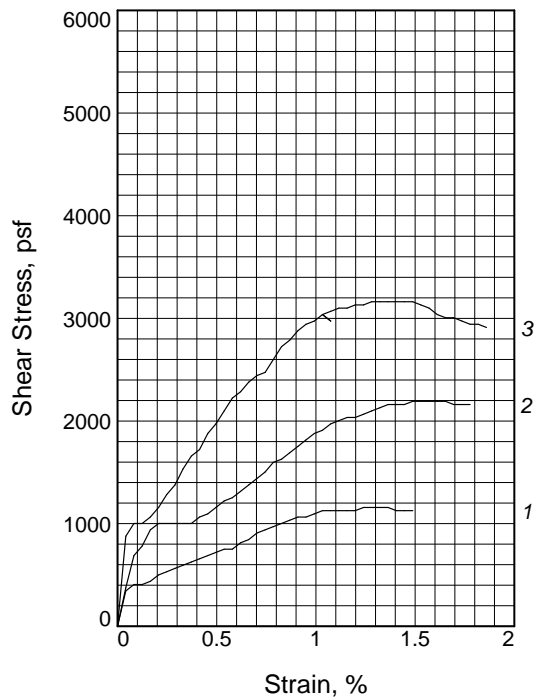
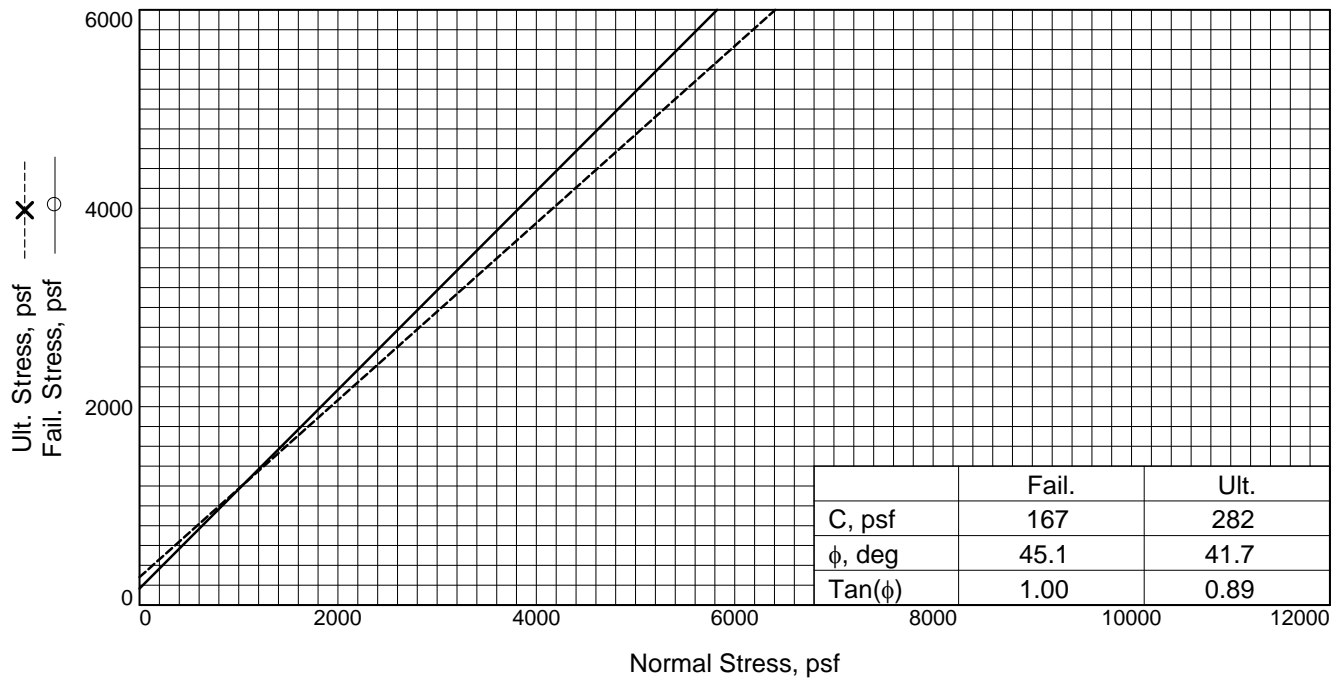
Sample Number: 2

Proj. No.: 21-0099

Date Sampled:

DIRECT SHEAR TEST REPORT
SHINSATO ENGINEERING, INC.
Pearl City, HI

Figure L-1



Sample No.	1	2	3	
Initial	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	N/A	N/A	N/A
	Height, in.	N/A	N/A	N/A
Normal Stress, psf	1000	2000	3000	
Fail. Stress, psf	1158	2191	3162	
Strain, %	1.2	1.5	1.3	
Ult. Stress, psf	1127	2160	2912	
Strain, %	1.4	1.7	1.9	
Strain rate, in./min.	N/A	N/A	N/A	

Sample Type:

Description: SAND; fine to medium grained

Assumed Specific Gravity=

Remarks:

Client:

Project: SEA TURTLE ESTATE, LLC

56-157 KAMEHAMEHA HIGHWAY

Source of Sample: 1 **Depth:** 10.0

Sample Number: 4

Proj. No.: 21-0099

Date Sampled:

DIRECT SHEAR TEST REPORT
SHINSATO ENGINEERING, INC.
Pearl City, HI

Figure L-2

Particle Size Distribution Report



GRAIN SIZE - mm.

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	35.6	64.0	0.4	
□	0.0	0.0	0.0	0.0	12.2	84.4	3.4	

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	2	1	2.0	SAND; fine to medium grained	SP
□	2	3	7.0	SAND; fine to medium grained	SP

SHINSATO ENGINEERING, INC.

Pearl City, HI

Client:

Project: SEA TURTLE ESTATE, LLC
56-157 KAMEHAMEHA HIGHWAY

Project No.: 21-0099

Figure L-3

**DEPARTMENT OF HEALTH - WASTEWATER BRANCH
INDIVIDUAL WASTEWATER SYSTEM (IWS) - SITE EVALUATION/PERCOLATION TEST**

PERCOLATION TEST NO. P-1

Date / Time: 09/28/2021 / 9:30 am Test Performed by: Shinsato Engineering, Inc.

Owner: Sea Turtle Estates, LLC TMK: (1) 5-6-001: 089

Elevation:	<u>+/-21.0</u>	feet
Depth to Groundwater Table:	<u>More than 15</u>	feet below grade
Depth to Bedrock (if observed):	<u>More than 15</u>	feet below grade
Diameter of Hole:	<u>4.0</u>	inches
Depth to Hole Bottom:	<u>1.88</u>	feet below grade

<u>Depth, inches below grade</u>	<u>Soil Profile (color, texture, other)</u>
<u>0 - 22.5</u>	<u>Tan SAND (fine to medium grain, calcareous)</u>
_____	_____
_____	_____

PERCOLATION READINGS:

Time 12 inches of water to seep away: 1 minutes
 Time 12 inches of water to seep away: 2 minutes

Check one:

Percolation tests in sandy soils, recorded time intervals and water drop s at least every 10 minutes for at least 1 hour.

Percolation tests in non-sandy soils, presoaked the test hole for at least 4 hours. Recorded time intervals and water drops at least every 10 minutes for 1 hour of time for the first 6 inches to seep away in greater than 30 minutes record time intervals and water drops at least every 30 minutes for 4 hours or until 2 successive drops do not vary by more than 1/16 inch.

<u>Time Interval</u>	<u>Drop in Inches</u>	<u>Time Interval</u>	<u>Drop in Inches</u>
<u>2.0 minutes</u>	<u>6</u>	_____	_____
<u>2.1 minutes</u>	<u>6</u>	_____	_____
<u>2.5 minutes</u>	<u>6</u>	_____	_____
<u>2.5 minutes</u>	<u>6</u>	_____	_____

Percolation Rate (time/final water level drop): 0.42 minutes/inches

As the engineer responsible for gathering and providing site information and percolation test results, I attest to the fact that above site information is accurate and that the site evaluation was conducted in accordance with the provisions of Chapter 11-62, "Wastewater Systems" and the results were acceptable. I also attest that three feet of suitable soil exists between the bottom of the soil absorption system and the groundwater table or any other limiting layer.

Lawrence S. Shinsato

 Engineer's Signature/Stamp
 License Expires 04/30/22
 IWS Site Evaluation & Percolation Test.wpd ECI June 25, 2003



September 28, 2021

 Date

**DEPARTMENT OF HEALTH - WASTEWATER BRANCH
INDIVIDUAL WASTEWATER SYSTEM (IWS) - SITE EVALUATION/PERCOLATION TEST**

PERCOLATION TEST NO. P-2

Date / Time: 09/28/2021 / 10:30 am Test Performed by: Shinsato Engineering, Inc.

Owner: Sea Turtle Estates, LLC TMK: (1) 5-6-001: 089

Elevation:	<u>+/-21.0</u>	feet
Depth to Groundwater Table:	<u>More than 15</u>	feet below grade
Depth to Bedrock (if observed):	<u>More than 15</u>	feet below grade
Diameter of Hole:	<u>4.0</u>	inches
Depth to Hole Bottom:	<u>2.38</u>	feet below grade

<u>Depth, inches below grade</u>	<u>Soil Profile (color, texture, other)</u>
<u>0 - 28.5</u>	<u>Tan SAND (fine to medium grain, calcareous)</u>
_____	_____
_____	_____

PERCOLATION READINGS:

Time 12 inches of water to seep away: 1 minutes
 Time 12 inches of water to seep away: 1 minutes

Check one:

Percolation tests in sandy soils, recorded time intervals and water drop s at least every 10 minutes for at least 1 hour.

Percolation tests in non-sandy soils, presoaked the test hole for at least 4 hours. Recorded time intervals and water drops at least every 10 minutes for 1 hour of time for the first 6 inches to seep away in greater than 30 minutes record time intervals and water drops at least every 30 minutes for 4 hours or until 2 successive drops do not vary by more than 1/16 inch.

<u>Time Interval</u>	<u>Drop in Inches</u>	<u>Time Interval</u>	<u>Drop in Inches</u>
<u>0.68 minutes</u>	<u>6</u>	_____	_____
<u>0.85minutes</u>	<u>6</u>	_____	_____
<u>0.78 minutes</u>	<u>6</u>	_____	_____
<u>0.78 minutes</u>	<u>6</u>	_____	_____

Percolation Rate (time/final water level drop): 0.13 minutes/inches

As the engineer responsible for gathering and providing site information and percolation test results, I attest to the fact that above site information is accurate and that the site evaluation was conducted in accordance with the provisions of Chapter 11-62, "Wastewater Systems" and the results were acceptable. I also attest that three feet of suitable soil exists between the bottom of the soil absorption system and the groundwater table or any other limiting layer.

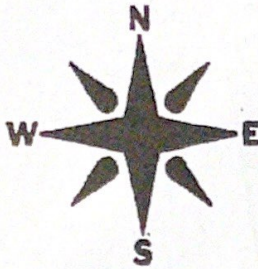
Lawrence S. Shinsato

 Engineer's Signature/Stamp
 License Expires 04/30/22
 IWS Site Evaluation & Percolation Test.wpd ECI June 25, 2003



September 28, 2021

 Date



A.F.M. SURVEYING LLC

676 Bannister Street
Honolulu, Hawaii 96819-2325

August 11, 2021

OLD REPUBLIC TITLE
151 Hekili Street Suite 201
Kailua, Hawaii 96734
Attn.: Donna Uemura

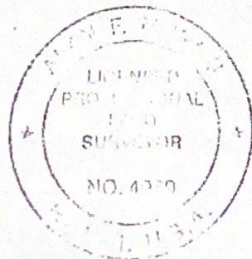
ACKNOWLEDGED, ACCEPTED & APPROVED

Dear Donna,

This is to certify that on August 9, 2021, AFM Surveying LLC staked Lot 1266 of Land Court Application 1095 as shown on Map 180 and further described by Tax Map Key: 5-6-001:089 and street address of 56-157 Kamehameha Highway at Malaekahana, Koolauloa, Oahu, Hawaii.

At the time of this staking, along the common property line between this Lot 1266 and adjoining Lot 1265, we found a 17.0' section of a chain link fence of adjoining Lot 1265 to be located on adjoining Lot 1265, being 1.3' away from this property line. Also, along this property line, we found a 24.4' section of a vinyl gate of adjoining Lot 1265 to be located on adjoining Lot 1265, being between 1.2' to 1.3' away from this property line. Also, along this property line, we found a 273.8' section of a wood fence of adjoining Lot 1265 to be located on adjoining Lot 1265, being between 0.0' to 1.0' away from this property line. Along the common property line between this Lot 1266 and the Pacific Ocean, we found no improvements with the property line following along the vegetation line. Along the common property line between this Lot 1266 and adjoining Lot 1267, we found no improvements. Along the property line fronting Kamehameha Highway, we found that there is no direct access to this Lot 1266 from Kamehameha Highway, with access to this Lot 1266 being along Designated Easements along Kamehameha Highway. See an accompanying map for locations,

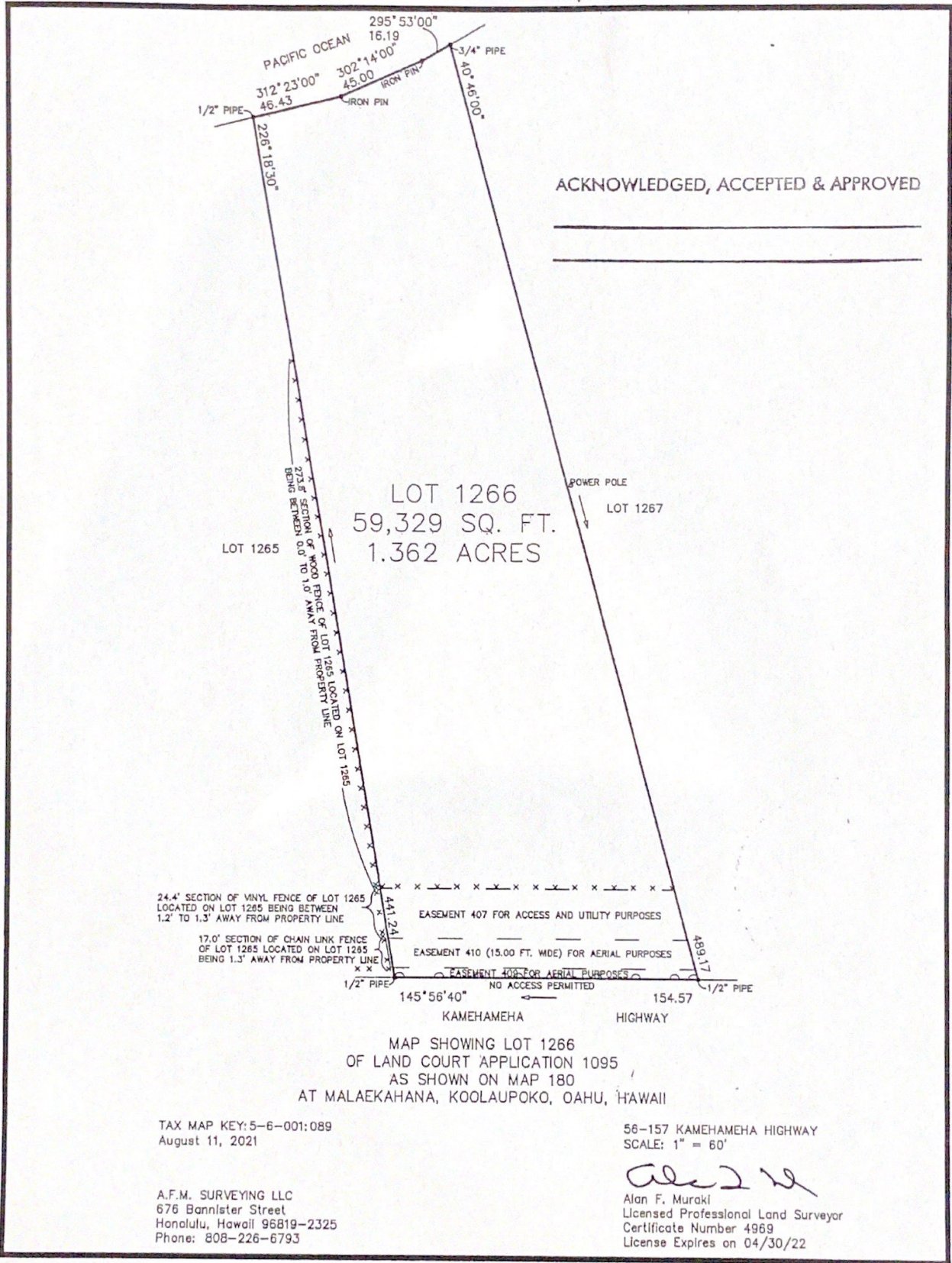
Should you have any questions on this matter, please call me at 226-6793.



Sincerely,


Alan F. Muraki

Licensed Professional Land Surveyor
Certificate Number 4969
License Expires on 04/30/22



Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

APPENDIX C

**Demolition, New Home Replacement with
two (2) new dwellings and carport
BOTANICAL & FAUNAL REPORT**

Biological & Faunal Assessment – Zucco Property

BIOLOGICAL ASSESSMENT - BOTANICAL AND FAUNAL SURVEY

Zucco Property, 56-157 Kamehameha Highway, Kahuku, Oahu
TMK: 1-5-6-001:089

Prepared By: WHALE Environmental Services LLC

Prepared For: Sea Turtles Estates LLC – Zucco Property

February 2023



Biological & Faunal Assessment – Zucco Property

BIOLOGICAL ASSESSMENT - BOTANICAL AND FAUNAL SURVEY

INTRODUCTION

The Zucco Property is located at 56-157 Kamehameha Highway, Kahuku, Oahu, TMK: (1-5-6-001:089). The project area has its driveway frontage on Kamehameha Highway marking the mauka boundary and the Pacific Ocean boundary marking the makai boundary. The goal of the project is to construct a residential family complex on that same property. This biological and faunal assessment was initiated to ensure no biological resources would be significantly impacted by the project development.

CONTACT INFORMATION

Property Information:

Property Name & Operator: Sea Turtle Estates LLC

Mailing Address: 5950 Sherry Lane, Suite 600, Dallas, TX

Phone: n/a

Email: c/o environmental consultant: markahowland@hawaii.rr.com

SITE LOGISTICS

Site Description:

Location of Property: 56-157 Kamehameha Highway, Kahuku, HI 96731

Tax Map Key #(s): 1-5-6-001:089

Size of Property: approximately 1.362 acres

Type of Operation: Residential Family Complex Construction

Annual Precipitation: ~31.21 inches (Online Rainfall Atlas of Hawai'i)

Elevation: 0-21 feet

Zoning: Residential (R-5)

Flooding: 0.2% Annual chance flood hazard

Soils: Art: Artificial JaC Jaucas sands Slopes, 0-20% slope

Biological & Faunal Assessment – Zucco Property

SITE DESCRIPTION

The project area is situated in the Kahuku, Oahu region, with frontage on Kamehameha Highway. Most of the land is level and vegetated with mostly dense, grassed ground cover with lightly scattered shrubs and trees – mostly located on the perimeter with the interior areas mostly grassed. The shrubs and trees are classic shoreline plants and common to the region. For the most part, there is a balance between the herbaceous layer, shrub layer and tree canopy, the site being mostly dominated by the ground layer of grass. The project elevation ranges from 0 to 21 feet above sea level averaging 18-20 feet. Annual rainfall averages 31 inches. Annual air temperature averages 79.6 degrees Fahrenheit. ([Climate Kahuku - Hawaii and Weather averages Kahuku \(usclimatedata.com\)](#))

Project site, Zucco Property-56-157 Kamehameha Highway, Kahuku, HI 96731
Blue line is area surveyed.



Biological & Faunal Assessment – Zucco Property

The original vegetation on the site would have been a limited coastal zone given the shoreline position on the windward side of Oahu. Typical canopy species would have likely included milo, hau, kamani, perhaps noni and naupaka.

After the arrival of humans, a series of forces including fire, agriculture, forestry, and introduced plants, animals, and diseases transformed these common current sites to predominantly non-native vegetation.

It is unclear when the native tree canopy would have been removed. The fact that there is a band of ironwood (*casuarina equisetifolia*) along the makai perimeter of the site in a clearly planting line formation likely means that species was placed as a wind break from the shoreline to the forepart of the site to protect from ocean tradewinds for likely agricultural crop protection. It is believed that this area of Malaekahana was old grazing lands of Castle and Cooke. The rest of the property is mostly lawn areas with some areas grassed. The Kamehameha Highway entrance to the site is ironwood (*casuarina equisetifolia*), and hau (sea hibiscus) *Hibiscus tilaceus*, which is believed to be for screening purposes. The shoreline coastal berm is mainly naupaka (*scaevola servica*) and morning glories (*Hawaiian – hunakai, Latin – ipooea imperati*), along with the ironwood. The inner part of the site is mostly domestic grasses with scattered coconut palms (*coco nucifera*).

SURVEY OBJECTIVES

The objectives of the survey were to:

- Document what plant and animal species occur on the site or may likely occur in the existing habitat.
- Document the status and abundance of each species.
- Determine the presence or likely occurrence of any native flora and fauna, particularly any which are Federally-listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.
- Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

SURVEY METHODS

A walk-through botanical survey method was used following horizontal-to-the shoreline transects in 50' wide swaths. The width surveyed was slightly varied based on vegetation locations, but was generally at least twenty-five feet on either side of a transect on this relatively open site. Notes on vegetative types were photo and word recorded.

Notes were made on plant species, distribution and abundance. Extra emphasis was placed on areas with high diversity (if present), such as gullies with ferns and other pockets of remnant native plants (*not present*). The route was surveyed on February 5th, 2023 and February 7th, 2023. Vegetation on the site is predominantly non-native, with two main habitat types. The midpoint section consists of an open lawn covered by grass as the dominant species. The perimeters of the site section is dominated by mixed trees, and shrub canopy and herbaceous layers of mostly introduced species common to the introduced plants to Hawaii but not common to native species.

REPRESENTATIVE PHOTOS



**Zucco Property
Site Photos**



Biological & Faunal Assessment – Zucco Property

From the entrance to the site on the Kamehameha Highway to about the midpoint of the 1.362 acre site, the grounds are bare in some areas (driveway) or vegetated with stretches of common grass. Outside of the dominant grass understory in the mauka portion, there are several ironwood trees (*casuarina equisetifolia*) at the entrance (*see photos*) There are no native plants in the mauka section.

Between the mauka section and the makai section lays a mid-site area of grass with an ironwood trees (*casuarina equisetifolia*) or coconut (*coco nucifera*) tree canopy in a few areas that have been trimmed on the lower trunk areas. Also behind the ironwood canopy but before the coastal shoreline lies a region with other invasives inter-dispersed with the common grass. These include but are not limited to very scattered, but present are invasive and endemic herbaceous plants such as:

Johnny Jump-ups (*viola tricolor*)
Golden Crown-beard aster (*verbesina encelinides*)
Morning Glories (*ipomoea imperati*)
Seedling 'Koa haole (*leucaena leucocephala*)
Goosefoot (*chenopodium oahuense*)
Assorted Sedges (*fimbristylis cymosa*)

MAKAI SECTION

The makai portion of the site is predominantly a sandy coastal zone with a dune-lining row of shrubs of naupaka (*scaevola servica*). As well, on the perimeters of the site to the east, tree heliotrope (*tournefortia argenica*) was seen as well. Morning Glories (*ipomoea imperati*) were seen in open areas of the coastal berm.

Non-native shrubs are trying to grow in the few sunny openings, but also appear stunted. 'Koa haole (*leucaena leucocephala*) is the most common of these, but less than of dozen of this normally highly invasive species are established. A few Hawaiian asters are in the area, along with the goosefoot and morning glories.

Most of the project area has been heavily impacted by previous human disturbances and is currently dominated by hardy non-native plants (grass). None are of special conservation concern. No special native plant habitats occur on the project site that is not found elsewhere in this part of the island. The proposed project is not expected to have a significant negative impact on the botanical resources in this part of Oahu.

FAUNAL SURVEY METHODS

A walk-through survey method was conducted in conjunction with the botanical survey. Field observations were made with the aid of binoculars and by listening to vocalizations.

Notes were made on species, abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. Conspicuous insects were noted.

In addition, one dusk/evening visit was made to record crepuscular activities and vocalizations and to look for presence of Hawaiian Hoary Bats (*Lasiurus cinereus semotus*). Along with visually scanning the sky for bats, active ultrasonic bat detectors were used to help detect bats. None were observed.

The site was surveyed on February 5th, 2023 and February 7th, 2023. Dusk/Night visit was on February 7th, 2023.

Hawaiian Hoary Bats are present over all of Oahu, some of their highest numbers occur in forested sections of the mid-elevations, and they have been well documented from the Kahuku Training Area Army Reserve and at Peacock Flats in the Waianae Range. No bats were detected during the night survey for this project, which is outside of that common habitat region. As well, it is unlikely that they frequent this low elevation flat and barren area.

Hawaiian Hoary Bats roost in tall trees in sheltered areas, such as on the branch tips of mature Eucalyptus trees. The trees on this site are somewhat stunted by salt spray, or not suitable for habitat, and not all of species seen to host the bats. The bats give birth to and raise their young in the summer. Avoiding cutting large trees during the summer months will help minimize potential impact to young bats that have not yet learned to fly, though this is an unlikely scenario given unsuitable host species and no plans to affect perimeter tree species in construction plans.

There are no signs of game mammals that would have commonly been found within sites which would include feral pigs. There is a potential for feral pigs – no presence observed in places, and no scat was observed. Other mammals likely to utilize this property, but which were not observed or heard; include rats (*Rattus spp.*), mice (*Mus domesticus*), cats (*Felis domesticus*) and mongoose (*Herpestes javanicus*).

A complete inventory of the insects was beyond the scope of this survey. Conspicuous insects were noted and special effort was made to look for native insects of conservation concern. In general, there were few insects present found on-site. Perhaps the salt air, lack of wetlands and monotypic vegetation contributed to that.

Biological & Faunal Assessment – Zucco Property

Honey bees (*Apis mellifera*) were one of the only sighted insects. They could be heard buzzing in warm sunny areas and were observed visiting the naupaka and morning glory flowers on the shoreline.

There were no detected galls on or leaves of trees that would appear to be chewed on. Vacancy of insect damage indicates insect presence is sparse. Common houseflies were detected off-site along the shoreline.

More intensive surveys would undoubtedly turn up many more cryptic species, though it is unlikely any would be of conservation concern.

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Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

APPENDIX D

**Demolition, Replacement construction with
two (2) New dwellings & Carport**

**PHASE 1 ENVIRONMENTAL
SITE ASSESSMENT (HAZMAT)**



Sea Turtle Estates LLC Environmental Site Assessment

TMK: (1) 5-6-001: 077

Zucco Property
Sea Turtle Estates LLC
Kahuku

February 2023



*Speak to the 'aina...
Work with Lokahi*

HARMONY AND BALANCE

Phase I Environmental & Historical Review & Investigation

Phase I Environmental & Historical Review & Investigation

Introduction to Phase I ESA and Environmental Data Report (EDR)

The following report contains a field examination of 56-157 Kamehameha Highway, HI under Phase I ESA standards involving surface visual observations for any potential or existing hazardous wastes; and a data research examination of present or historical spills, incidents, land use changes and more. Using the Flood Hazard Assessment Tool (FHAT), flood zone information was obtained. Historical Aerial Photographs were obtained. An Envirosearch database was ordered searching local, state and federal records for any reported incidents. This report begins with common acronyms and abbreviations commonly used in Phase I ESA reports

Acronyms and Abbreviations

AEC Atomic Energy Commission

AIG American International Group

AQCR Air quality control regions

ARAR Applicable or relevant and appropriate requirement

ARP Accidental Release Program

AST Aboveground storage tank

ASTM American Society for Testing and Materials

BOD Biochemical oxygen demand

BTU British thermal unit

BTEX Benzene-toluene-ethylbenzene-xylene

C Degrees Celsius

CA California CAA (Federal) Clean Air Act

CERCLA (Federal) Comprehensive Environmental Response Compensation and Liability Act of 1980

CFC Chlorofluorocarbon

C.F.R. Code of Federal Regulations

CLP (EPA) Contract Laboratory Program

CO Carbon monoxide

CZMA (Federal)

Coastal Zone Management Act

DDT Dichloro diphenyl trichloro ethane

DMR Discharge Monitoring Report

DI Deionized DOE (U.S.) Department of Energy

DOH Department of Health (Hawaii)

DOI (U.S.) Department of Interior

DOL (U.S.) Department of Labor

DOT (U.S.) Department of Transportation

EIS Environmental Impact Statement

EM Electromagnetic

EP Extraction procedure

EPA (U.S.) Environmental Protection Agency

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F Degrees Fahrenheit
f/cc fibers per cubic centimeter
Fed.Reg. Federal Register
FID Flame ionization detector
FOIA (Federal) Freedom of Information Act
FWPCA Federal Water Pollution Control Act
GC Gas chromatograph
GC/MS Gas chromatography/mass spectrometry gal gallon gph gallons per hour
GPR Ground-penetrating radar
H₂S Hydrogen sulfide
HA Halogenated aromatics
HAP Hazardous air pollutant
HCFC Hydrochlorofluorocarbons
HCS (OHSAs) Hazard Communication Standard
HREC Historical Recognized Environmental Condition
HRS Hazard Ranking System
HSWA (Federal) Hazardous and Solid Waste Amendments of 1984
HWM Hazardous waste management (facilities)
kPa kilopascal
L liter
LAER Lowest achievable emission rate
LEL Lower explosive limit
LNG Liquid natural gas
LUST Fund Leaking underground storage tank (petroleum)
m³ cubic meter
MCL Maximum contaminant level
MCLG Maximum contaminant level goal
MCP Massachusetts Contingency Plan
MeV Million electron volts mg/l milligrams per liter ml milliliter
MMS Minerals Management Service
MS Mass spectrometry
MSDS Material safety data sheet
NFA No Further Action (letter)
NGWA National Ground Water Association
N₂O Nitrogen dioxide
Nox Nitrogen oxides
NPDES National Pollutant Discharge Elimination System
NPL National Priorities List
NRC Nuclear Regulatory Commission
O₂ Oxygen
O₃ Ozone
O&M Operating and maintenance
ODCs Other direct costs
OSHA Occupational Safety and Health Act
OVA Organic vapor analyzer
PCB Polychlorinated biphenyl

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PCi/l Picocuries per liter
PEL Permissible airborne exposure level
PID Photoionization detector
POTW Publicly owned treatment works ppb parts per billion ppm parts per million
PRPs Potentially responsible parties
PSD Prevention of significant deterioration psi pounds per square inch
PVC Polyvinyl chloride
QA Quality assurance
QC Quality control
R.A. Regional Administrator
R&D Research and development
RAP Remedial Assessment Plan
RCP Response Claims Procedure
RCRA (Federal) Resource Conservation and Recovery Act
REC Recognized Environmental Condition
rem Roentgen equivalent man [a measure of radiation]
RI/FS Remedial Investigation & Feasibility Study
RMP Risk management plan
RMPP Risk Management and Prevention Programs
ROD Record of Decision
RQ Reportable quantity
RUST Repair of Underground Storage Tank Program
SARA (Federal) Superfund Amendments and Reauthorization Act of 1986
SDWA (Federal) Safe Drinking Water Act
SEC Securities and Exchange Commission
SOW Scope of work
SPCC Plan Spill Prevention Control and Countermeasure Plan
SPDES State Pollutant Discharge Elimination System (New York)
SQG Small quantity generator
SWDA (Federal) Solid Waste Disposal Act of 1965
SWMA Solid Waste Management Act (New Jersey)
SWMU Solid waste management unit
T Temperature
TAT Turn-around time
TBC To-be-considered (material)
TCLP Toxicity characteristic leaching procedure
TOC Total organic carbon
TSCA (Federal) Toxic Substance Control Act
UEL Upper explosive limit
USGS United States Geological Survey
UST Underground storage tank
UV Ultraviolet vs. versus VCP Voluntary Cleanup
VOA Volatile organic analyses
VOC Volatile organic compound
WQA (Federal) Water Quality Act

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Glossary

Glossary Action-specific ARARS usually technology-or activity-based requirements or limitations on actions or conditions involving specific substances.

Alpha particle a positively charged nuclear particle, consisting of two neutrons and two I protons, emitted with high energy (3 to 8 Me V) during some nuclear I transformations.

Annual aggregate financial ability the amount of money that would be required to pay for accidental releases that may occur within 12 months.

Area of concern a term defined in (New Jersey's) Industrial Site Reclamation Act referring to any location where hazardous substances or wastes are or may be present, which has been applied nationwide in most states including Hawaii.

As-Is Site Plan drawing of the existing site layout, shows property boundaries, streets bordering the site, and building locations and configurations, other site features, and includes an accurate scale and the north direction.

Barrier remediation prevents radon from entering the enclosure.

Becquerel international unit of measurement for the rate of nuclear transformations (per second).

Beta particle an electrically-charged particle [either positive (positron) or negative (electron)], ejected from the nucleus of an atom during radioactive decay; has the mass of an electron, can penetrate skin, up to about 1/4 inch.

Caveat emptor meaning "let the buyer beware;" without a warranty the buyer takes the risk of quality upon him or herself.

Certification (laboratories) granted by some states to certain laboratories; ensures that laboratories meet certain minimum standards.

Chemical-specific ARARs usually health-or risk-based values or methodologies used to determine acceptable concentrations of chemicals that may be found in, or discharged to, the environment. Maximum contaminant levels (MCLs) or other water quality criteria are examples of chemical-specific ARARs.

Composite sample a single composite sample is made up of a combination of samples.

Conventional pollutant EP A has identified five; biochemical oxygen demand, total suspended solids, pH, fecal coliform, and grease.

Criteria pollutant a pollutant for which EPA has established, under the Clean Air Act, a national standard.

Curie unit of measurement of the rate of nuclear transformations (per second), approximately equal to the radiation from one gram of radium.

Dilution ventilation a method of radon remediation; increases the frequency of air exchange

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in an enclosure.

Direct discharge one that is released into the 'waters of the United States.'

Discharge of dredged material generally means any addition or reintroduction of the material, either directly or indirectly, including 'runoff or overflow from a contained land or water disposal area.'

Discharge of a pollutant CWA defines this as any addition of a pollutant to receiving waters. Dredged material excavated or dredged from water bodies.

Due diligence identifying and evaluating environmental liabilities and risks is also known as performing due diligence.

Duplicate samples provide information about the precision of a laboratory's results by providing a check to determine if the correct sampling technique or method was used; may be a mandatory requirement of some regulatory agencies. Duplicate samples should be collected at locations where suspected contaminant levels are believed to be at their highest concentrations.

Eminent domain the inherent right of the state or its designated agents to appropriate or take private property provided that the property owner receives just compensation for the taking and there has been a determination that a valid public necessity exists for the taking.

Environmental due diligence process the process used to investigate a commercial or industrial property (usually prior to completion of a real estate transaction) for contamination by hazardous wastes or hazardous substances.

Environmental professional ASTM standards terminology used to describe a person possessing the necessary training and experience to conduct all aspects of the ESA and also the ability to develop valid conclusions regarding the presence of recognized environmental conditions. The terms are typically interchangeable with consultant, assessor, environmental assessor, engineering consultant, geologist, hydrogeologist, or certified engineering geologist.

Existing source is one, the construction of which commenced before publication of an applicable proposed regulation setting NSPSs for that category.

Exposed (to radiation) the individual is subjected to airborne concentration of radio nuclides with no allowance for the use of protective clothing, equipment or particle size.

Exposure assessment the defining of exposure pathways and the calculation of the potential magnitude of exposure.

Field blanks extra field samples that help to ensure "quality control" (QC).

Field-constructed tanks vertical cylinders with a capacity of greater than 50,000 gallons.

Fill material any material used primarily for either 'replacing an aquatic area with dry land' or raising the bottom elevation of water body.

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First encountered ground water the most-shallow ground water aquifer. Such an aquifer is the one most likely to be affected if surface discharges of waste have occurred.

Friable asbestos material any material that contains more than one percent asbestos by weight, and can be crumbled, pulverized, or reduced to powder by hand pressure.

Gamma rays electromagnetic radiation (similar to X-rays but higher in frequency spectrum) emitted by a radioactive substance. This radiation has no charge and is the most penetrating of the radiation forms.

General permit authorizes a type of activity as long as it meets certain standards or conditions described in the permit.

Geophysical techniques tests (including magnetometer surveys, ground penetrating radar, electrical resistivity, and seismic refraction) used to locate buried metallic objects, such as USTs and to map groundwater pathways.

Giga a billion **Grab samples** un-composited samples (usually taken for water).

Harmful quantities of oil discharge any discharge that violates a water quality standard, or causes a film or sheen upon the surface of the water.

Hazard assessment helps to define the potential adverse health or environmental effects associated with chemicals onsite, the potential magnitude of exposure, and the frequency of exposure.

Hazard identification the identification of those chemicals that may pose a threat to human health or the environment.

Highest and best use the most profitable likely use to which a property can be put.

Indemnification agreement a written promise by one party that it will not hold another party liable; also called a "hold harmless clause."

Indirect point source discharges by industries of pollutants indirectly into U.S. waters through publicly-owned treatment works (POTWs).

Individual permit authorizes a specific individual or entity to conduct a specific activity.

Joint and several liability imposed in cases where the harm caused is indivisible-where there are multiple parties who are potentially responsible for the harm, but it cannot be determined with any degree of certainty which parties or defendants are responsible for which aspects of the damage.

Just compensation the market value of the property in its highest and best use in cash

Laboratory blanks laboratory-grade samples that re analyzed in the same way as field samples.

Laboratory duplicates unmarked samples whose results help to ensure QC.

Location-specific ARARs restrict actions or contaminant concentrations in certain

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environmentally sensitive areas. Examples of areas regulated under various federal and state laws include floodplains, wetlands and locations where endangered species or historically significant cultural resources are present

Matrix spikes duplicate field samples that are spiked in the laboratory with measured quantities of contaminant; the volume of contamination in a matrix spike can then be subtracted from the overall quantity of contaminant in the pure sample to determine the contamination level in the original soil sample.

Maximum holding times the total time a sample can be retained under proper storage conditions before analytical results are considered legally invalid.

Method blank used to calibrate the instrument chosen to test a sample. For example, in spectrometry, a method blank containing deionized water is used to obtain a base reading; this reading is then deducted from the readings obtained from the samples.

Micro one millionth

Negative declaration a term defined in (New Jersey's) Industrial Site Reclamation Act.

New source one for which construction began after publication of applicable proposed regulation settings NSPS for that category.

New underground storage tanks (New USTs) tanks used to contain regulated substances, and installed after December 22, 1988.

No Further Action letter a term defined in (New Jersey's) Industrial Site Reclamation Act.

Opportunity costs those costs associated with the loss of use of the property due to remedial activities.

Per occurrence financial ability refers to the amount of money that must be available to pay the cost of one accidental release.

Permeability the ability of liquid or gas to pass through; in this case, defined as the ability of a rock formation to transmit water.

Pesticide any substance or mixture of substances intended to prevent destroys, repel, or mitigate pests.

Phase I (ESA) non-intrusive research conducted to evaluate the potential for significant onsite impacts.

Phase II (investigation) an intrusive study of at the site's soil and ground water to evaluate the

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location and extent of impacts from historical uses.

Phase III a framework for identifying remediation approaches so that a cleanup strategy can be developed. **Pico** one trillionth

Pits floor drains that may be used to discharge hazardous wastes; also called "trenches."

Point source discharges any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feed operation, or vessel or other floating craft, from which pollutants are or may be discharged into waters.

Pollutant according to CW A, dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heating wrecked or discharged equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. See a/so conventional, non-conventional and toxic pollutants.

Portable organic vapor analyzer used to screen volatile organic compounds, the most common contaminant present on commercial and industrial properties. **Potential to emit** calculated using the major stationary source's maximum design capacity (continuous year-round operation) following application of pollution controls.

Primary standards (for airborne pollutants) EPA's standards which are designed to protect human health with an adequate margin of safety.

Pristine sites unaffected by any negative impact from man or nature

Profiling defining the subsurface features. This is used to define the lateral extent of a feature, such as a waste site, with little or no data on depth.

Proportional allocation method involves allocating liability according to the percentage of total wastes found at the site that is clearly attributable to each potentially responsible party (pRRP).

Pumping and treatment a man-made system for extracting contaminated ground water and ~ treating it to remove contaminants; typically there is no reinjection of the water.

Quad map a topographic map with an approximate scale of one inch to 2,000 feet; shows physical features such as wetlands, water bodies, roadways, mines, and buildings.

Quality assurance (QA) a firm-wide program that establishes project policies, procedures, standards, and guidelines designed to produce an acceptable level of professional quality.

Quality control (QC) programs establish project activities that apply the policies, procedures, standards, and guidelines designed to produce an acceptable level of professional quality.

Radioactive material any material which emits, by spontaneous nuclear disintegration, corpuscle or electromagnetic emanations.

Radiation includes alpha rays, beta rays, and gamma rays. Alpha and beta rays are corpuscle (particle) emanations; gamma rays are electromagnetic emanations.

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Radiation area any area accessible to personnel, in which radiation exposure could exceed 5 millirems in one hour, or 100 millirems in any five consecutive days.

Radon a chemical element formed by the disintegration of radium, is a heavy, colorless, odorless, and radioactive gas.

Real estate value cost approach to value involves the estimation of the replacement cost of the utility of the improvements, from which is subtracted the estimated depreciation, to which is added to the value of the land. The land value is normally obtained from the market approach to value. Income approach is applicable in estimating the value of real estate that is purchased primarily for its income-producing potential. Market data approach is an appraisal process in which the estimated market value of a property is based upon prices paid in actual market transactions, or upon current offering prices for similar real estate. Selected properties are compared to that under appraisal in order to arrive at an indicated value of the subject. The various features of the comparables are considered with respect to their absence, presence, and quality in the subject and adjustments are made to the unit sale price of the comparable property for these major differences.

Recharge water management systems designed to inject water collected by surface systems back into ground water aquifers.

Regulated substances "The term regulated substances means (1) any substance defined [as hazardous substance under CERCLA]... (but not including any substance regulated as hazardous waste under [RCRA]), and (2) petroleum."

Releases defined by federal and most state laws as any spilling, leaking, pouring, dumping, emitting, discharging, injecting, escaping, leaching, or disposing of hazardous waste or hazardous waste constituents into the environment.

Rem (roentgen equivalent man) a measure of ionizing radiation dosage with the same biological effect as a roentgen of X-or gamma rays.

Remedial action a term defined in (New Jersey's) Industrial Site Reclamation Act.

Restricted area any area where access is controlled by the employer for the purpose of limiting employee exposure to radiation or radioactive materials.

Restricted-use pesticides pesticides that must be applied under the supervision of a certified applicator.

Risk characterization combines information on the potential magnitude of exposure to chemicals from the site with dose-response information derived from the "hazard assessment." The result is a description of the potential nature and magnitude of health or environmental risk associated with each chemical onsite.

Roentgen the international unit of measurement for X-radiation or gamma radiation

Sample price the total price for all samples including samples necessary to test for QA.

Sampling round a consultant's visit to the site to gather samples.

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Secondary standards (for airborne pollutants) EPA's standards designed to protect against environmental damage, such as damage to soils, crops, wildlife, weather, climate, and personal comfort.

Small quantity generators (SQGs) defined as facilities producing less than 1,000 kilograms of hazardous waste per calendar month (kilograms per month), which is the equivalent of about 300 gallons or about five 55-gallon drums; note, however, some states define SQGs more narrowly.

Soil and ground water analyses tests used to determine the presence of surficial or subsurface contamination and concentration levels; may involve soil borings and installations of test pits and/or observation wells.

Soil vapor surveys surveys using gas chromatography equipment to map potential soil and groundwater contamination.

Sophisticated surface water sampling program consists of more samples taken at several different depths and tests of such physical parameters as pH, conductivity, presence of dissolved oxygen, and temperature.

Sounding a radar technique used to determine the depth of a buried object at a specific location.

Spikes samples that have been fixed with a preservative.

Strict liability indicates that fault is not a prerequisite to determining responsibility under the statute. The purchaser may be liable for cleanup costs even if the property was contaminated prior to his or her purchase. The original owner may also be held accountable for all or part of a property's cleanup costs despite compliance with all regulations in effect at the time of property transfer.

Suction piping piping which does not require leak detection if it has the following two main characteristics Below-grade piping is sloped so that the contents will drain back into the storage tank if the suction is released. Each suction line has only one check valve which is located directly below the suction pump.

Super lien law provides states the authority to impose a lien on any property requiring cleanup that involves state expense. The super lien law takes precedence over all other encumbrances, including first mortgage.

Tank testing used to identify leaks in USTs.

Tax Assessor's Map provides legal description, property boundaries, locations, types of easement (if any), and the locations of properties bordering the subject site.

Technology-based limits the minimum level of water pollution control technology that a discharger must apply, regardless of which water body receives the effluent discharge.

Thief a long, hollow, outer tube with evenly-spaced openings along its length and an inner tube of the same configuration. It is used for collecting samples by aligning the openings after inserting it into the material to be sampled.

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Title search a process used to confirm legal ownership (of property).

To-be-considered materials defined by EPA as "non-promulgated advisories or guidance used by federal or state government that are not legally binding and do not have the status of potential ARARs. In many cleanups, TBCs will be considered along with ARARs in determining the necessary level of cleanup.

Transportation-related release a release of a hazardous substance during transportation or storage if the stored substance is moved under manifest and has not reached its designated destination.

Transported (radioactive materials) not defined in OSHA regulations, but these are interpreted to mean moved from one location to another on a property, or from a restricted area to an unrestricted area.

Travel blanks containers filled with deionized (DI) water that should accompany each container or sample.

Trenches floor drains which may be used to discharge hazardous wastes; also called "pits."

Trier a hollow rod that will produce a core sample when thrust into unconsolidated, moist materials.

Underground storage tanks (USTs) tanks that store regulated substances and have at least 10 percent of their volume, including the contents of connected pipes, underground.

User ASTM terminology for the person [usually the client] responsible for providing this data to the environmental professional.

Vadose unsaturated zone.

Warranty a pledge that a certain matter is true. For example, a seller may warrant that the facility has obtained all federal and state environmental permits required for continued operation.

Waste management units physical areas of the site where hazardous wastes are generated, used, stored, or treated.

Waters of the United States (i) navigable waters; waters of the U.S. subject to tidal action shore-ward to the mean high water mark and are presently used or may be used to transport interstate or foreign transport. The term includes coastal and inland waters, lakes, rivers, and streams that are navigable and the oceans; (ii) tributaries of navigable waters (iii) wetlands, including those adjacent to waters of the United States.

Water quality-limited requirements the pollution controls that dischargers in selected locations must apply to ensure their discharges do not cause violations of the water quality standards set for that receiving body.

Well-casing volume determined by multiplying the total depth of the well from ground surface to the bottom of the water column by the cross-sectional area.

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Wellhead protection areas surface and sub-surface areas surrounding water wells or well fields supplying public water systems

Wetlands definition varies by state, generally one or more of the following criteria apply . Whether or not the area is permanently wet during most of the year. . Whether or not wetlands-related submergent and emergent plants are present. . Whether or not characteristic soil types are present.

Purpose

The purpose of the Phase I Environmental Site Assessment (ESA) was to evaluate the current and historical conditions of the Subject Property in an effort to identify recognized environmental conditions in connection with the Subject Property.

A recognized environmental condition is defined by ASTM as:

Recognized Environmental Condition -The presence of or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies.

The identification of recognized environmental conditions in connection with the subject property may impose an environmental liability on owners or operators of the site, reduce the value of the site, or restrict the use or marketability of the site, and therefore, further investigation may be warranted to evaluate the scope and extent of potential environmental liabilities.

Scope

The Phase I ESA conducted at the Subject Property was in general accordance with ASTM Standard ASTM E1527-13 and included the following:

- Review of previous environmental site assessments;
- Records review;
- Interviews with regulatory officials and personnel associated with the Subject property and adjoining properties;
- A site visit; and
- Evaluation of information and preparation of the report provided herein.

Typically, a Phase I ESA does not include sampling or testing of air, soil, groundwater, surface water, or building materials. These activities would be carried out in a Phase II ESA, if detected

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during the Phase I investigation that there is sufficient reason to carry the investigation further. For this Phase I ESA, no additions to the ASTM E1527-13 standard requiring a Phase II were made with the exception of the following: **None found, Phase I ESA suffices.**

Significant Assumptions

There is a possibility that even with the proper application of these methodologies there may exist on the Subject Property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available research or visual information/observations. WHALE Environmental Services LLC believes that the information obtained from the record reviews and the interviews concerning the site are reliable. However, WHALE Environmental Services LLC cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The methodologies of this assessment are not intended to produce all-inclusive or comprehensive results, but rather to provide the property owner – Sea Turtle Estates LLC - with information relating to the Subject Property.

Limitations and Exceptions

Along with all of the limitations set forth in various sections of the ASTM E1527-13 protocols, the accuracy and completeness of this report may be limited by the following:

- Access Limitations
- Physical Obstructions to Observations
- Outstanding Information Requests
- Historical Data Source Failure
- Other –

It should be noted that this assessment did not include a review or audit of operational environmental compliance issues, or of any environmental management systems (EMS) that may exist on the property. Some of the information presented in this report was provided through existing documents and interviews. Although attempts were made, whenever possible, to obtain a minimum of two confirmatory sources of information, WHALE Environmental Services LLC in certain instances has been required to assume that the information provided is accurate.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgment of WHALE Environmental Services LLC based on the data obtained from the work. Due to the nature of investigation and the limited data available, WHALE Environmental Services LLC cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be construed as legal advice.

Phase I Environmental & Historical Review & Investigation

Should additional information become available which differs significantly from our understanding of conditions presented in this report, we request that this information be brought to our attention so that we may reassess the conclusions provided herein.

Special Terms and Conditions

Authorization to perform this assessment was given by the client in December 2022. Instructions as to the location of the property, access, and an explanation of the property and facilities to be assessed were provided by the owners in Kahuku, Hawaii.

Reliance

This report has been prepared for the sole benefit of the client. The report may not be relied upon by any other person or entity without the express written consent of the client (Sea Turtle Estates LLC) with the following exceptions(s): **None expected.**

Site Inspection Checklist

Hazardous Substances
Petroleum or Petroleum-based Products
USTs ASTs Other Suspect Containers
Equipment Likely to Contain PCBs
Interior Staining/Corrosion Discharge
Features Pits, Ponds, And Lagoons
Solid Waste Dumping/Landfills
Stained Soil/Stressed Vegetation
Wells.... Asbestos-Containing Materials
Lead-Based Paint
Radon
Wetlands
Microbial Contamination (Mold)
Client-Specific Items

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

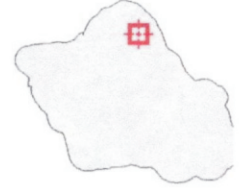
ESA - APPENDIX A

SITE LOCATION MAP

ACTION LOCATION MAP



Overview



Legend

- Roads
- Parcels

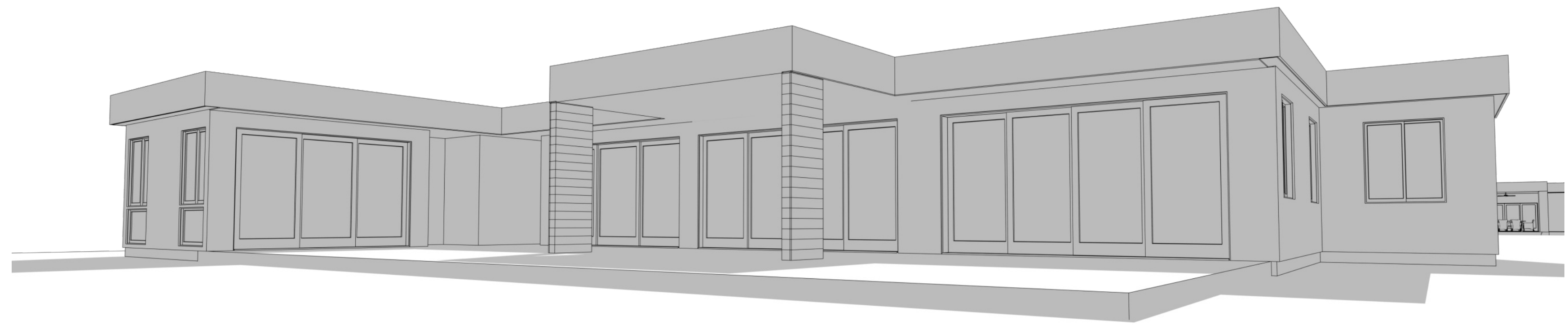
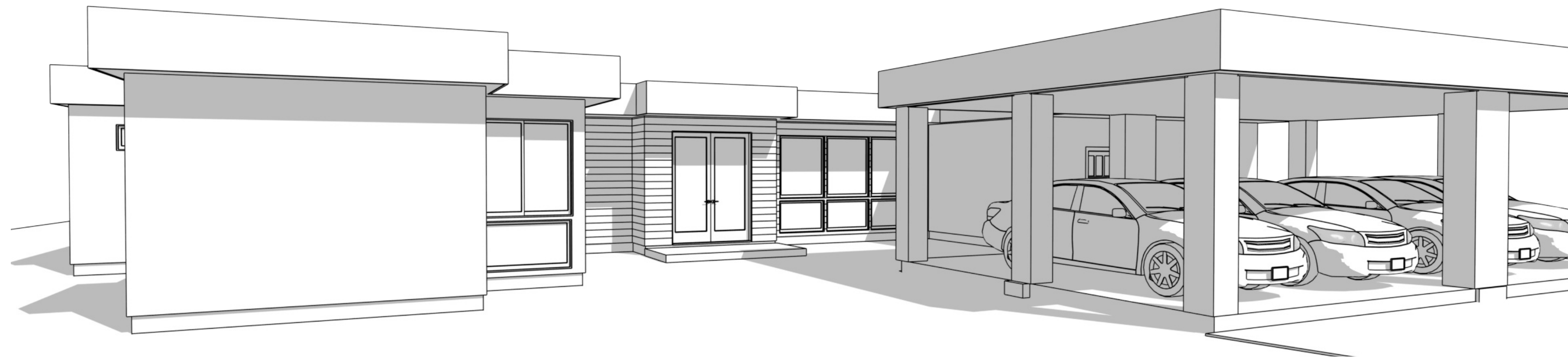
56-157 Kamehameha Highway, Kahuku, HI 96731
TMK 1-5-6001:089
1.362 acres - entire parcel in SMA

Residential Development on occupied parcel

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

ESA - APPENDIX B

SITE CONCEPTUAL PLAN



d'Amico Design Group LLC
 PO Box 22578
 HONOLULU, HAWAII 96823
 808-221-2666

ZUCCO RESIDENCE
 KAM HIAY
 KAHUKU, HAWAII

REVISION TABLE	DESCRIPTION
NUMBER	DATE

DATE:
 11/1/2022

SCALE:

SHEET:



d'Amico Design Group LLC
 PO Box 22578
 HONOLULU, HAWAII 96823
 808-221-2666

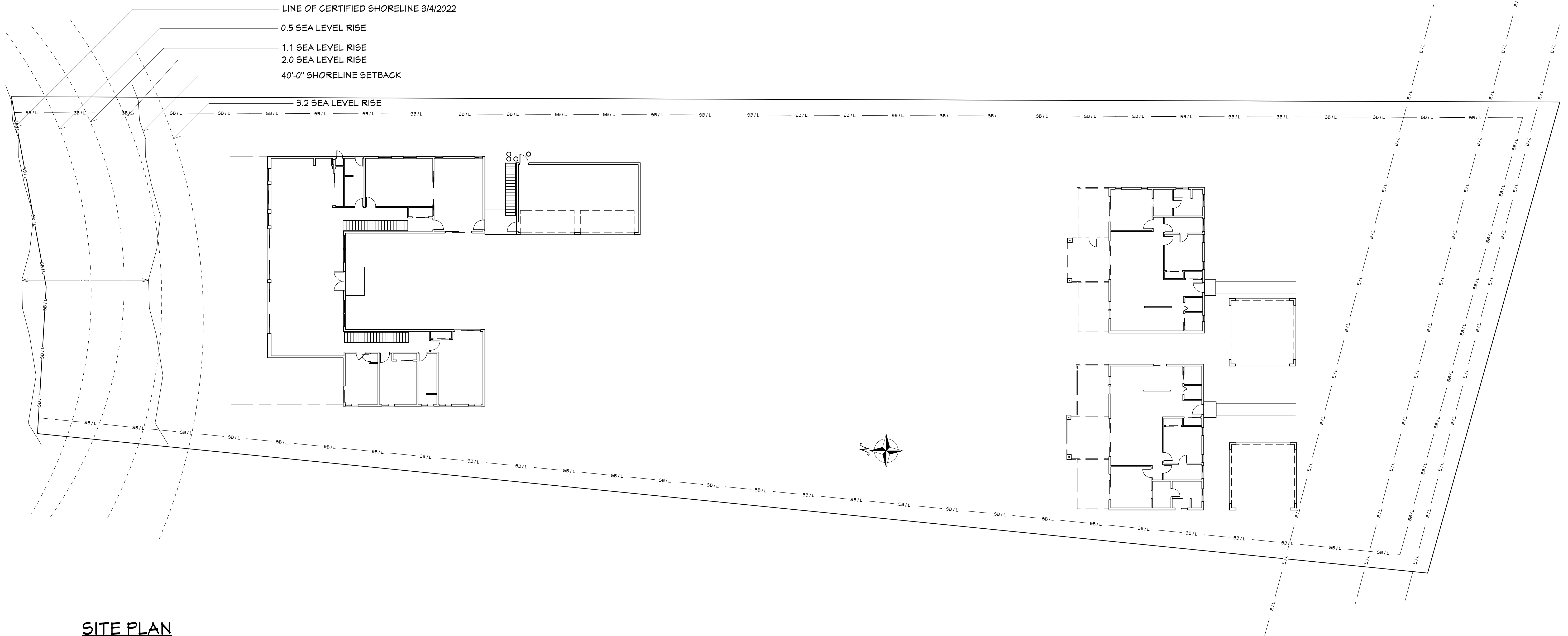
ZUCCO RESIDENCE
 56-157 KAMEHAMEHA HWY
 KAHUKU, HAWAII
 (TMK: 5-6-001:089)

REVISION TABLE	NUMBER	DATE	DESCRIPTION

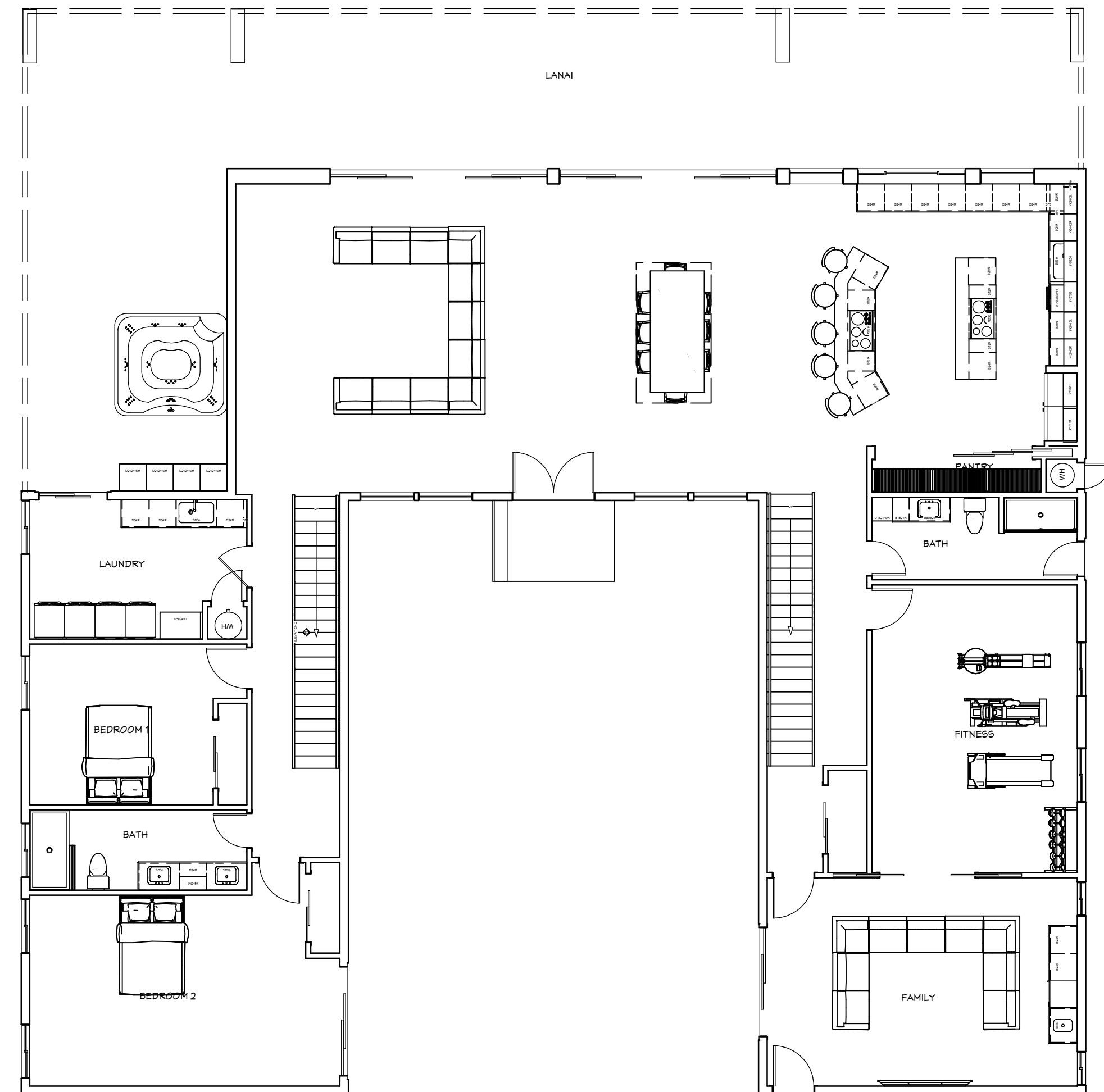
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 2/24/2023

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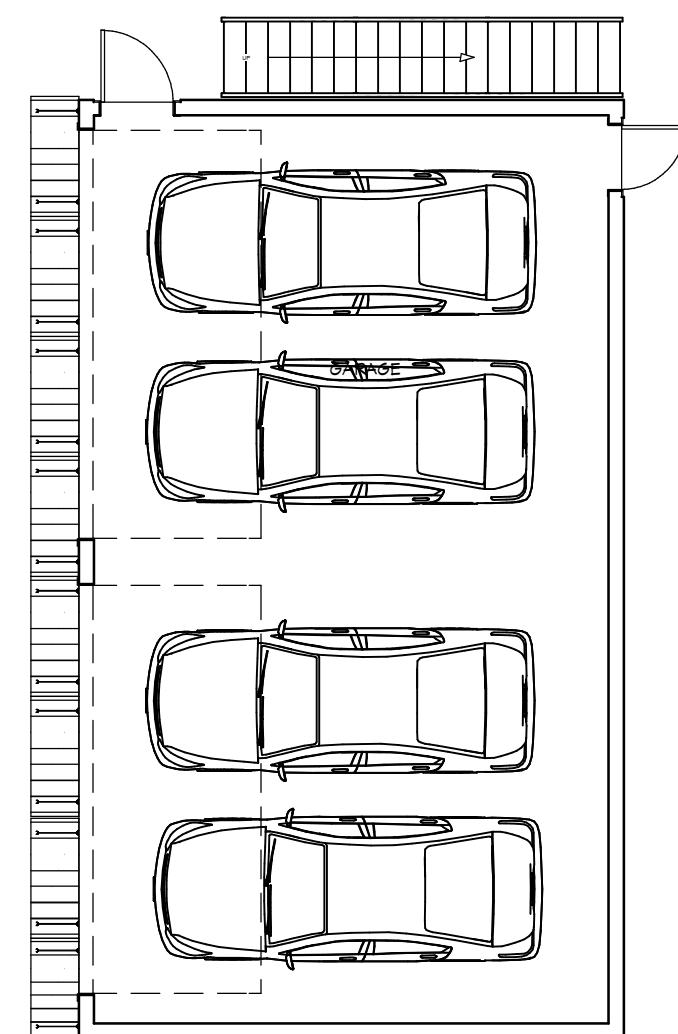
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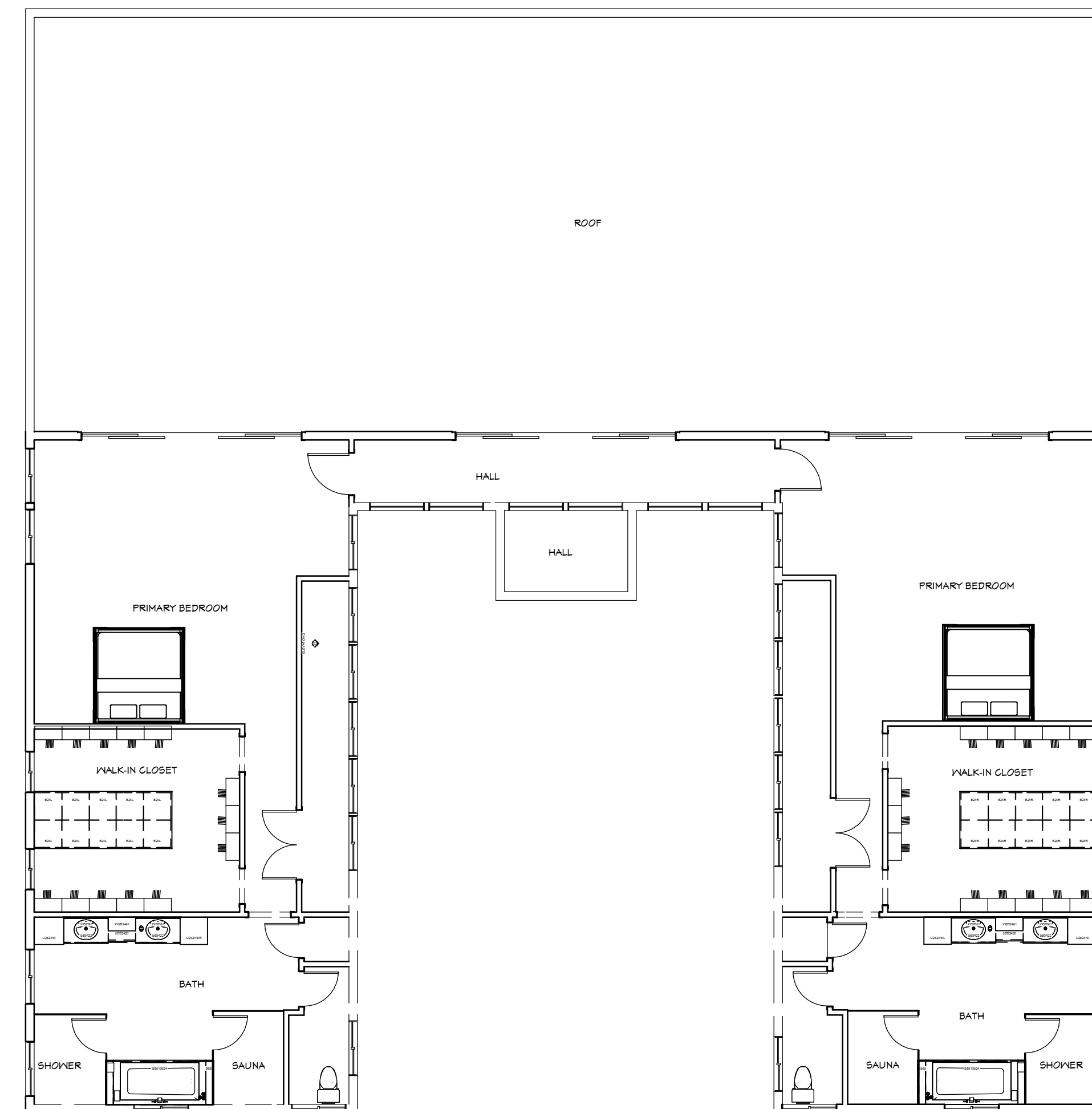
SITE PLAN



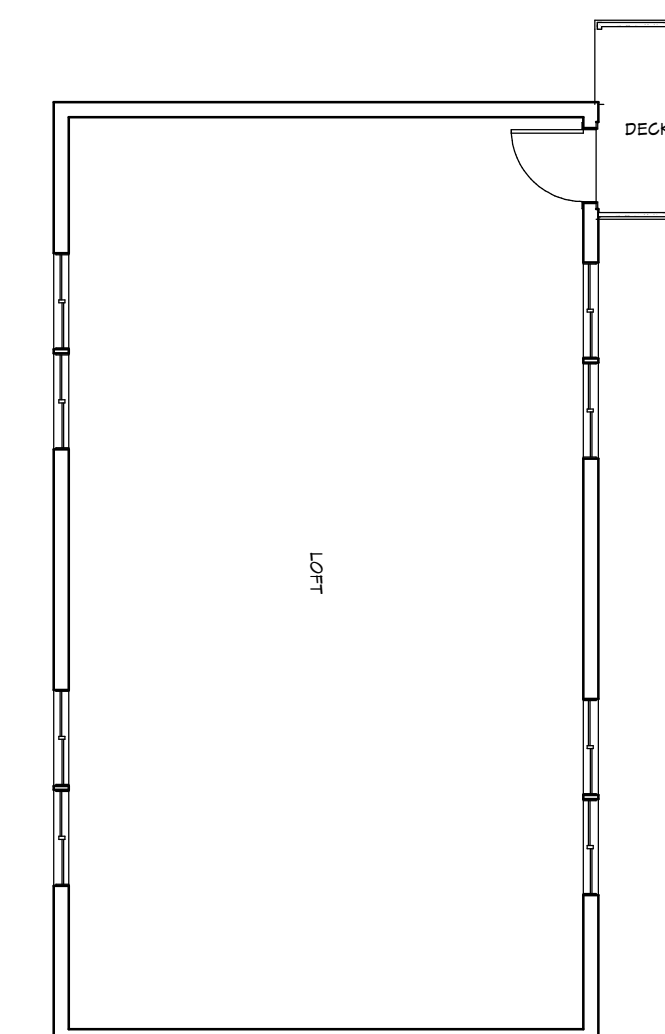
LIVING AREA
3665 SQ FT



MAIN DWELLING LOWER FLOOR PLAN



LIVING AREA
2600 SQ FT



LIVING AREA
879 SQ FT

MAIN DWELLING UPPER FLOOR PLAN



d'Amico Design Group LLC
PO Box 22578
HONOLULU, HAWAII 96823
808-221-2666

ZUCCO RESIDENCE
56-157 KAMEHAMEHA HWY
KAHUKU, HAWAII
(TMK: 5-6-001:089)

REVISION TABLE	DESCRIPTION
NUMBER	DATE

DATE:

2/24/2023

SCALE:

SHEET:

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

ESA - APPENDIX C

FLOODPLAIN INFORMATION



BASEMAP: FIRM BASEMAP



Flood Hazard Assessment Report

www.hawaiiinfip.org

Sea Turtle Estates LLC

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND

(Note: legend does not correspond with NFHL)

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

	Zone A: No BFE determined.
	Zone AE: BFE determined.
	Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
	Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
	Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
	Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
	Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

	Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

	Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase applies, but coverage is available in participating communities.
--	---

Property Information

COUNTY: HONOLULU
 TMK NO: (1) 5-6-001:089
 WATERSHED: MALAEKAHANA
 PARCEL ADDRESS: 56-157 KAMEHAMEHA HIGHWAY
 KAHUKU, HI 96731

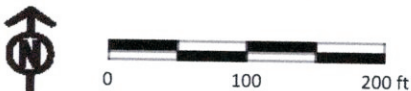
Notes:

Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 05, 2014
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL: 15003C0045H
 PANEL EFFECTIVE DATE: NOVEMBER 05, 2014

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: YES
 FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

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



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

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

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

ESA - APPENDIX D

HIG - HISTORICAL DATABASE
RESEARCH REPORT



Government Records
Report | 2023
With Platinum Review

Order Number: 82870

Report Generated: 01/26/2023

Project Name: Sea Turtle Estates LLC

Project Number: 2072002

Sea Turtle Estates LLC
56-157 Kamehameha Hwy
Kahuku, HI 96731

with [Envirosite Atlas](#)

Contact us at:
(866) 211-2028
envirositecorp.com

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<u>Executive Summary by Distance</u>	<u>2</u>
<u>Executive Summary by Database</u>	<u>3</u>
<u>Property Proximity Map</u>	<u>8</u>
<u>Area Map</u>	<u>9</u>
<u>Map Findings Summary</u>	<u>10</u>
<u>Map Findings</u>	<u>16</u>
<u>Unmappable Summary</u>	<u>23</u>
<u>Environmental Records Searched</u>	<u>24</u>
<u>Geological Landscape Section</u>	<u>43</u>
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Envirosite Corporation has conducted a search of all reasonably ascertainable records in accordance with EPA's AAI (40 CFR Part 312) requirements and the ASTM E-1527-21 Environmental Site Assessments standard.

SUBJECT PROPERTY INFORMATION:

ADDRESS:

Sea Turtle Estates LLC
56-157 Kamehameha Hwy
Kahuku, HI 96731

COORDINATES:

Latitude (North):	21.662994 - 21°39'46.8"
Longitude (West):	-157.934432 - -157°56'4"
Universal Transverse Mercator:	Zone 4N
UTM X (Meters):	610251.42
UTM Y (Meters):	2395904.41
State Plane Coordinates:	5103 - Hawaii Zone 3 (US Survey Feet)
X Coordinate (Feet):	1662681.934 E
Y Coordinate (Feet):	180299.879 N

ELEVATION:

Elevation: 36 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH SUBJECT PROPERTY:

Subject Property Map: 21157-F8 Kahuku, HI
Most Recent Revision: 2017

<u>MAP ID</u>	<u>SITE NAME</u>	<u>ADDRESS</u>	<u>DATABASE(S)</u>	<u>RELATIVE ELEVATION</u>	<u>DIRECTION / DISTANCE</u>
1	Hawaiian Islands Humpback Whal...	21.735932,-158.05135	FEDLAND	N/R	NE / 0.011 mi., 56 ft.
2	Pier 12 Honolulu Harbor Pier...	Honolulu Harbor Pier 12...	HIST SPILLS 2 - HI, SHWS - HI	Higher	WSW / 0.585 mi., 3090...
3	LAIE MILITARY RES	21.661667,-157.945	FUDS	Lower	W / 0.648 mi., 3420 ft.
4	OAHU ISLAND TARGET	21.662701,-157.923004	FUDS	Lower	E / 0.693 mi., 3659 ft.
5	FUDS Oahu Target Island	N-R	I-C - HI, SHWS - HI	Lower	NE / 0.735 mi., 3880 ft.
6	OAHU BOMBING TARGETS	21.675833,-157.926389	FUDS	Lower	NNE / 0.974 mi., 5143...

SUBJECT PROPERTY SEARCH RESULTS:

The subject property was not listed in any of the databases searched by Envirosite Corporation.

SEARCH RESULTS:

STATE- AND TRIBAL - EQUIVALENT CERCLIS

SHWS - HI: Listing of state hazardous waste sites **2 SITES FOUND WITHIN 1 MILE**

EQUAL/HIGHER ELEVATION

<u>MAP ID</u>	<u>SITE NAME</u>	<u>SITE ADDRESS</u>	<u>DIRECTION/DISTANCE</u>	<u>PAGE</u>
2	Pier 12 Honolulu Harbor Pier 12 and Pier 15 Improvements - ID: N/R	Honolulu Harbor Pier 12 Honolulu Harbor Status: N/R	WSW / 0.585 mi., 3090 ft. Date: N/R	16

LOWER ELEVATION

<u>MAP ID</u>	<u>SITE NAME</u>	<u>SITE ADDRESS</u>	<u>DIRECTION/DISTANCE</u>	<u>PAGE</u>
5	FUDS Oahu Target Island - ID: Facility Registry Identifier N/R	N/R Status: Response Ongoing	NE / 0.735 mi., 3880 ft. Date: N/R	19

OTHER ASCERTAINABLE RECORDS

FEDLAND: Federal Lands from the Protected Areas Database (PAD-US) **1 SITE FOUND WITHIN 1 MILE**

EQUAL/HIGHER ELEVATION

<u>MAP ID</u>	<u>SITE NAME</u>	<u>SITE ADDRESS</u>	<u>DIRECTION/DISTANCE</u>	<u>PAGE</u>
1	Hawaiian Islands Humpback Whale National Marine Sanctuary	21.735932, -158.05135	NE / 0.011 mi., 56 ft.	16

FUDS: Defense sites that require cleanup **3 SITES FOUND WITHIN 1 MILE**

LOWER ELEVATION

<u>MAP ID</u>	<u>SITE NAME</u>	<u>SITE ADDRESS</u>	<u>DIRECTION/DISTANCE</u>	<u>PAGE</u>
3	LAIE MILITARY RES	21.661667, -157.945	W / 0.648 mi., 3420 ft.	18
4	OAHU ISLAND TARGET	21.662701, -157.923004	E / 0.693 mi., 3659 ft.	19
6	OAHU BOMBING TARGETS	21.675833, -157.926389	NNE / 0.974 mi., 5143 ft.	22

No unmappable sites reported.

DATABASE(S) WITH NO MAPPED SITES:

FEDERAL RCRA NON-CORRACTS TSD FACILITIES LIST

ARCHIVED RCRA TSDF	Archived Resource Conservation and Recovery Act: Treatment Storage and Disposal Facilities
RCRA_TSDF	Resource Conservation and Recovery Act: Treatment Storage and Disposal Facilities

FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS

AST PBS	ASTs at Bulk Petroleum Terminals
EPA UST	EPA UST Finder database
FEMA UST	FEMA Underground Storage Tanks
HIST INDIAN UST R6	Historical Underground Storage Tanks on Indian Land in EPA Region 6
HIST INDIAN UST R7	Historical Underground Storage Tanks on Indian Land in EPA Region 7
INDIAN UST R1	Underground Storage Tanks on Indian Land in EPA Region 1
INDIAN UST R10	Underground Storage Tanks on Indian Land in EPA Region 10
INDIAN UST R2	Underground Storage Tanks on Indian Land in EPA Region 2
INDIAN UST R4	Underground Storage Tanks on Indian Land in EPA Region 4
INDIAN UST R5	Underground Storage Tanks on Indian Land in EPA Region 5

FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS (cont.)

INDIAN UST R6	Underground Storage Tanks on Indian Land in EPA Region 6
INDIAN UST R7	Underground Storage Tanks on Indian Land in EPA Region 7
INDIAN UST R8	Underground Storage Tanks on Indian Land in EPA Region 8
INDIAN UST R9	Underground Storage Tanks on Indian Land in EPA Region 9
AST - HI	Aboveground Storage Tanks
HIST AST - HI	Historical Aboveground Storage Tanks
UST - HI	Underground Storage Tanks

FEDERAL CERCLIS LIST

CERCLIS NFRAP	Comprehensive Environmental Response Compensation and Liability Act No Further Remedial Action Planned
CERCLIS-HIST	Comprehensive Environmental Response Compensation and Liability Act
EPA SAA	EPA Superfund Alternative Approach
FEDERAL FACILITY	Federal Facility sites
SEMS_8R_ACTIVE SITES	Sites on SEMS Active Site Inventory
SEMS_8R_ARCHIVED SITES	Sites on SEMS Archived Site Inventory

FEDERAL RCRA CORRACTS FACILITIES LIST

CORRACTS	Hazardous Waste Corrective Action
HIST CORRACTS 2	Historical Hazardous Waste Corrective Action

FEDERAL DELISTED NPL SITE LIST

DELISTED NPL	Delisted National Priority List
DELISTED PROPOSED NPL	Delisted proposed National Priority List
SEMS_DELETED NPL	Sites Deleted from National Priorities List

FEDERAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

EPA LF MOP	EPA Landfill Methane Outreach Project Database
------------	--

FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS

EPA LUST	EPA LUST
HIST INDIAN LUST R4	Historical Leaking Underground Storage Tanks on Indian Land in EPA Region 4
HIST INDIAN LUST R8	Historical Leaking Underground Storage Tanks on Indian Land in EPA Region 8
INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land in EPA Region 1
INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land in EPA Region 10
INDIAN LUST R2	Leaking Underground Storage Tanks on Indian Land in EPA Region 2
INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land in EPA Region 4
INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land in EPA Region 5
INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land in EPA Region 6
INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land in EPA Region 7
INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land in EPA Region 8
INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land in EPA Region 9
HIST LUST - HI	Historical Leaking Underground Storage Tanks
LUST - HI	Leaking Underground Storage Tanks

FEDERAL ERNS LIST

ERNS	Emergency Response Notification System
------	--

FEDERAL INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES

FED E C	Engineering Controls
FED I C	Institutional Controls
RCRA IC_EC	RCRA sites with Institutional and Engineering Controls

FEDERAL RCRA GENERATORS LIST

HIST RCRA_CESQG	Historical Resource Conservation and Recovery Act_Conditionally Exempt Small Quantity Generators
HIST RCRA_LQG	Historical Resource Conservation and Recovery Act_Large Quantity Generators

FEDERAL RCRA GENERATORS LIST (cont.)

HIST RCRA_NONGEN	Historical Resource Conservation and Recovery Act_Non Generators
HIST RCRA_SQG	Historical Resource Conservation and Recovery Act_Small Quantity Generators
RCRA_LQG	Resource Conservation and Recovery Act_Large Quantity Generators
RCRA_NONGEN	Resource Conservation and Recovery Act_Non Generators
RCRA_SQG	Resource Conservation and Recovery Act_Small Quantity Generators
RCRA_VSQG	Resource Conservation and Recovery Act_Very Small Quantity Generator

FEDERAL NPL SITE LIST

NPL	National Priority List
NPL EPA R1 GIS	GIS for EPA Region 1 NPL
NPL EPA R3 GIS	GIS for EPA Region 3 NPL
NPL EPA R6 GIS	GIS for EPA Region 6 NPL
NPL EPA R8 GIS	GIS for EPA Region 8 NPL
NPL EPA R9 GIS	GIS for EPA Region 9 NPL
PART NPL	Part National Priority List
PROPOSED NPL	Proposed National Priority List
SEMS_FINAL NPL	Sites included on the Final National Priorities List
SEMS_PROPOSED NPL	Sites Proposed to be Added to the National Priorities List

STATE AND TRIBAL BROWNFIELD SITES

TRIBAL BROWNFIELDS	Tribal Brownfields
BROWNFIELDS - HI	Brownfields

STATE INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES

I C - HI	Institutional Controls
----------	------------------------

STATE AND TRIBAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

SWF LF CLOSED - HI	Closed Solid Waste Facilities and Landfills
SWF/LF - HI	Solid Waste Facilities and Landfills

STATE AND TRIBAL VOLUNTARY CLEANUP SITES

VCP - HI	Voluntary Cleanup Program
----------	---------------------------

LOCAL BROWNFIELD LISTS

BROWNFIELDS-ACRES	EPA ACRES Brownfields
FED BROWNFIELDS	Federal Brownfields

LOCAL LISTS OF HAZARDOUS WASTE / CONTAMINATED SITES

FED CDL	DOJ Clandestine Drug Labs
US HIST CDL	Historical Clandestine Drug Labs

LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES

HIST INDIAN ODI R8	Historical Open Dump Inventory
INDIAN ODI R8	Open Dump Inventory
ODI	Open Dump Inventory
TRIBAL ODI	Indian Open Dump Inventory Sites

RECORDS OF EMERGENCY RELEASE REPORTS

HMIRS (DOT)	Hazardous Materials Information Reporting Systems
HIST SPILLS - HI	Historical Spills
HIST SPILLS 2 - HI	Historical Spills
SPILLS - HI	Spills

LOCAL LAND RECORDS

LIENS 2	CERCLA Lien Information
---------	-------------------------

OTHER ASCERTAINABLE RECORDS

AFS	Air Facility Systems
ALT FUELING	Alternative Fueling Stations
ARENAS	ARENAS

OTHER ASCERTAINABLE RECORDS (cont.)

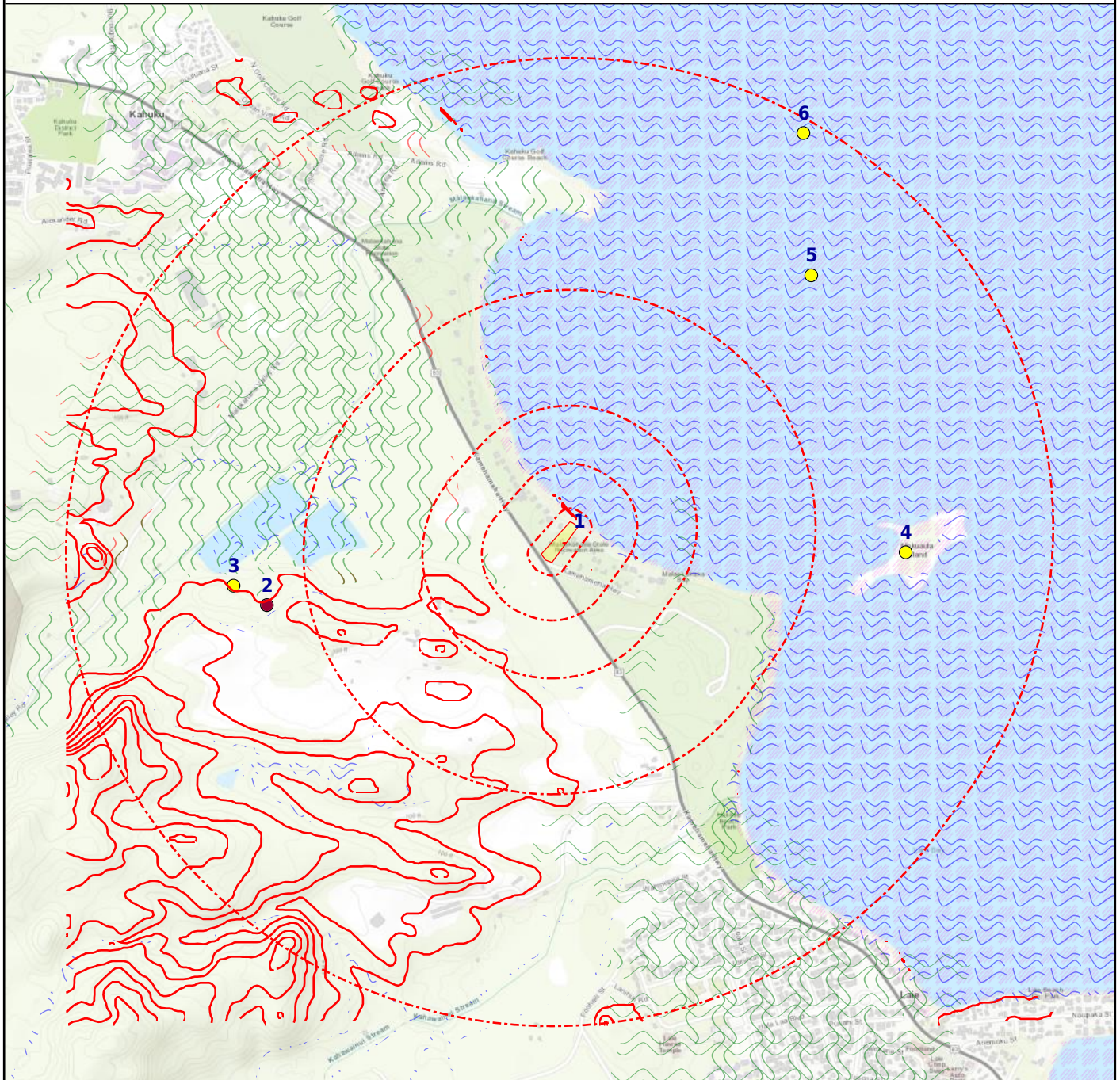
ARENAS 2	ARENAS (additional)
BRS	Biennial Reporting Systems
CDC HAZDAT	Hazardous Substance Release and Health Effects Information
CHURCHES	CHURCHES
COAL ASH DOE	Coal Ash: Department of Energy
COAL ASH EPA	Coal Ash: Environmental Protection Agency
COAL GAS	Coal Gas Plants
COLLEGES	COLLEGES
COLLEGES 2	COLLEGES 2
CONSENT (DECREES)	Superfund Consent Decree
CORRECTIVE ACTIONS_2020	Wastes - Hazardous Waste - Corrective Action
DAYCARE	DAYCARE
DEBRIS EPA LF	EPA Disaster Debris Landfill Sites
DEBRIS EPA SWRCY	EPA Disaster Debris Recovery Sites
DOD	Department of Defense
DOT OPS	Department of Transportation Office of Pipeline Safety
ECHO	EPA Enforcement and Compliance History Online
ENOI	Electronic Notice of Intent
EPA FUELS	EPA Fuels Registration, Reporting, and Compliance List
EPA OSC	EPA On-Site Coordinator
EPA WATCH	EPA Watch List
FA HWF	Financial Assurance for Hazardous Waste Facilities
FRS	Facility Index Systems
FTTS	FIFRA/TSCA Tracking System
FTTS INSP	FIFRA/TSCA Tracking System: Inspections
GOV MANSIONS	Governors Mansions
HIST AFS	Historical Air Facility Systems
HIST AFS 2	Historical Air Facility Systems
HIST DOD	Department of Defense historical sites
HIST LEAD_SMELTER	Historical Lead Smelter Sites
HIST MLTS	Historical Material Licensing Tracking Systems
HIST PCB TRANS	Historical Polychlorinated Biphenyl (PCB) Facilities
HIST PCS ENF	Historical Enforced Permit Compliance Facilities
HIST PCS FACILITY	Historical Permit Compliance Facilities
HIST SSTS	Historical Section 7 Tracking Systems
HOSPITALS	HOSPITALS
HWC DOCKET	Hazardous Waste Compliance Docket
ICIS	Integrated Compliance Information System
INACTIVE PCS	Inactive Permit Compliance Facilities
INDIAN RESERVATION	American Indian Lands
LUCIS	Land Use Control Information Systems
LUCIS 2	Land Use Control Information Systems 2
MANIFEST EPA	EPA Hazardous Waste Manifests
MINE OPERATIONS	Mines list from USGS
MINES	Mines
MINES USGS	Mines list from USGS
MLTS	Material Licensing Tracking Systems
NPL AOC	Areas related to NPL remediation sites
NPL LIENS	National Priority List Liens
NURSING HOMES	NURSING HOMES
OSHA	Occupational Safety & Health Administration
PADS	PCB Activity Database Systems
PCB TRANSFORMER	Polychlorinated Biphenyl (PCB) Waste
PCS ENF	Enforced Permit Compliance Facilities
PCS FACILITY	Permit Compliance Facilities
PFAS NPL	PFAS NPL Sites
PFAS TRIS	PFAS TRIS Sites
PFAS UCMR3	PFAS UCMR Samples

OTHER ASCERTAINABLE RECORDS (cont.)

PRISONS	PRISONS
RAATS	RCRA Administrative Action Tracking Systems
RADINFO	Radiation Information Systems
RMP	Risk Management Plans
ROD	Record of Decision
SCHOOLS PRIVATE	SCHOOLS PRIVATE
SCHOOLS PUBLIC	SCHOOLS PUBLIC
SCRD DRYCLEANERS	SCRD Drycleaners
SEMS_SMELTER	Sites on SEMS Potential Smelter Activity
SSTS	Section 7 Tracking Systems
STORMWATER	Storm Water Permits
TOSCA-PLANT	Toxic Substance Control Act: Plants
TRIS	Toxic Release Inventory Systems
UMTRA	Uranium Mill Tailing Sites
VAPOR	EPA Vapor Intrusion
AIRS - HI	Air permits
DRYCLEANERS - HI	Drycleaners

~~SUBJECT NAME: Sea Turtle Estates LLC~~
~~ADDRESS: 56-157 Kamehameha Hwy, Kahuku, HI, 96731~~
~~LAT/LONG: 21.662994 / -157.934432~~

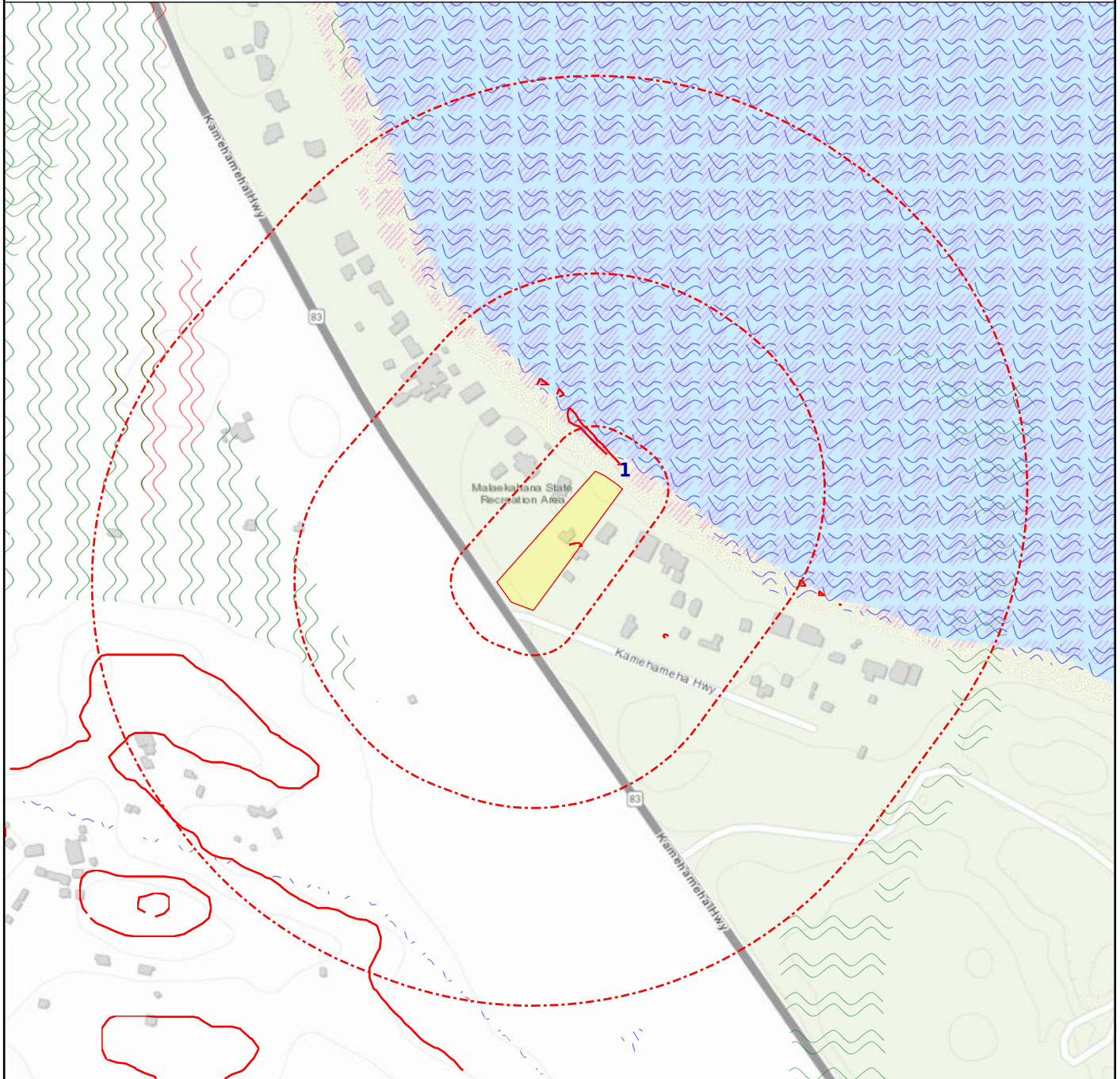
~~PREPARED FOR: Historical Information Gatherers~~
~~ORDER #: 82870~~
~~REPORT DATE: January 26, 2023~~



- | | | | |
|--|--|---|--|
| <ul style="list-style-type: none"> + Subject Property Department of Defense (No Data) ~ FEMA FloodZone 100 National Priority List (No Data) | <ul style="list-style-type: none"> ● Equal/Higher Elevation ~ DFIRM Floodzone 100 ~ FEMA FloodZone 500 ~ NWI | <ul style="list-style-type: none"> ● Lower Elevation ~ DFIRM Floodzone 500 Historical DOD (No Data) | <ul style="list-style-type: none"> ~ CDC HAZDAT (No Data) Federal Lands Indian Reservation (No Data) |
|--|--|---|--|

~~SUBJECT NAME: Sea Turtle Estates LLC~~
~~ADDRESS: 56-157 Kamehameha Hwy, Kahuku, HI, 96731~~
~~LAT/LONG: 21.662994 / -157.934432~~

~~PREPARED FOR: Historical Information Gatherers~~
ORDER #: 82870
REPORT DATE: January 26, 2023



- | | | | | | | | |
|---|----------------------------------|---|------------------------|---|--------------------------|---|------------------------------|
| + | Subject Property | ● | Equal/Higher Elevation | ● | Lower Elevation | → | CDC HAZDAT (No Data) |
| ■ | Department of Defense (No Data) | ≡ | DFIRM Floodzone 100 | ≡ | DFIRM Floodzone 500 | ■ | Federal Lands |
| ≡ | FEMA FloodZone 100 | ≡ | FEMA FloodZone 500 | ■ | Historical DOD (No Data) | ■ | Indian Reservation (No Data) |
| ■ | National Priority List (No Data) | ≡ | NWI | | | | |

<u>DATABASE</u>	<u>SUBJECT PROPERTY</u>	<u>SEARCH DISTANCE (MILES)</u>	<u><1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>>1</u>	<u>TOTAL MAPPED</u>
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FEDERAL RCRA NON-CORRACTS TSD FACILITIES LIST

ARCHIVED RCRA TSD		0.500	0	0	0	--	--	0
RCRA_TSD		0.500	0	0	0	--	--	0

FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS

AST PBS		0.250	0	0	--	--	--	0
EPA UST		0.250	0	0	--	--	--	0
FEMA UST		0.250	0	0	--	--	--	0
HIST INDIAN UST R6		0.250	0	0	--	--	--	0
HIST INDIAN UST R7		0.250	0	0	--	--	--	0
INDIAN UST R1		0.250	0	0	--	--	--	0
INDIAN UST R10		0.250	0	0	--	--	--	0
INDIAN UST R2		0.250	0	0	--	--	--	0
INDIAN UST R4		0.250	0	0	--	--	--	0
INDIAN UST R5		0.250	0	0	--	--	--	0
INDIAN UST R6		0.250	0	0	--	--	--	0
INDIAN UST R7		0.250	0	0	--	--	--	0
INDIAN UST R8		0.250	0	0	--	--	--	0
INDIAN UST R9		0.250	0	0	--	--	--	0
AST - HI		0.250	0	0	--	--	--	0
HIST AST - HI		0.250	0	0	--	--	--	0
UST - HI		0.250	0	0	--	--	--	0

FEDERAL CERCLIS LIST

CERCLIS NFRAP		0.500	0	0	0	--	--	0
CERCLIS-HIST		0.500	0	0	0	--	--	0
EPA SAA		0.500	0	0	0	--	--	0
FEDERAL FACILITY		1.000	0	0	0	0	--	0
SEMS_8R_ACTIVE SITES		0.500	0	0	0	--	--	0
SEMS_8R_ARCHIVED SITES		0.500	0	0	0	--	--	0

FEDERAL RCRA CORRACTS FACILITIES LIST

CORRACTS		1.000	0	0	0	0	--	0
HIST CORRACTS 2		1.000	0	0	0	0	--	0

FEDERAL DELISTED NPL SITE LIST

DELISTED NPL		1.000	0	0	0	0	--	0
DELISTED PROPOSED NPL		1.000	0	0	0	0	--	0
SEMS_DELETED NPL		1.000	0	0	0	0	--	0

<u>DATABASE</u>	<u>SUBJECT PROPERTY</u>	<u>SEARCH DISTANCE (MILES)</u>	<u><1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>>1</u>	<u>TOTAL MAPPED</u>
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FEDERAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

EPA LF MOP		0.500	0	0	0	--	--	0
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FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS

EPA LUST		0.500	0	0	0	--	--	0
HIST INDIAN LUST R4		0.500	0	0	0	--	--	0
HIST INDIAN LUST R8		0.500	0	0	0	--	--	0
INDIAN LUST R1		0.500	0	0	0	--	--	0
INDIAN LUST R10		0.500	0	0	0	--	--	0
INDIAN LUST R2		0.500	0	0	0	--	--	0
INDIAN LUST R4		0.500	0	0	0	--	--	0
INDIAN LUST R5		0.500	0	0	0	--	--	0
INDIAN LUST R6		0.500	0	0	0	--	--	0
INDIAN LUST R7		0.500	0	0	0	--	--	0
INDIAN LUST R8		0.500	0	0	0	--	--	0
INDIAN LUST R9		0.500	0	0	0	--	--	0
HIST LUST - HI		0.500	0	0	0	--	--	0
LUST - HI		0.500	0	0	0	--	--	0

FEDERAL ERNS LIST

ERNS		SP	0	--	--	--	--	0
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FEDERAL INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES

FED E C		0.500	0	0	0	--	--	0
FED I C		0.500	0	0	0	--	--	0
RCRA IC_EC		0.250	0	0	--	--	--	0

FEDERAL RCRA GENERATORS LIST

HIST RCRA_CESQG		0.250	0	0	--	--	--	0
HIST RCRA_LQG		0.250	0	0	--	--	--	0
HIST RCRA_NONGEN		0.250	0	0	--	--	--	0
HIST RCRA_SQG		0.250	0	0	--	--	--	0
RCRA_LQG		0.250	0	0	--	--	--	0
RCRA_NONGEN		0.250	0	0	--	--	--	0
RCRA_SQG		0.250	0	0	--	--	--	0
RCRA_VSQG		0.250	0	0	--	--	--	0

FEDERAL NPL SITE LIST

NPL		1.000	0	0	0	0	--	0
NPL EPA R1 GIS		1.000	0	0	0	0	--	0

<u>DATABASE</u>	<u>SUBJECT PROPERTY</u>	<u>SEARCH DISTANCE (MILES)</u>	<u><1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>>1</u>	<u>TOTAL MAPPED</u>
FEDERAL NPL SITE LIST (cont.)								
NPL EPA R3 GIS		1.000	0	0	0	0	--	0
NPL EPA R6 GIS		1.000	0	0	0	0	--	0
NPL EPA R8 GIS		1.000	0	0	0	0	--	0
NPL EPA R9 GIS		1.000	0	0	0	0	--	0
PART NPL		1.000	0	0	0	0	--	0
PROPOSED NPL		1.000	0	0	0	0	--	0
SEMS_FINAL NPL		1.000	0	0	0	0	--	0
SEMS_PROPOSED NPL		1.000	0	0	0	0	--	0
STATE AND TRIBAL BROWNFIELD SITES								
TRIBAL BROWNFIELDS		0.500	0	0	0	--	--	0
BROWNFIELDS - HI		0.500	0	0	0	--	--	0
STATE INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES								
I C - HI		0.500	0	0	0	--	--	0
STATE- AND TRIBAL - EQUIVALENT CERCLIS								
SHWS - HI		1.000	0	0	0	2	--	2
STATE AND TRIBAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS								
SWF LF CLOSED - HI		0.500	0	0	0	--	--	0
SWF/LF - HI		0.500	0	0	0	--	--	0
STATE AND TRIBAL VOLUNTARY CLEANUP SITES								
VCP - HI		0.500	0	0	0	--	--	0
LOCAL BROWNFIELD LISTS								
BROWNFIELDS-ACRES		0.500	0	0	0	--	--	0
FED BROWNFIELDS		0.500	0	0	0	--	--	0
LOCAL LISTS OF HAZARDOUS WASTE / CONTAMINATED SITES								
FED CDL		SP	0	--	--	--	--	0
US HIST CDL		SP	0	--	--	--	--	0
LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES								
HIST INDIAN ODI R8		0.500	0	0	0	--	--	0
INDIAN ODI R8		0.500	0	0	0	--	--	0
ODI		0.500	0	0	0	--	--	0
TRIBAL ODI		0.500	0	0	0	--	--	0

<u>DATABASE</u>	<u>SUBJECT PROPERTY</u>	<u>SEARCH DISTANCE (MILES)</u>	<u><1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>>1</u>	<u>TOTAL MAPPED</u>
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RECORDS OF EMERGENCY RELEASE REPORTS

HMIRS (DOT)		SP	0	--	--	--	--	0
HIST SPILLS - HI		0.125	0	--	--	--	--	0
HIST SPILLS 2 - HI		0.125	0	--	--	--	--	0
SPILLS - HI		0.125	0	--	--	--	--	0

LOCAL LAND RECORDS

LIENS 2		SP	0	--	--	--	--	0
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OTHER ASCERTAINABLE RECORDS

AFS		SP	0	--	--	--	--	0
ALT FUELING		0.250	0	0	--	--	--	0
ARENAS		SP	0	--	--	--	--	0
ARENAS 2		SP	0	--	--	--	--	0
BRS		SP	0	--	--	--	--	0
CDC HAZDAT		1.000	0	0	0	0	--	0
CHURCHES		SP	0	--	--	--	--	0
COAL ASH DOE		0.500	0	0	0	--	--	0
COAL ASH EPA		0.500	0	0	0	--	--	0
COAL GAS		1.000	0	0	0	0	--	0
COLLEGES		SP	0	--	--	--	--	0
COLLEGES 2		SP	0	--	--	--	--	0
CONSENT (DECREEES)		1.000	0	0	0	0	--	0
CORRECTIVE ACTIONS_2020		0.500	0	0	0	--	--	0
DAYCARE		SP	0	--	--	--	--	0
DEBRIS EPA LF		0.500	0	0	0	--	--	0
DEBRIS EPA SWRCY		0.500	0	0	0	--	--	0
DOD		1.000	0	0	0	0	--	0
DOT OPS		SP	0	--	--	--	--	0
ECHO		SP	0	--	--	--	--	0
ENOI		SP	0	--	--	--	--	0
EPA FUELS		SP	0	--	--	--	--	0
EPA OSC		0.125	0	--	--	--	--	0
EPA WATCH		SP	0	--	--	--	--	0
FA HWF		SP	0	--	--	--	--	0
FEDLAND		1.000	1	0	0	0	--	1
FRS		SP	0	--	--	--	--	0
FTTS		SP	0	--	--	--	--	0

<u>DATABASE</u>	<u>SUBJECT PROPERTY</u>	<u>SEARCH DISTANCE (MILES)</u>	<u><1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>>1</u>	<u>TOTAL MAPPED</u>
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OTHER ASCERTAINABLE RECORDS (cont.)

FTTS INSP		SP	0	--	--	--	--	0
FUDS		1.000	0	0	0	3	--	3
GOV MANSIONS		SP	0	--	--	--	--	0
HIST AFS		SP	0	--	--	--	--	0
HIST AFS 2		SP	0	--	--	--	--	0
HIST DOD		1.000	0	0	0	0	--	0
HIST LEAD_SMELTER		SP	0	--	--	--	--	0
HIST MLTS		SP	0	--	--	--	--	0
HIST PCB TRANS		SP	0	--	--	--	--	0
HIST PCS ENF		SP	0	--	--	--	--	0
HIST PCS FACILITY		SP	0	--	--	--	--	0
HIST SSTS		SP	0	--	--	--	--	0
HOSPITALS		SP	0	--	--	--	--	0
HWC DOCKET		SP	0	--	--	--	--	0
ICIS		SP	0	--	--	--	--	0
INACTIVE PCS		SP	0	--	--	--	--	0
INDIAN RESERVATION		1.000	0	0	0	0	--	0
LUCIS		0.500	0	0	0	--	--	0
LUCIS 2		0.500	0	0	0	--	--	0
MANIFEST EPA		0.250	0	0	--	--	--	0
MINE OPERATIONS		0.250	0	0	--	--	--	0
MINES		0.250	0	0	--	--	--	0
MINES USGS		0.250	0	0	--	--	--	0
MLTS		SP	0	--	--	--	--	0
NPL AOC		1.000	0	0	0	0	--	0
NPL LIENS		SP	0	--	--	--	--	0
NURSING HOMES		SP	0	--	--	--	--	0
OSHA		SP	0	--	--	--	--	0
PADS		SP	0	--	--	--	--	0
PCB TRANSFORMER		SP	0	--	--	--	--	0
PCS ENF		SP	0	--	--	--	--	0
PCS FACILITY		SP	0	--	--	--	--	0
PFAS NPL		0.500	0	0	0	--	--	0
PFAS TRIS		0.500	0	0	0	--	--	0
PFAS UCMR3		0.500	0	0	0	--	--	0
PRISONS		SP	0	--	--	--	--	0

<u>DATABASE</u>	<u>SUBJECT PROPERTY</u>	<u>SEARCH DISTANCE (MILES)</u>	<u><1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>>1</u>	<u>TOTAL MAPPED</u>
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OTHER ASCERTAINABLE RECORDS (cont.)

RAATS		SP	0	--	--	--	--	0
RADINFO		SP	0	--	--	--	--	0
RMP		0.250	0	0	--	--	--	0
ROD		1.000	0	0	0	0	--	0
SCHOOLS PRIVATE		SP	0	--	--	--	--	0
SCHOOLS PUBLIC		SP	0	--	--	--	--	0
SCRD DRYCLEANERS		0.250	0	0	--	--	--	0
SEMS_SMELTER		SP	0	--	--	--	--	0
SSTS		SP	0	--	--	--	--	0
STORMWATER		SP	0	--	--	--	--	0
TOSCA-PLANT		SP	0	--	--	--	--	0
TRIS		SP	0	--	--	--	--	0
UMTRA		0.500	0	0	0	--	--	0
VAPOR		0.500	0	0	0	--	--	0
AIRS - HI		SP	0	--	--	--	--	0
DRYCLEANERS - HI		0.250	0	0	--	--	--	0

Map Id: 1
Direction: NE
Distance: 0.011 mi., 56 ft.
Elevation: N/R
Relative: N/R

Site Name : Hawaiian Islands Humpback Whale
National Marine Sanctuary
21.735932, -158.05135
HI
Database(s) : [FEDLAND]

Envirosite ID: 50048171
EPA ID: N/R

FEDLAND

Facility Name : Hawaiian Islands Humpback Whale National Marine Sanctuary
Facility Address : HI

Source Date : 2021-08-03
Category : Marine
Loc Name : Hawaiian Islands Humpback Whale National Marine Sanctuary
Owner Name : DESG
Local Owner : Unknown
Owner Type : DESG
Manager Type : FED
Manager Name : NOAA
Local Manager : NOAA National Marine Sanctuary Program
Designation Type : MPA
Local Designation : National Marine Sanctuary
GIS Acres : 874067
Source Protected Area ID : NMS9
WDPA Site : 220003
Public Access : OA
Access Source : NOAA
GAP Status Date : 2021
GAP Status : 2
GAP Status Source : NOAA
IUCN Category Date : 2021
IUCN Category : IV
IUCN Category Source : NOAA
Date of Establishment : 1992
Access Date : 2021
Easement Holder : N/R
Easement Holder Type : N/R
Comments : [Click here for hyperlink provided by the agency.](#)
Last Date in Agency List : 2023-01-19

Map Id: 2
Direction: WSW
Distance: 0.585 mi., 3090 ft.
Elevation: 43 ft.
Relative: Higher

Site Name : Pier 12 Honolulu Harbor | Pier 12 and Pier
15 Improvements
Honolulu Harbor | Pier 12 Honolulu Harbor
Honolulu, HI 96817
Database(s) : [HIST SPILLS 2 - HI, SHWS - HI]

Envirosite ID: 40194436
EPA ID: N/R

HIST SPILLS 2 - HI

Facility Name : Pier 12 Honolulu Harbor
Facility Address : Honolulu Harbor, Honolulu, 96817

Case Number : 19950505-1
Activity End Date : N/R
HID Number : N/R
Facility Registry Identifier : N/R

Map Id: 2
 Direction: WSW
 Distance: 0.585 mi., 3090 ft.
 Elevation: 43 ft.
 Relative: Higher

Site Name : Pier 12 Honolulu Harbor | Pier 12 and Pier 15 Improvements
 Honolulu Harbor | Pier 12 Honolulu Harbor
 Honolulu, HI 96817

Database(s) : [HIST SPILLS 2 - HI, SHWS - HI] **(cont.)**

Envirosite ID: 40194436
EPA ID: N/R

HIST SPILLS 2 - HI (cont.)

Activity Type :	Response
Activity Lead :	Terry Corpus
Activity Result :	SOSC NFA
Substances :	N/R
Quantity :	N/R
Lead and Program :	HEER EP&R
National Response Center Incident Report:	N/R
Organization :	N/R
Location Island :	Oahu
Supplemental Location :	Honolulu Harbor Pier 12
EP&R Environmental Interest :	Pier 12 Honolulu Harbor
Was coordination needed on or off scene?:	N/R
Last Date in Agency List :	2018-07-17

SHWS - HI

Facility Name :	Pier 12 and Pier 15 Improvements
Facility Address :	Pier 12 Honolulu Harbor, Honolulu
County :	Oahu

Site Details

SDAR Environmental Interest Name :	N/R
Supplemental Location Text :	N/R
HID Number :	N/R
Facility Registry Identifier :	N/R
Program Full Name :	State
Potential Hazard and Controls :	Hazard Undetermined
Assessment :	Assessment
Priority :	Medium
Nature of Contamination :	N/R
Nature of Residual Contamination :	N/R
Response :	N/R
Response Action Completed :	N/R
Lead Agency :	HEER Office
Use Restrictions :	N/R
Description of Restrictions :	N/R
Engineering Control :	N/R
Institutional Control :	N/R
Date Issued :	N/R
Within Designated Areawide Contamination:	N/R
Document Date :	N/R
Document Number :	N/R
Document Subject :	N/R
Site Closure Document :	N/R
Project Manager :	N/R
Unit :	N/R
Last Activity :	N/R
Number of Acres :	N/R
Status :	Ongoing
Contact Information :	N/R
Latitude :	21.661059

Map Id: 2
 Direction: WSW
 Distance: 0.585 mi., 3090 ft.
 Elevation: 43 ft.
 Relative: Higher

Site Name : Pier 12 Honolulu Harbor | Pier 12 and Pier 15 Improvements
 Honolulu Harbor | Pier 12 Honolulu Harbor
 Honolulu, HI 96817

Database(s) : [HIST SPILLS 2 - HI, SHWS - HI] *(cont.)*

Envirosite ID: 40194436
EPA ID: N/R

SHWS - HI (cont.)

Longitude : -157.943921
 Last Date in Agency List : 2021-12-06

Tax Map Key Information

Tax Map Key : N/R
 Description of Portion : N/R

Map Id: 3
 Direction: W
 Distance: 0.648 mi., 3420 ft.
 Elevation: 32 ft.
 Relative: Lower

Site Name : LAIE MILITARY RES
 21.661667, -157.945
 LAIE, HI

Database(s) : [FUDS]

Envirosite ID: 31220685
EPA ID: N/R

FUDS

Facility Name : LAIE MILITARY RES
 Facility Address : LAIE, HI
 County : HONOLULU

FUDS Property ID : H09HI0197
 FUDS Installation ID : HI99799F393500
 Status : Properties without projects
 NPL Status : N/R
 Current Owner : N/R
 Eligibility : Eligible
 FUDS Property have project : No
 EPA Region : 09
 Congressional District : 02
 District : Honolulu District (POH)
 EMS Map Link : [Click here for hyperlink provided by the agency.](#)
 Latitude : 21.661667
 Longitude : -157.945
 Fiscal Year : 2021
 Last Date in Agency List : 2022-11-02

Map Id: 4
Direction: E
Distance: 0.693 mi., 3659 ft.
Elevation: 0 ft.
Relative: Lower

Site Name : OAHU ISLAND TARGET 21.662701, -157.923004 MOKUAUIA, HI
Database(s) : [FUDS]

Envirosite ID: 31181002
EPA ID: N/R

FUDS

Facility Name : OAHU ISLAND TARGET
Facility Address : MOKUAUIA, HI
County : HONOLULU

FUDS Property ID : H09HI0264
FUDS Installation ID : HI99799F399400
Status : Properties with projects
NPL Status : N/R
Current Owner : N/R
Eligibility : Eligible
FUDS Property have project : Yes
EPA Region : 09
Congressional District : 02
District : Honolulu District (POH)
EMS Map Link : [Click here for hyperlink provided by the agency.](#)
Latitude : 21.662701
Longitude : -157.923004
Fiscal Year : 2021
Last Date in Agency List : 2022-11-02

Map Id: 5
Direction: NE
Distance: 0.735 mi., 3880 ft.
Elevation: 0 ft.
Relative: Lower

Site Name : FUDS Oahu Target Island N/R HI
Database(s) : [I C - HI, SHWS - HI]

Envirosite ID: 16623809
EPA ID: N/R

I C - HI

Facility Name : FUDS Oahu Target Island
Facility Address : N/R
County : Oahu

Site Details

SDAR Environmental Interest Name : FUDS Oahu Target Island
Supplemental Location Text : N/R
HID Number : N/R
Facility Registry Identifier : N/R
Program Full Name : Defense and State Memorandum of Agreement
Potential Hazard and Controls : Hazard Managed With Controls
Assessment : Response Necessary
Priority : Medium
Nature of Contamination : Found: Ordnance & explosives
Nature of Residual Contamination : N/R
Response : Response Ongoing
Response Action Completed : N/R
Lead Agency : HEER
Use Restrictions : Controls Required to Manage Contamination
Description of Restrictions : N/R

Map Id: 5
 Direction: NE
 Distance: 0.735 mi., 3880 ft.
 Elevation: 0 ft.
 Relative: Lower

Site Name : FUDS Oahu Target Island
 N/R
 HI
Database(s) : [I C - HI, SHWS - HI] **(cont.)**

Envirosite ID: 16623809
EPA ID: N/R

I C - HI **(cont.)**

Engineering Control : N/R
 Institutional Control : Government - Hawaii Dept. of Health Letter Issued
 Date Issued : 2008-12-04
 Within Designated Areawide Contamination: N/R
 Document Date : N/R
 Document Number : N/R
 Document Subject : N/R
 Site Closure Document : N/R
 Project Manager : Paul Chong
 Unit : N/R
 Last Activity : N/R
 Number of Acres : N/R
 Status : N/R
 Contact Information : (808) 586-4249, 2385 Waimano Home Rd, Pearl City, HI 96782
 Latitude : N/R
 Longitude : N/R
 Last Date in Agency List : 2019-06-05

Tax Map Key Information

Tax Map Key : 143001008
 Description of Portion : Mokulua Point

Tax Map Key : 144008004
 Description of Portion : Kapapa Island

Tax Map Key : 144009004
 Description of Portion : Mokumanu Island

Tax Map Key : 156001001
 Description of Portion : Kihewamoku Island

Tax Map Key : N/R
 Description of Portion : Kahuku Point

SHWS - HI

Facility Name : FUDS Oahu Target Island
 Facility Address : N/R
 County : Oahu

Site Details

SDAR Environmental Interest Name : FUDS Oahu Target Island
 Supplemental Location Text : N/R
 HID Number : N/R
 Facility Registry Identifier : N/R
 Program Full Name : N/R
 Potential Hazard and Controls : Hazard Managed With Controls
 Assessment : Response Necessary

Map Id: 5
 Direction: NE
 Distance: 0.735 mi., 3880 ft.
 Elevation: 0 ft.
 Relative: Lower

Site Name : FUDS Oahu Target Island
 N/R
 HI
Database(s) : [I C - HI, SHWS - HI] **(cont.)**

Envirosite ID: 16623809
EPA ID: N/R

SHWS - HI **(cont.)**

Priority :	Medium
Nature of Contamination :	Found: Ordnance & explosives
Nature of Residual Contamination :	N/R
Response :	Response Ongoing
Response Action Completed :	N/R
Lead Agency :	HEER
Use Restrictions :	Controls Required to Manage Contamination
Description of Restrictions :	N/R
Engineering Control :	N/R
Institutional Control :	Government - Hawaii Dept. of Health Letter Issued
Date Issued :	2008-12-04
Within Designated Areawide Contamination:	N/R
Document Date :	N/R
Document Number :	N/R
Document Subject :	N/R
Site Closure Document :	N/R
Project Manager :	Paul Chong
Unit :	N/R
Last Activity :	N/R
Number of Acres :	N/R
Status :	N/R
Contact Information :	(808) 586-4249, 2385 Waimano Home Rd, Pearl City, HI 96782
Latitude :	N/R
Longitude :	N/R
Last Date in Agency List :	2019-06-05

Tax Map Key Information

Tax Map Key :	143001008
Description of Portion :	Mokulua Point
Tax Map Key :	144008004
Description of Portion :	Kapapa Island
Tax Map Key :	144009004
Description of Portion :	Mokumanu Island
Tax Map Key :	156001001
Description of Portion :	Kihewamoku Island
Tax Map Key :	N/R
Description of Portion :	Kahuku Point

Map Id: 6
Direction: NNE
Distance: 0.974 mi., 5143 ft.
Elevation: 0 ft.
Relative: Lower

Site Name : OAHU BOMBING TARGETS
21.675833, -157.926389
ISLAND OF OAHU, HI
Database(s) : [FUDS]

Envirosite ID: 31181003
EPA ID: N/R

FUDS

Facility Name : OAHU BOMBING TARGETS
Facility Address : ISLAND OF OAHU, HI
County : HONOLULU

FUDS Property ID : H09HI0472
FUDS Installation ID : HI99799F989700
Status : Properties without projects
NPL Status : N/R
Current Owner : N/R
Eligibility : Eligible
FUDS Property have project : No
EPA Region : 09
Congressional District : 02
District : Honolulu District (POH)
EMS Map Link : [Click here for hyperlink provided by the agency.](#)
Latitude : 21.675833
Longitude : -157.926389
Fiscal Year : 2021
Last Date in Agency List : 2022-11-02

No unmappable sites reported.

FEDERAL RCRA NON-CORRACTS TSD FACILITIES LIST

ARCHIVED RCRA TSD: Resource Conservation and Recovery Act hazardous waste transportation storage disposal and treatment facilities

Agency Version Date: 09/19/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 215-814-2469
Planned Next Contact: 03/13/2023	Most Recent Contact: 12/15/2022

RCRA_TSD: Resource Conservation and Recovery Act hazardous waste transportation storage disposal and treatment facilities

Agency Version Date: 09/19/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 215-814-2469
Planned Next Contact: 03/13/2023	Most Recent Contact: 12/15/2022

FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS

AST PBS: Bulk petroleum terminals with a total bulk storage capacity of 50,000 barrels or more.

Agency Version Date: 11/07/2022	Agency: Department of Homeland Security
Agency Update Frequency: Quarterly	Agency Contact: 202-853-5361
Planned Next Contact: 02/02/2023	Most Recent Contact: 11/07/2022

EPA UST: Facilities listed in the EPA UST Finder database

Agency Version Date: 10/21/2022	Agency: EPA
Agency Update Frequency: Quarterly	Agency Contact: (202) 566-1667
Planned Next Contact: 04/14/2023	Most Recent Contact: 01/17/2023

FEMA UST: FEMA underground storage tank listing

Agency Version Date: 09/16/2022	Agency: FEMA
Agency Update Frequency: Varies	Agency Contact: 202-212-5283
Planned Next Contact: 03/09/2023	Most Recent Contact: 12/13/2022

HIST INDIAN UST R6: Historical Underground Storage Tanks on Indian Land in EPA Region 6

Agency Version Date: 12/03/2021	Agency: U.S. Environmental Protection Agency Region 6
Agency Update Frequency: Semi Annually	Agency Contact: 855-246-3642
Planned Next Contact: 02/10/2023	Most Recent Contact: 11/16/2022

HIST INDIAN UST R7: Historical Underground Storage Tanks on Indian Land in EPA Region 7

Agency Version Date: 08/10/2021	Agency: U.S. Environmental Protection Agency Region 7
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 01/30/2023	Most Recent Contact: 11/03/2022

INDIAN UST R1: Underground Storage Tanks on Indian Land in EPA Region 1

Agency Version Date: 01/05/2023	Agency: U.S. Environmental Protection Agency Region 1
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 04/03/2023	Most Recent Contact: 01/05/2023

INDIAN UST R10: Underground Storage Tanks on Indian Land in EPA Region 10

Agency Version Date: 11/03/2022	Agency: U.S. Environmental Protection Agency Region 10
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 01/30/2023	Most Recent Contact: 11/03/2022

FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS (cont.)

INDIAN UST R2: Underground Storage Tanks on Indian Land in EPA Region 2

Agency Version Date: 12/07/2016	Agency: U.S. Environmental Protection Agency Region 2
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 04/04/2023	Most Recent Contact: 01/06/2023

INDIAN UST R4: Underground Storage Tanks on Indian Land in EPA Region 4

Agency Version Date: 11/03/2022	Agency: U.S. Environmental Protection Agency Region 4
Agency Update Frequency: Semi Annually	Agency Contact: 855-246-3642
Planned Next Contact: 01/30/2023	Most Recent Contact: 11/03/2022

INDIAN UST R5: Underground Storage Tanks on Indian Land in EPA Region 5

Agency Version Date: 10/21/2022	Agency: U.S. Environmental Protection Agency Region 5
Agency Update Frequency: Varies	Agency Contact: 855-246-3642
Planned Next Contact: 04/14/2023	Most Recent Contact: 01/17/2023

INDIAN UST R6: Underground Storage Tanks on Indian Land in EPA Region 6

Agency Version Date: 11/18/2022	Agency: U.S. Environmental Protection Agency Region 6
Agency Update Frequency: Semi Annually	Agency Contact: 855-246-3642
Planned Next Contact: 02/14/2023	Most Recent Contact: 11/18/2022

INDIAN UST R7: Underground Storage Tanks on Indian Land in EPA Region 7

Agency Version Date: 10/21/2022	Agency: U.S. Environmental Protection Agency Region 7
Agency Update Frequency: Varies	Agency Contact: 855-246-3642
Planned Next Contact: 04/14/2023	Most Recent Contact: 01/17/2023

INDIAN UST R8: Underground Storage Tanks on Indian Land in EPA Region 8

Agency Version Date: 01/02/2023	Agency: U.S. Environmental Protection Agency Region 8
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 03/30/2023	Most Recent Contact: 01/02/2023

INDIAN UST R9: Underground Storage Tanks on Indian Land in EPA Region 9

Agency Version Date: 01/02/2023	Agency: U.S. Environmental Protection Agency Region 9
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 03/30/2023	Most Recent Contact: 01/02/2023

AST - HI: Aboveground storage tank listing

Agency Version Date: 12/05/2022	Agency: Hawaii Fire Department
Agency Update Frequency: No Update	Agency Contact: 808-640-3728
Planned Next Contact: 03/02/2023	Most Recent Contact: 12/05/2022

HIST AST - HI: Historical list of Aboveground storage tank listing

Agency Version Date: 07/09/2019	Agency: Hawaii Fire Department
Agency Update Frequency: Quarterly	Agency Contact: 808-640-3728
Planned Next Contact: 03/15/2023	Most Recent Contact: 12/19/2022

UST - HI: Underground storage tank listing

Agency Version Date: 01/05/2023	Agency: Hawai'i State Department of Health
Agency Update Frequency: Quarterly	Agency Contact: 808-586-4226
Planned Next Contact: 04/03/2023	Most Recent Contact: 01/05/2023

FEDERAL CERCLIS LIST

CERCLIS NFRAP: The CERCLIS sites with No Further Remedial Action Planned from the CERCLIS program database. The Environmental Protection Agency decommissioned the CERCLIS data in 2014. The last update was November 12, 2013.

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 800-424-9346
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

CERCLIS-HIST: The CERCLIS program database contains information on the assessment and remediation of federal hazardous waste sites. The Environmental Protection Agency decommissioned the CERCLIS data in 2014. The last update was November 12, 2013.

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 800-424-9346
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

EPA SAA: Listing of Sites with Superfund Alternative Approach Agreements.

Agency Version Date: 11/01/2021	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 800-424-9346
Planned Next Contact: 04/13/2023	Most Recent Contact: 01/17/2023

FEDERAL FACILITY: Sites where Federal Facilities Restoration and Reuse Office (FFRRO) arranged cleanup for Base Closure and Property Transfer at Federal Facilities

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: 703-603-8712
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

SEMS_8R_ACTIVE SITES: The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted. NPL sites include latitude and longitude information. For non-NPL sites, a brief site status is provided.

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

SEMS_8R_ARCHIVED SITES: The Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

FEDERAL RCRA CORRACTS FACILITIES LIST

CORRACTS: List of facilities where Resource Conservation and Recovery Act Corrective Action Program used to investigate and remediate hazardous releases

Agency Version Date: 09/19/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 202-566-1667
Planned Next Contact: 03/13/2023	Most Recent Contact: 12/15/2022

HIST CORRACTS 2: List of facilities where Resource Conservation and Recovery Act Corrective Action Program used to investigate and remediate hazardous releases that are no longer in current agency list.

Agency Version Date: 10/12/2018	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Annually	Agency Contact: 202-566-1667
Planned Next Contact: 02/08/2023	Most Recent Contact: 11/14/2022

FEDERAL DELISTED NPL SITE LIST

DELISTED NPL: National Priority List of sites that were delisted and no longer require action

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

DELISTED PROPOSED NPL: Sites that have been delisted from the proposed National Priority List

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

SEMS_DELETED NPL: All Deleted National Priority List Sties

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

FEDERAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

EPA LF MOP: Sites in the EPA Landfill Methane Outreach Program

Agency Version Date: 12/13/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 03/10/2023	Most Recent Contact: 12/13/2022

FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS

EPA LUST: Releases listed in the EPA UST Finder database

Agency Version Date: 10/21/2022	Agency: EPA
Agency Update Frequency: Quarterly	Agency Contact: (202) 566-1667
Planned Next Contact: 04/14/2023	Most Recent Contact: 01/17/2023

HIST INDIAN LUST R4: Historical Leaking Underground Storage Tanks on Indian Land in EPA Region 4

Agency Version Date: 08/23/2021	Agency: U.S. Environmental Protection Agency Region 4
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 01/30/2023	Most Recent Contact: 11/03/2022

HIST INDIAN LUST R8: Historical Leaking Underground Storage Tanks on Indian Land in EPA Region 8

Agency Version Date: 08/16/2021	Agency: U.S. Environmental Protection Agency Region 8
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 04/18/2023	Most Recent Contact: 01/20/2023

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land in EPA Region 1

Agency Version Date: 07/14/2022	Agency: U.S. Environmental Protection Agency Region 1
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 04/03/2023	Most Recent Contact: 01/05/2023

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land in EPA Region 10

Agency Version Date: 11/03/2022	Agency: U.S. Environmental Protection Agency Region 10
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 01/30/2023	Most Recent Contact: 11/03/2022

FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS (cont.)

INDIAN LUST R2: Leaking Underground Storage Tanks on Indian Land in EPA Region 2

Agency Version Date: 12/07/2016	Agency: U.S. Environmental Protection Agency Region 2
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 04/04/2023	Most Recent Contact: 01/06/2023

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land in EPA Region 4

Agency Version Date: 11/03/2022	Agency: U.S. Environmental Protection Agency Region 4
Agency Update Frequency: Semi Annually	Agency Contact: 855-246-3642
Planned Next Contact: 01/30/2023	Most Recent Contact: 11/03/2022

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land in EPA Region 5

Agency Version Date: 10/21/2022	Agency: U.S. Environmental Protection Agency Region 5
Agency Update Frequency: Varies	Agency Contact: 855-246-3642
Planned Next Contact: 04/14/2023	Most Recent Contact: 01/17/2023

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land in EPA Region 6

Agency Version Date: 10/24/2022	Agency: U.S. Environmental Protection Agency Region 6
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 04/17/2023	Most Recent Contact: 01/19/2023

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land in EPA Region 7

Agency Version Date: 10/21/2022	Agency: U.S. Environmental Protection Agency Region 7
Agency Update Frequency: Varies	Agency Contact: 855-246-3642
Planned Next Contact: 04/14/2023	Most Recent Contact: 01/17/2023

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land in EPA Region 8

Agency Version Date: 10/25/2022	Agency: U.S. Environmental Protection Agency Region 8
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 04/18/2023	Most Recent Contact: 01/20/2023

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land in EPA Region 9

Agency Version Date: 01/02/2023	Agency: U.S. Environmental Protection Agency Region 9
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 03/30/2023	Most Recent Contact: 01/02/2023

HIST LUST - HI: List of leaking underground storage tank sites that are no longer in current agency list.

Agency Version Date: 01/10/2018	Agency: Hawaii State Department of Health
Agency Update Frequency: Annually	Agency Contact: 808-586-4226
Planned Next Contact: 03/15/2023	Most Recent Contact: 12/19/2022

LUST - HI: Leaking underground storage tank sites listing

Agency Version Date: 01/06/2023	Agency: Hawai'i State Department of Health
Agency Update Frequency: Quarterly	Agency Contact: 808-586-4226
Planned Next Contact: 04/04/2023	Most Recent Contact: 01/06/2023

FEDERAL ERNS LIST

ERNS: Emergency Response Notification System records of reported spills

Agency Version Date: 01/09/2023
Agency Update Frequency: Annually
Planned Next Contact: 04/06/2023

Agency: National Response Center United States Coast Guard
Agency Contact: N/R
Most Recent Contact: 01/09/2023

FEDERAL INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES

FED E C: Federal listing of remediation sites with engineering controls

Agency Version Date: 11/10/2022
Agency Update Frequency: Varies
Planned Next Contact: 02/06/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 11/10/2022

FED I C: Federal listing of remediation sites with institutional controls

Agency Version Date: 11/10/2022
Agency Update Frequency: Varies
Planned Next Contact: 02/06/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 11/10/2022

RCRA IC_EC: Sites with institutional or engineering controls related to Resource Conservation and Recovery Act

Agency Version Date: 10/25/2022
Agency Update Frequency: Varies
Planned Next Contact: 04/18/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 01/20/2023

FEDERAL RCRA GENERATORS LIST

HIST RCRA_CESQG: List of Resource Conservation and Recovery Act licensed conditionally exempt small quantity generators that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 02/08/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 11/14/2022

HIST RCRA_LQG: List of Resource Conservation and Recovery Act licensed large quantity generators that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 02/08/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 11/14/2022

HIST RCRA_NONGEN: List of Resource Conservation and Recovery Act licensed non-generators that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 02/08/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 11/14/2022

HIST RCRA_SQG: List of Resource Conservation and Recovery Act licensed small quantity generators that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 02/08/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 11/14/2022

FEDERAL RCRA GENERATORS LIST (cont.)

RCRA_LQG: Resource Conservation and Recovery Act listing of licensed large quantity generators

Agency Version Date: 09/19/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 215-814-2469
Planned Next Contact: 03/13/2023	Most Recent Contact: 12/15/2022

RCRA_NONGEN: Resource Conservation and Recovery Act listing of licensed non-generators

Agency Version Date: 09/19/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: 215-814-2469
Planned Next Contact: 03/13/2023	Most Recent Contact: 12/15/2022

RCRA_SQG: Resource Conservation and Recovery Act listing of licensed small quantity generators

Agency Version Date: 09/19/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 215-814-2469
Planned Next Contact: 03/13/2023	Most Recent Contact: 12/15/2022

RCRA_VSQG: Resource Conservation and Recovery Act listing of licensed very small quantity generators.

Agency Version Date: 09/19/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: 215-814-2469
Planned Next Contact: 03/13/2023	Most Recent Contact: 12/15/2022

FEDERAL NPL SITE LIST

NPL: List of priority contaminated sites among identified releases or threatened releases of hazardous substances pollutants or contaminants nationally

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

NPL EPA R1 GIS: Geospatial data for the Environmental Protection Agency Region 1 National Priority List subject to environmental regulation

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 202-566-2132
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

NPL EPA R3 GIS: Geospatial data for the Environmental Protection Agency Region 3 National Priority List subject to environmental regulation

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 202-566-2132
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

NPL EPA R6 GIS: Geospatial data for the Environmental Protection Agency Region 6 National Priority List subject to environmental regulation

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 202-566-2132
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

NPL EPA R8 GIS: Geospatial data for the Environmental Protection Agency Region 8 National Priority List subject to environmental regulation

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 202-566-2132
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

FEDERAL NPL SITE LIST (cont.)

NPL EPA R9 GIS: Geospatial data for the Environmental Protection Agency Region 9 National Priority List subject to environmental regulation

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 202-566-2132
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

PART NPL: Sites that are a part of an National Priority List site referred to as the parent site

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

PROPOSED NPL: Sites that have been proposed for the National Priority List

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

SEMS_FINAL NPL: All Included National Priority List Sites

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

SEMS_PROPOSED NPL: All Proposed National Priority List Sites

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

STATE AND TRIBAL BROWNFIELD SITES

TRIBAL BROWNFIELDS: Tribal brownfield remediation site listing

Agency Version Date: 02/10/2017	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: No Longer Maintained	Agency Contact: 855-246-3642
Planned Next Contact: 02/28/2023	Most Recent Contact: 12/02/2022

BROWNFIELDS - HI: Listing of brownfield remediation sites

Agency Version Date: 12/21/2021	Agency: Hawai'i State Department of Health
Agency Update Frequency: Varies	Agency Contact: 808-586-4249
Planned Next Contact: 02/13/2023	Most Recent Contact: 11/17/2022

STATE INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES

I C - HI: Remediation sites with institutional controls

Agency Version Date: 12/21/2021	Agency: Hawai'i State Department of Health
Agency Update Frequency: Semi Annually	Agency Contact: 808-586-4249
Planned Next Contact: 02/13/2023	Most Recent Contact: 11/17/2022

STATE- AND TRIBAL - EQUIVALENT CERCLIS

SHWS - HI: Listing of state hazardous waste sites

Agency Version Date: 12/21/2021	Agency: Hawai'i State Department of Health
Agency Update Frequency: Semi Annually	Agency Contact: 808-586-4226
Planned Next Contact: 02/13/2023	Most Recent Contact: 11/17/2022

STATE AND TRIBAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

SWF LF CLOSED - HI: Closed solid waste facilities and landfill listing

Agency Version Date: 05/26/2021
 Agency Update Frequency: Semi Annually
 Planned Next Contact: 01/31/2023

Agency: Hawai'i State Department of Health
 Agency Contact: 808-586-4226
 Most Recent Contact: 11/04/2022

SWF/LF - HI: Solid waste facility and landfill listing

Agency Version Date: 11/06/2020
 Agency Update Frequency: Semi Annually
 Planned Next Contact: 03/27/2023

Agency: Hawai'i State Department of Health
 Agency Contact: 808-586-4226
 Most Recent Contact: 12/29/2022

STATE AND TRIBAL VOLUNTARY CLEANUP SITES

VCP - HI: Voluntary cleanup program remediation sites listing

Agency Version Date: 12/21/2021
 Agency Update Frequency: Varies
 Planned Next Contact: 02/13/2023

Agency: Hawai'i State Department of Health
 Agency Contact: 808-586-4249
 Most Recent Contact: 11/17/2022

LOCAL BROWNFIELD LISTS

BROWNFIELDS-ACRES: EPA Brownfields Assessment, Cleanup and Redevelopment Exchange System.

Agency Version Date: 11/28/2022
 Agency Update Frequency: Quarterly
 Planned Next Contact: 02/23/2023

Agency: U.S. Environmental Protection Agency
 Agency Contact: 855-246-3642
 Most Recent Contact: 11/28/2022

FED BROWNFIELDS: Federal brownfield remediation sites

Agency Version Date: 10/13/2022
 Agency Update Frequency: Semi Annually
 Planned Next Contact: 04/06/2023

Agency: U.S. Environmental Protection Agency
 Agency Contact: 855-246-3642
 Most Recent Contact: 01/09/2023

LOCAL LISTS OF HAZARDOUS WASTE / CONTAMINATED SITES

FED CDL: The U.S. Department of Justice listing of clandestine drug lab locations

Agency Version Date: 12/29/2022
 Agency Update Frequency: Quarterly
 Planned Next Contact: 03/27/2023

Agency: U.S. Department of Justice
 Agency Contact: 202-307-7610
 Most Recent Contact: 12/29/2022

US HIST CDL: The U.S. Department of Justice historical listing of clandestine drug lab locations

Agency Version Date: 08/05/2019
 Agency Update Frequency: Quarterly
 Planned Next Contact: 02/01/2023

Agency: U.S. Department of Justice
 Agency Contact: 202-307-7610
 Most Recent Contact: 11/07/2022

LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES

HIST INDIAN ODI R8: List of Region 8 Indian land open dump inventory sites maintained within the STARS program that is no longer in current agency list.

Agency Version Date: 11/12/2018
 Agency Update Frequency: Annually
 Planned Next Contact: 03/21/2023

Agency: Indian Health Service
 Agency Contact: 855-246-3642
 Most Recent Contact: 12/23/2022

LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES (cont.)

INDIAN ODI R8: Region 8 Indian land open dump inventory sites maintained within the STARS program

Agency Version Date: 07/21/2022	Agency: Indian Health Service
Agency Update Frequency: Varies	Agency Contact: 855-246-3642
Planned Next Contact: 04/10/2023	Most Recent Contact: 01/12/2023

ODI: Open dump inventory sites

Agency Version Date: 10/03/2017	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: No Update	Agency Contact: 855-246-3642
Planned Next Contact: 01/27/2023	Most Recent Contact: 11/01/2022

TRIBAL ODI: Indian land open dump inventory for all regions

Agency Version Date: 11/11/2022	Agency: Indian Health Service
Agency Update Frequency: Varies	Agency Contact: 301-443-3593
Planned Next Contact: 02/07/2023	Most Recent Contact: 11/11/2022

RECORDS OF EMERGENCY RELEASE REPORTS

HMIRS (DOT): Hazardous Material spills reported by the Department of Transportation

Agency Version Date: 12/06/2022	Agency: U.S. Department of Transportation
Agency Update Frequency: Varies	Agency Contact: (202) 366-4996
Planned Next Contact: 03/03/2023	Most Recent Contact: 12/06/2022

HIST SPILLS - HI: List of oil and hazardous material spills report sites that are no longer in current agency list.

Agency Version Date: 07/17/2018	Agency: Hawaii State Department of Health
Agency Update Frequency: Annually	Agency Contact: 808-586-4249
Planned Next Contact: 04/19/2023	Most Recent Contact: 01/23/2023

HIST SPILLS 2 - HI: List of oil and hazardous material spills reported through June of 2015.

Agency Version Date: 08/06/2019	Agency: Hawaii State Department of Health
Agency Update Frequency: Varies	Agency Contact: 808-586-4249
Planned Next Contact: 01/31/2023	Most Recent Contact: 11/04/2022

SPILLS - HI: Incidents from the HEER Emergency Response System

Agency Version Date: 10/10/2022	Agency: Hawaii State Department of Health
Agency Update Frequency: Varies	Agency Contact: 808-586-4249
Planned Next Contact: 04/06/2023	Most Recent Contact: 01/06/2023

LOCAL LAND RECORDS

LIENS 2: Comprehensive Environmental Response Compensation and Liability Act sites with liens

Agency Version Date: 05/11/2017	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: No Longer Maintained	Agency Contact: 800-424-9346
Planned Next Contact: 03/02/2023	Most Recent Contact: 12/05/2022

OTHER ASCERTAINABLE RECORDS

AFS: Air Facility Systems Quarterly Extract

Agency Version Date: 01/16/2023	Agency: Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: (202) 566-1667
Planned Next Contact: 04/13/2023	Most Recent Contact: 01/16/2023

OTHER ASCERTAINABLE RECORDS (cont.)

ALT FUELING: Alternative Fueling Stations by fuel type.

Agency Version Date: 12/13/2022
Agency Update Frequency: Quarterly
Planned Next Contact: 03/10/2023

Agency: U.S. Department of Energy
Agency Contact: N/R
Most Recent Contact: 12/13/2022

ARENAS: List of Arenas and Sport Venues

Agency Version Date: 11/04/2022
Agency Update Frequency: Varies
Planned Next Contact: 01/31/2023

Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 11/04/2022

ARENAS 2: List of Convention Centers and Fairgrounds

Agency Version Date: 11/04/2022
Agency Update Frequency: Varies
Planned Next Contact: 01/31/2023

Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 11/04/2022

BRS: Reporting of hazardous waste generation and management from large quantity generators

Agency Version Date: 09/19/2022
Agency Update Frequency: Biennial
Planned Next Contact: 03/13/2023

Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 12/15/2022

CDC HAZDAT: The Agency for Toxic Substances and Disease Registry's Hazardous Substance Release/Health Effects Database.

Agency Version Date: 10/18/2022
Agency Update Frequency: Varies
Planned Next Contact: 04/11/2023

Agency: Agency for Toxic Substances and Disease Registry
Agency Contact: 770-488-6399
Most Recent Contact: 01/13/2023

CHURCHES: List of places of worship

Agency Version Date: 11/07/2022
Agency Update Frequency: Varies
Planned Next Contact: 02/02/2023

Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 11/07/2022

COAL ASH DOE: List of existing and planned generators with 1 megawatt or greater of combined capacity that are utilizing coal ash impoundments.

Agency Version Date: 12/01/2022
Agency Update Frequency: Varies
Planned Next Contact: 02/27/2023

Agency: Department of Energy
Agency Contact: (202) 586-8800
Most Recent Contact: 12/01/2022

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

Agency Version Date: 02/18/2021
Agency Update Frequency: Varies
Planned Next Contact: 04/17/2023

Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 01/19/2023

COAL GAS: Manufactured Gas Plant locations

Agency Version Date: 12/23/2022
Agency Update Frequency: Quarterly
Planned Next Contact: 03/17/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 12/21/2022

COLLEGES: List of major Universities & Colleges

Agency Version Date: 01/05/2023
Agency Update Frequency: Varies
Planned Next Contact: 04/03/2023

Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 01/05/2023

OTHER ASCERTAINABLE RECORDS (cont.)

COLLEGES 2: List of Universities & Colleges

Agency Version Date: 01/06/2023	Agency: DHS Homeland Infrastructure Foundation
Agency Update Frequency: Varies	Agency Contact: N/R
Planned Next Contact: 04/06/2023	Most Recent Contact: 01/06/2023

CONSENT (DECREES): Legal decisions regarding responsibility for Superfund locations

Agency Version Date: 10/18/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (800) 424-9346
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

CORRECTIVE ACTIONS 2020: In 2009 the EPA created the 2020 Corrective Action Baseline list of contaminated or potentially contaminated sites with a cleanup goal to complete 95% by the year 2020. The names on the list indicate the facility owners who may or may not have caused the contamination.

Agency Version Date: 12/21/2018	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: No Longer Maintained	Agency Contact: N/R
Planned Next Contact: 04/04/2023	Most Recent Contact: 01/06/2023

DAYCARE: List of Daycare facilities

Agency Version Date: 01/03/2023	Agency: DHS Homeland Infrastructure Foundation
Agency Update Frequency: Varies	Agency Contact: N/R
Planned Next Contact: 03/31/2023	Most Recent Contact: 01/03/2023

DEBRIS EPA LF: EPA list of designated landfill facilities for the safe disposal of disaster debris.

Agency Version Date: 12/29/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 03/27/2023	Most Recent Contact: 12/29/2022

DEBRIS EPA SWRCY: EPA list of facilities for the safe recovery, recycling, and disposal of disaster debris.

Agency Version Date: 12/29/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 855-246-3642
Planned Next Contact: 03/27/2023	Most Recent Contact: 12/30/2022

DOD: Department of Defense sites from the Protected Areas Database (PAD-US)

Agency Version Date: 10/18/2022	Agency: United States Geologic Survey (USGS)
Agency Update Frequency: Varies	Agency Contact: 1-888-275-8747
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

DOT OPS: Incident Data Report

Agency Version Date: 11/03/2022	Agency: U.S. Department of Transportation
Agency Update Frequency: Varies	Agency Contact: (202) 366-4996
Planned Next Contact: 01/30/2023	Most Recent Contact: 11/03/2022

ECHO: ECHO is EPA Enforcement and Compliance History Online website to search for facilities in your community to assess their compliance with environmental regulations related to CAA, CWA, RCRA, & SDWA.

Agency Version Date: 09/12/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 202-566-1667
Planned Next Contact: 03/07/2023	Most Recent Contact: 12/09/2022

OTHER ASCERTAINABLE RECORDS (cont.)

ENOI: The Electronic Notice of Intent (eNOI) database contains construction sites and industrial facilities that submit permit requests to EPA for Construction General Permits (CGP) and Multi-Sector General Permits (MSGP).

Agency Version Date: 03/29/2021	Agency: Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: (202) 566-1667
Planned Next Contact: 02/20/2023	Most Recent Contact: 11/24/2022

EPA FUELS: List of companies and facilities registered to participate in EPA Fuel Programs under Title 40 CFR Part 80.

Agency Version Date: 10/24/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: (202) 564-2307
Planned Next Contact: 04/17/2023	Most Recent Contact: 01/19/2023

EPA OSC: Listing of oil spills and hazardous substance release sites requiring EPA On-Site Coordinators.

Agency Version Date: 12/02/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: (202) 564-2307
Planned Next Contact: 02/28/2023	Most Recent Contact: 12/02/2022

EPA WATCH: The EPA Watch List was used to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. EPA maintained the lists from 2011 - 2013.

Agency Version Date: 02/09/2018	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: No Longer Maintained	Agency Contact: (202) 564-2307
Planned Next Contact: 03/01/2023	Most Recent Contact: 12/05/2022

FA HWF: Hazardous Waste Facilities with Financial Assurance

Agency Version Date: 12/22/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (800) 424-9346
Planned Next Contact: 03/20/2023	Most Recent Contact: 12/22/2022

FEDLAND: Federal Lands from the Protected Areas Database (PAD-US)

Agency Version Date: 01/13/2023	Agency: United States Geologic Survey (USGS)
Agency Update Frequency: Varies	Agency Contact: 1-888-275-8747
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

FRS: Facility Registry Systems

Agency Version Date: 10/28/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (202) 566-1667
Planned Next Contact: 04/20/2023	Most Recent Contact: 01/24/2023

FTTS: Tracking of administrative and enforcement activities related to FIFRA/TSCA

Agency Version Date: 04/06/2013	Agency: Environmental Protection Agency
Agency Update Frequency: No Longer Maintained	Agency Contact: (202) 564-2280
Planned Next Contact: 03/15/2023	Most Recent Contact: 12/19/2022

FTTS INSP: Tracking of inspections related to FIFRA/TSCA

Agency Version Date: 05/08/2017	Agency: Environmental Protection Agency
Agency Update Frequency: No Longer Maintained	Agency Contact: (202) 564-2280
Planned Next Contact: 03/08/2023	Most Recent Contact: 12/12/2022

OTHER ASCERTAINABLE RECORDS (cont.)

FUDS: Defense sites that require cleanup

Agency Version Date: 10/27/2022
 Agency Update Frequency: Varies
 Planned Next Contact: 04/21/2023

Agency: US Army Corps of Engineering
 Agency Contact: (202) 761-0011
 Most Recent Contact: 01/24/2023

GOV MANSIONS: List of Governors Mansions

Agency Version Date: 11/04/2022
 Agency Update Frequency: Varies
 Planned Next Contact: 01/31/2023

Agency: DHS Homeland Infrastructure Foundation
 Agency Contact: N/R
 Most Recent Contact: 11/04/2022

HIST AFS: List of Air Facility Systems Quarterly Extract that are no longer in current agency list.

Agency Version Date: 06/19/2019
 Agency Update Frequency: Quarterly
 Planned Next Contact: 02/28/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 566-1667
 Most Recent Contact: 12/02/2022

HIST AFS 2: List of Air Facility Systems Quarterly Extract that are no longer in current agency list.

Agency Version Date: 11/26/2018
 Agency Update Frequency: Quarterly
 Planned Next Contact: 03/30/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 566-1667
 Most Recent Contact: 01/02/2023

HIST DOD: Department of Defense historical sites

Agency Version Date: 10/18/2022
 Agency Update Frequency: No Longer Maintained
 Planned Next Contact: 04/11/2023

Agency: Environmental Protection Agency
 Agency Contact: (800) 424-9346
 Most Recent Contact: 01/13/2023

HIST LEAD_SMELTER: List of former lead smelter sites that is no longer in current agency list.

Agency Version Date: 12/12/2018
 Agency Update Frequency: Annually
 Planned Next Contact: 03/15/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 566-1667
 Most Recent Contact: 12/19/2022

HIST MLTS: List of sites in possession/use of radioactive materials regulated by NRC that is no longer in current agency list.

Agency Version Date: 07/13/2016
 Agency Update Frequency: Annually
 Planned Next Contact: 03/24/2023

Agency: Nuclear Regulatory Commission
 Agency Contact: (800) 397-4209
 Most Recent Contact: 12/28/2022

HIST PCB TRANS: List of PCB Disposal Facilities that are no longer in current agency list.

Agency Version Date: 01/18/2018
 Agency Update Frequency: No Update
 Planned Next Contact: 04/14/2023

Agency: Environmental Protection Agency
 Agency Contact: (703) 308-8404
 Most Recent Contact: 01/18/2023

HIST PCS ENF: List of permitted facilities to discharge wastewater (Federal equivalent to NPDES) that are no longer in current agency list.

Agency Version Date: 12/08/2018
 Agency Update Frequency: Annually
 Planned Next Contact: 01/31/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 564-6582
 Most Recent Contact: 11/04/2022

OTHER ASCERTAINABLE RECORDS (cont.)

HIST PCS FACILITY: List of Permitted facilities to discharge wastewater (Federal equivalent to NPDES) that are no longer in current agency list.

Agency Version Date: 12/18/2018	Agency: Environmental Protection Agency
Agency Update Frequency: Annually	Agency Contact: (202) 564-6582
Planned Next Contact: 01/31/2023	Most Recent Contact: 11/04/2022

HIST SSTS: List of tracking of facilities who produce pesticides and their quantity that are no longer in current agency list.

Agency Version Date: 02/13/2019	Agency: Environmental Protection Agency
Agency Update Frequency: Annually	Agency Contact: (202) 566-1667
Planned Next Contact: 04/17/2023	Most Recent Contact: 01/19/2023

HOSPITALS: List of major Hospitals

Agency Version Date: 01/05/2023	Agency: DHS Homeland Infrastructure Foundation
Agency Update Frequency: Varies	Agency Contact: N/R
Planned Next Contact: 04/03/2023	Most Recent Contact: 01/05/2023

HWC DOCKET: Listing of Federal facilities which are managing or have managed hazardous waste; or have had a release of hazardous waste.

Agency Version Date: 10/25/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: (202) 564-2307
Planned Next Contact: 04/18/2023	Most Recent Contact: 01/20/2023

ICIS: Comprised of all Federal Administrative and Judicial enforcement information [intended to replace PCS] by tracking enforcement and compliance information (also contains what used to be known as FFTS)

Agency Version Date: 12/13/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (202) 566-1667
Planned Next Contact: 03/10/2023	Most Recent Contact: 12/13/2022

INACTIVE PCS: Inactive Permitted facilities to discharge wastewater

Agency Version Date: 12/13/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (202) 564-6582
Planned Next Contact: 03/10/2023	Most Recent Contact: 12/13/2022

INDIAN RESERVATION: American Indian Lands from the Protected Areas Database (PAD-US)

Agency Version Date: 01/13/2023	Agency: United States Geologic Survey (USGS)
Agency Update Frequency: Varies	Agency Contact: 1-888-275-8747
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

LUCIS: Land Use Control Information Systems

Agency Version Date: 12/12/2022	Agency: Department of the Navy: BRAC PMO
Agency Update Frequency: Quarterly	Agency Contact: (619) 532-0900
Planned Next Contact: 03/08/2023	Most Recent Contact: 12/12/2022

LUCIS 2: Land Use Control Information Systems

Agency Version Date: 01/17/2018	Agency: Department of the Navy: BRAC PMO
Agency Update Frequency: No Longer Maintained	Agency Contact: (619) 532-0900
Planned Next Contact: 04/14/2023	Most Recent Contact: 01/18/2023

OTHER ASCERTAINABLE RECORDS (cont.)

MANIFEST EPA: EPA Hazardous Waste Electronic Manifest System (e-Manifest)

Agency Version Date: 10/28/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: (202) 566-1667
Planned Next Contact: 04/21/2023	Most Recent Contact: 01/24/2023

MINE OPERATIONS: Mine plants and operations for commodities monitored by the National Minerals Information Center of the USGS

Agency Version Date: 11/01/2022	Agency: USGS Mineral Resources Program
Agency Update Frequency: Varies	Agency Contact: (703) 648-5953
Planned Next Contact: 01/27/2023	Most Recent Contact: 11/01/2022

MINES: Mines Master Index Files

Agency Version Date: 12/15/2022	Agency: Department of Labor
Agency Update Frequency: Varies	Agency Contact: (202) 693-9400
Planned Next Contact: 03/13/2023	Most Recent Contact: 12/15/2022

MINES USGS: Listing of all active mines and mineral plants in 2003

Agency Version Date: 11/01/2022	Agency: USGS Mineral Resources Program
Agency Update Frequency: Varies	Agency Contact: (703) 648-5953
Planned Next Contact: 01/27/2023	Most Recent Contact: 11/01/2022

MLTS: Sites in possession/use of radioactive materials regulated by NRC

Agency Version Date: 07/15/2022	Agency: Nuclear Regulatory Commission
Agency Update Frequency: Varies	Agency Contact: (800) 397-4209
Planned Next Contact: 04/07/2023	Most Recent Contact: 01/11/2023

NPL AOC: Areas of Concern related to NPL remediation sites

Agency Version Date: 10/18/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: N/R
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

NPL LIENS: National Priority List of sites with Liens

Agency Version Date: 10/18/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: 703-603-8867
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

NURSING HOMES: List of Nursing Homes

Agency Version Date: 01/02/2023	Agency: DHS Homeland Infrastructure Foundation
Agency Update Frequency: Varies	Agency Contact: N/R
Planned Next Contact: 03/31/2023	Most Recent Contact: 01/02/2023

OSHA: OSHA's listing of inspections violations and fatality information

Agency Version Date: 12/12/2022	Agency: Occupational Safety & Health Administration
Agency Update Frequency: Varies	Agency Contact: 800-321-6742
Planned Next Contact: 03/09/2023	Most Recent Contact: 12/12/2022

PADS: Listing of generators transporters commercial store/ brokers and disposers of PCB

Agency Version Date: 01/13/2023	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (703) 308-8404
Planned Next Contact: 04/11/2023	Most Recent Contact: 01/13/2023

OTHER ASCERTAINABLE RECORDS (cont.)

PCB TRANSFORMER: Disposal and Storage of Polychlorinated Biphenyl (PCB) Waste

Agency Version Date: 11/01/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: (703) 308-8404
Planned Next Contact: 01/27/2023	Most Recent Contact: 11/01/2022

PCS ENF: Permitted facilities to discharge wastewater (Federal equivalent to NPDES)

Agency Version Date: 12/13/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (202) 564-6582
Planned Next Contact: 03/10/2023	Most Recent Contact: 12/13/2022

PCS FACILITY: Permitted facilities to discharge wastewater (Federal equivalent to NPDES)

Agency Version Date: 12/13/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (202) 564-6582
Planned Next Contact: 03/10/2023	Most Recent Contact: 12/13/2022

PFAS NPL: List of NPL sites with PFAS or PFOA contamination

Agency Version Date: 01/09/2023	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 04/06/2023	Most Recent Contact: 01/09/2023

PFAS TRIS: List of TRIS sites where PFAS or PFOA are used/manufactured/ treated/ transported/released.

Agency Version Date: 12/13/2022	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (202) 566-1667
Planned Next Contact: 03/10/2023	Most Recent Contact: 12/13/2022

PFAS UCMR3: List of PWS wells sampled for Unregulated Contaminant Monitoring Rule (UCMR)

Agency Version Date: 06/02/2021	Agency: U.S. Environmental Protection Agency
Agency Update Frequency: Quarterly	Agency Contact: 703-603-8867
Planned Next Contact: 02/20/2023	Most Recent Contact: 11/24/2022

PRISONS: List of Prison facilities

Agency Version Date: 11/29/2022	Agency: DHS Homeland Infrastructure Foundation
Agency Update Frequency: Varies	Agency Contact: N/R
Planned Next Contact: 02/24/2023	Most Recent Contact: 11/29/2022

RAATS: Listing of major violators with enforcement actions issued under RCRA. Includes administrative and civil actions filed by the EPA. This dataset is no longer maintained.

Agency Version Date: 09/23/2019	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (202) 566-1667
Planned Next Contact: 03/31/2023	Most Recent Contact: 01/04/2023

RADINFO: EPA regulated facilities with radiation and radioactive materials

Agency Version Date: 08/01/2019	Agency: Environmental Protection Agency
Agency Update Frequency: Varies	Agency Contact: (202) 566-1667
Planned Next Contact: 03/20/2023	Most Recent Contact: 12/22/2022

RMP: Facilities producing/handling/ process/ distribute/ store specific chemicals report plans required by the Clean Air Act

Agency Version Date: 04/01/2022	Agency: Environmental Protection Agency
Agency Update Frequency: Monthly	Agency Contact: (202) 564-2534
Planned Next Contact: 03/17/2023	Most Recent Contact: 12/21/2022

OTHER ASCERTAINABLE RECORDS (cont.)

ROD: Permanent remedy at an NPL site

Agency Version Date: 10/18/2022
 Agency Update Frequency: Varies
 Planned Next Contact: 04/11/2023

Agency: Environmental Protection Agency
 Agency Contact: (800) 424-9346
 Most Recent Contact: 01/13/2023

SCHOOLS PRIVATE: List of Private Schools

Agency Version Date: 01/05/2023
 Agency Update Frequency: Varies
 Planned Next Contact: 04/03/2023

Agency: DHS Homeland Infrastructure Foundation
 Agency Contact: N/R
 Most Recent Contact: 01/05/2023

SCHOOLS PUBLIC: List of Public Schools

Agency Version Date: 01/05/2023
 Agency Update Frequency: Varies
 Planned Next Contact: 04/03/2023

Agency: DHS Homeland Infrastructure Foundation
 Agency Contact: N/R
 Most Recent Contact: 01/05/2023

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners

Agency Version Date: 11/18/2022
 Agency Update Frequency: No Update
 Planned Next Contact: 02/14/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 566-1667
 Most Recent Contact: 11/18/2022

SEMS_SMELTER: This report includes sites that have smelting-related, or potentially smelting-related, indicators in the SEMS database. The report includes information on the site location as well as contaminants of concern.

Agency Version Date: 10/18/2022
 Agency Update Frequency: Quarterly
 Planned Next Contact: 04/11/2023

Agency: U.S. Environmental Protection Agency
 Agency Contact: 703-603-8867
 Most Recent Contact: 01/13/2023

SSTS: Tracking of facilities who produce pesticides and their quantity

Agency Version Date: 11/24/2022
 Agency Update Frequency: Annually
 Planned Next Contact: 02/20/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 566-1667
 Most Recent Contact: 11/24/2022

STORMWATER: Permitted storm water sites

Agency Version Date: 12/06/2022
 Agency Update Frequency: Varies
 Planned Next Contact: 03/03/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 566-1667
 Most Recent Contact: 12/06/2022

TOSCA-PLANT: Plants controlled by the Toxic Substance Control Act

Agency Version Date: 09/05/2022
 Agency Update Frequency: Varies
 Planned Next Contact: 02/27/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 566-1667
 Most Recent Contact: 12/01/2022

TRIS: Information regarding toxic chemicals that are being used/manufactured/ treated/ transported/released into the environment

Agency Version Date: 12/13/2022
 Agency Update Frequency: Varies
 Planned Next Contact: 03/10/2023

Agency: Environmental Protection Agency
 Agency Contact: (202) 566-1667
 Most Recent Contact: 12/13/2022

OTHER ASCERTAINABLE RECORDS (cont.)

UMTRA: Uranium Recovery Sites

Agency Version Date: 06/21/2022
Agency Update Frequency: Varies
Planned Next Contact: 03/10/2023

Agency: United States Nuclear Regulatory Commission
Agency Contact: (301) 415-8200
Most Recent Contact: 12/13/2022

VAPOR: EPA Vapor Intrusion Database

Agency Version Date: 03/19/2021
Agency Update Frequency: Varies
Planned Next Contact: 02/21/2023

Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 11/25/2022

AIRS - HI: Facilities with air permits

Agency Version Date: 03/31/2021
Agency Update Frequency: Varies
Planned Next Contact: 02/24/2023

Agency: Hawai'i State Department of Health
Agency Contact: 808-586-4200
Most Recent Contact: 11/28/2022

DRYCLEANERS - HI: Drycleaner facility listing

Agency Version Date: 03/31/2021
Agency Update Frequency: Quarterly
Planned Next Contact: 02/24/2023

Agency: Hawai'i State Department of Health
Agency Contact: 808-586-4226
Most Recent Contact: 11/28/2022

SUBJECT PROPERTY ADDRESS:

Sea Turtle Estates LLC
 56-157 Kamehameha Hwy
 Kahuku, HI 96731

SUBJECT PROPERTY COORDINATES:

Latitude(North):	21.662994 - 21°39'46.8"
Longitude(West):	-157.934432 - -157°56'4"
Universal Transverse Mercator:	Zone 4N
UTM X (Meters):	610251.42
UTM Y (Meters):	2395904.41
State Plane Coordinates:	5103 - Hawaii Zone 3 (US Survey Feet)
X Coordinate (Feet):	1662681.934 E
Y Coordinate (Feet):	180299.879 N

ELEVATION:

Elevation: 36 ft. above sea level

USGS TOPOGRAPHIC MAP:

Subject Property Map: 21157-F8 Kahuku, HI
 Most Recent Revision: 2017

GEOHYDROLOGY DATA:

SUBJECT PROPERTY TOPOGRAPHY:

Topographic Gradient: Southwest

DFIRM FLOOD ZONE:

	DFIRM Flood
Subject Property County:	Electronic Data:
HONOLULU	Yes - refer to the PROPERTY PROXIMITY MAP and AREA MAP
Flood Plain Panel at Subject Property:	15003C0045H (Eff. date 11/5/2014)
Additional Panels in search area:	No available data

FEMA FLOOD ZONE:

	FEMA Flood
Subject Property County:	Electronic Data:
HONOLULU	Yes - refer to the PROPERTY PROXIMITY MAP and AREA MAP
Flood Plain Panel at Subject Property:	1500010015C
Additional Panels in search area:	1500010005B 1500010010A

NATIONAL WETLAND INVENTORY:

	NWI Electronic
<u>NWI Quad at Subject Property:</u>	<u>Data Coverage:</u>
Kahuku	Yes - refer to the Geological Findings Map

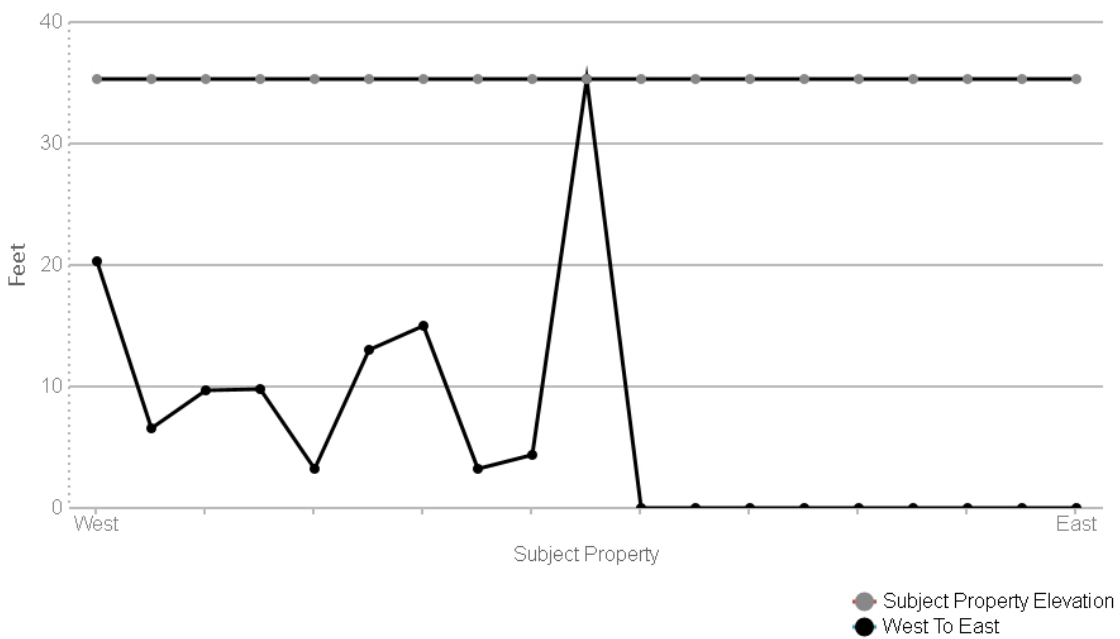
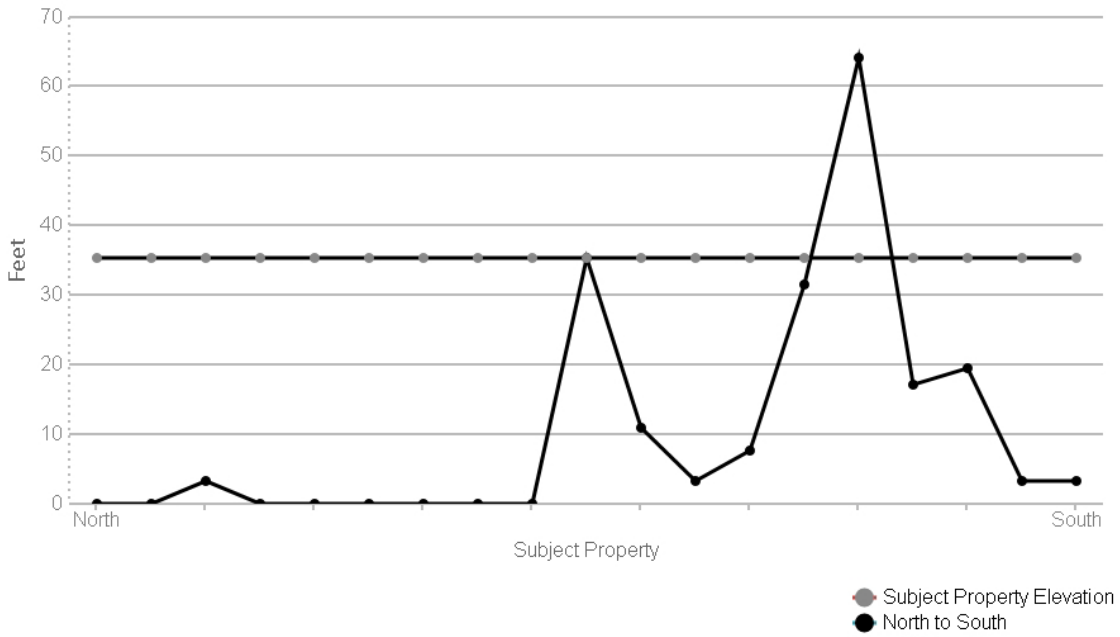
LITHOSTRATIGRAPHIC INFORMATION:

ROCK STRATIGRAPHIC UNIT:

GEOLOGIC AGE IDENTIFICATION

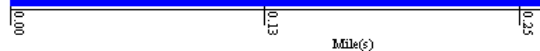
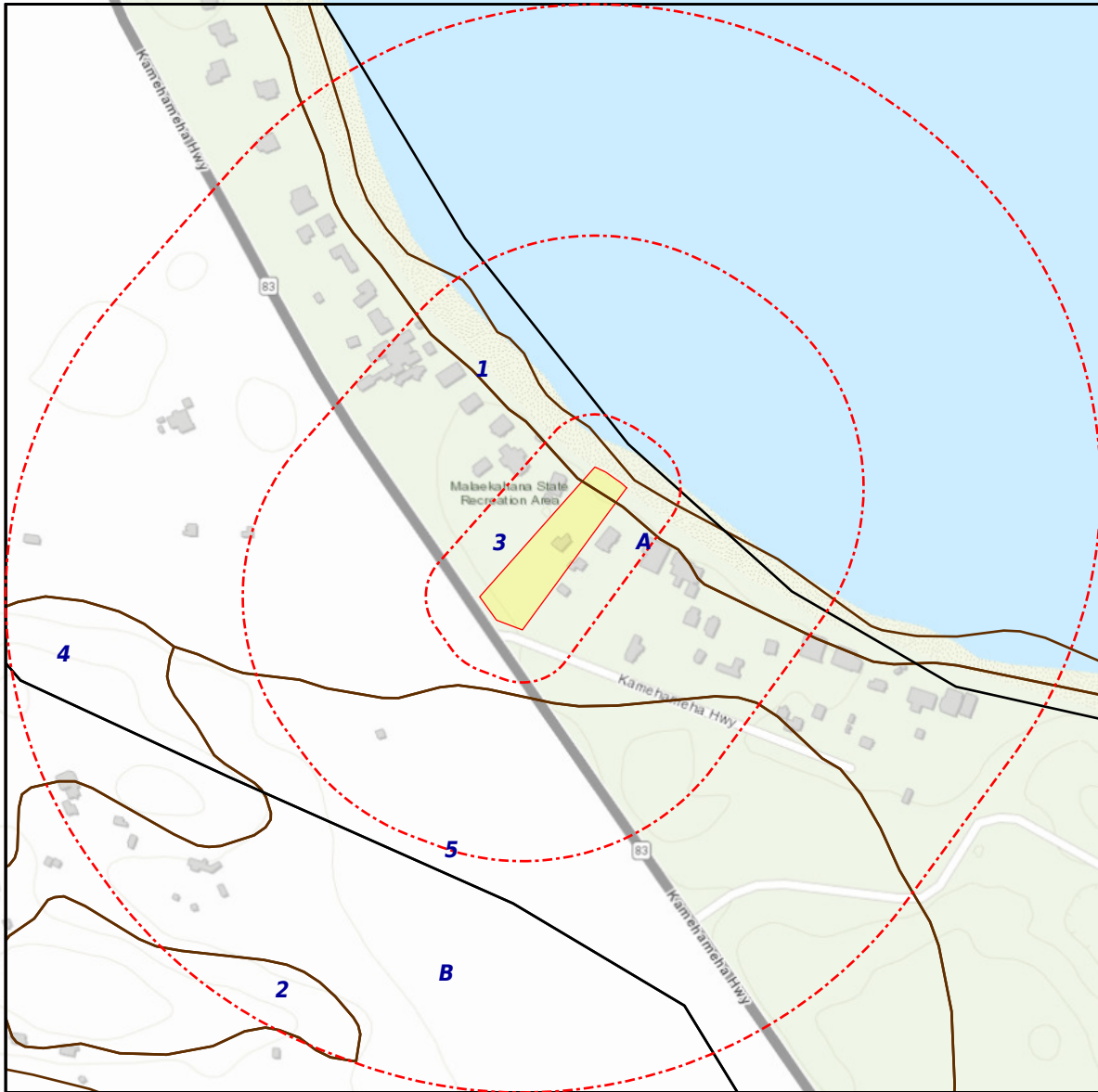
Era:	No available data	Category:	No available data
System:	No available data		
Series:	No available data		
Code:	No available data		

SURROUNDING ELEVATION PROFILES:



~~SUBJECT NAME: Sea Turtle Estates LLC~~
~~ADDRESS: 56-157 Kamehameha Hwy, Kahuku, HI, 96731~~
~~LAT/LONG: 21.662994 / -157.934432~~

~~PREPARED FOR: Historical Information Gatherers~~
ORDER #: 82870
REPORT DATE: January 26, 2023



+ Subject Property - SSURGO - STATSGO

SOIL COMPOSITION IN GENERAL AREA OF SUBJECT PROPERTY:

Agency source: Soil Conservation Service, US Department of Agriculture

SOIL MAP ID 1

SSURGO

USDA Soil Name	Beaches, Miscellaneous area
USDA Soil Texture	Coarse sand
Hydrologic Soil Group	Not Reported
Soil Drainage Class	Excessively drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Not Reported

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-15	Coarse sand	Granular materials (35% or less passing No. 200), fine sand. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	42.34-141	6.1-7.8
2	15-152	Coarse sand	Granular materials (35% or less passing No. 200), fine sand. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	42.34-141	6.1-7.8

SOIL MAP ID 2

SSURGO

USDA Soil Name	Coral outcrop, Miscellaneous area
USDA Soil Texture	Not Reported
Hydrologic Soil Group	Not Reported
Soil Drainage Class	Excessively drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Not Reported

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-152		No data	No data	1.41-42	0-0

SOIL MAP ID 3

SSURGO

USDA Soil Name	Jaucas, Series
USDA Soil Texture	Sand
Hydrologic Soil Group	A
Soil Drainage Class	Excessively drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Low

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-33	Sand	Granular materials (35% or less passing No. 200), fine sand. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	42.34-141	6.6-7.3
2	33-56	Sand	Granular materials (35% or less passing No. 200), fine sand. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	42.34-141	6.6-8.4
3	56-152	Sand	Granular materials (35% or less passing No. 200), fine sand. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM	42.34-141	6.6-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
3	56-152	Sand	Granular materials (35% or less passing No. 200), fine sand. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	test D 2487, in ASTM, 1984).	42.34-141	6.6-8.4

SOIL MAP ID 4

SSURGO

USDA Soil Name	Coral outcrop, Miscellaneous area
USDA Soil Texture	Not Reported
Hydrologic Soil Group	Not Reported
Soil Drainage Class	Excessively drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Not Reported

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-152		No data	No data	1.41-42	0-0

SOIL MAP ID 5

SSURGO

USDA Soil Name	Lahaina, Series
USDA Soil Texture	No data
Hydrologic Soil Group	B
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	No data	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for	4.23-42.34	5.6-6.5

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	No data	of State Highway and Transportation Officials, 1984.	general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4.23-42.34	5.6-6.5
2	18-38	No data	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4.23-42.34	5.6-6.5
3	38-58	No data	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.41-14	5.6-6.5
4	58-79	No data	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM,	1.41-14	5.6-6.5

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	58-79	No data	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984).	1984).	1.41-14	5.6-6.5
5	79-117	No data	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984).	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.41-14	5.6-6.5
6	117-152	No data	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984).	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.41-14	5.6-6.5

SOIL MAP ID A

STATSGO

USDA Soil Name	Lithic Ustorthents, Taxon above family
USDA Soil Texture	Not Reported
Hydrologic Soil Group	D
Soil Drainage Class	Well drained
Hydric Classification	6
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-6		No data	No data	1.4114-14.1143	6.1-7.3
2	6-60	Silty clay	No data	No data	1.4114-14.1143	6.1-7.3
3	60-64		No data	No data	0.4234-14.1143	No data

SOIL MAP ID B

STATSGO

USDA Soil Name	Wahiawa, Series
USDA Soil Texture	Silty clay
Hydrologic Soil Group	B
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-12	Silty clay	No data	No data	14.1143-42.343	5.1-6
2	12-60	Silty clay	No data	No data	14.1143-42.343	5.6-7.3

WATER AGENCY DATA:

WATER AGENCY SEARCH DISTANCES:

<u>DATABASE:</u>	<u>SEARCH DISTANCE (MILES):</u>
NWIS	1.000
PWS	1.000
WELLS - HI	1.000

<u>DISTANCE TO NEAREST:</u>	<u>DISTANCE:</u>
NWIS	0.098 mi / 519 ft
PWS	N/A
WELLS - HI	0.104 mi / 547 ft

FEDERAL WATER AGENCY DATA SUMMARY:

<u>MAP ID:</u>	<u>WELL ID:</u>	<u>LOCATION FROM SP:</u>
A1	213953157561001	< 1/8 Mile SE
B3	213953157562001	< 1/8 Mile SW
5	3-3956-008 213932157560701	1/8 - 1/4 Mile SSW
C6	214012157562901	1/4 - 1/2 Mile NW
8	16308500	1/2 - 1 Mile SSE
9	214020157562801	1/2 - 1 Mile NW
D10	214003157570101	1/2 - 1 Mile W
D11	214003157570100	1/2 - 1 Mile W
D12	214003157570201	1/2 - 1 Mile W
14	3-3957-007 213944157570701	1/2 - 1 Mile WSW
E17	213908157555901	1/2 - 1 Mile SSE

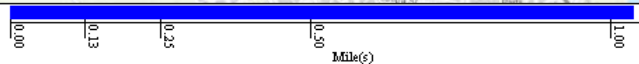
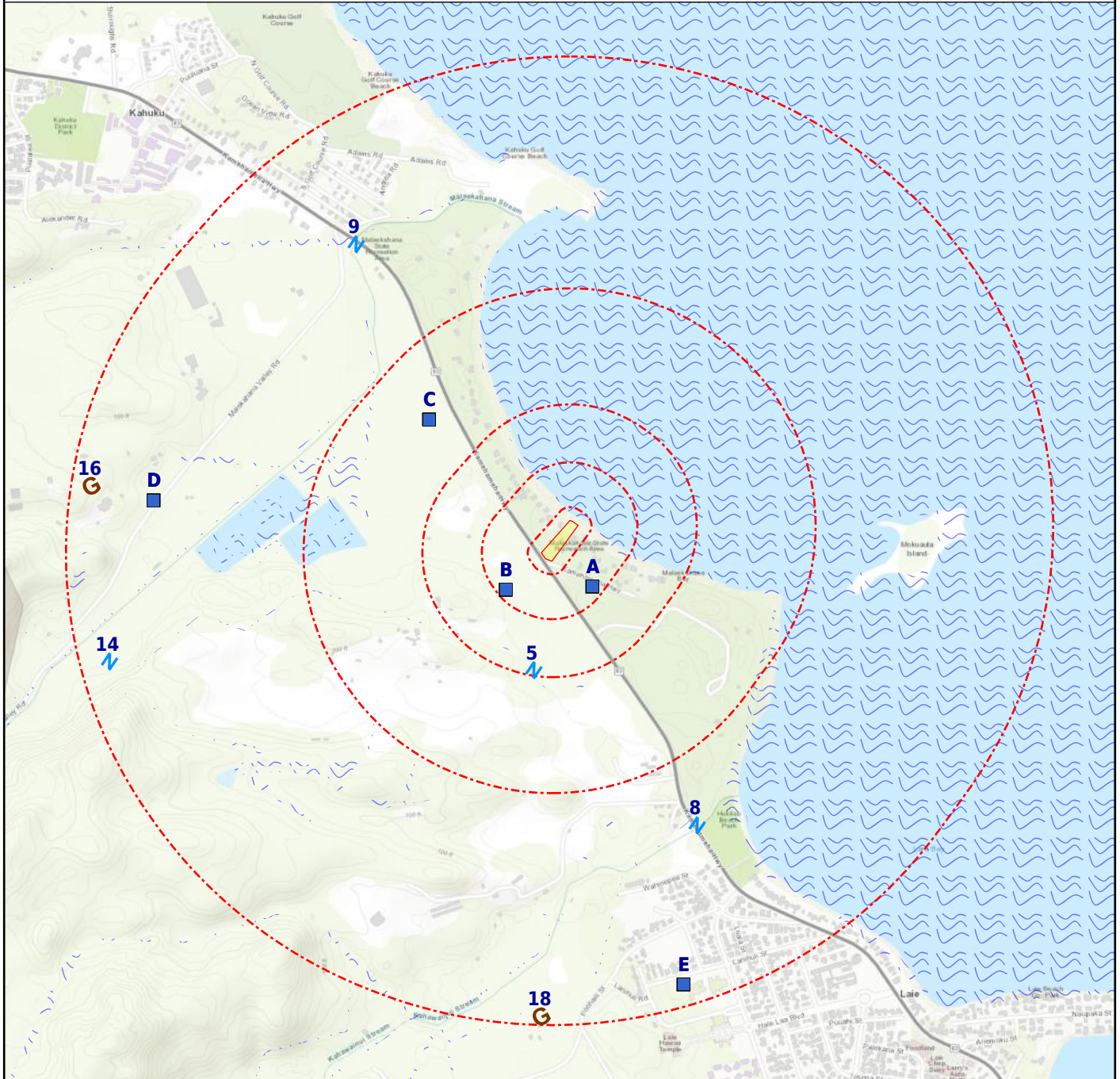
Note: PWS System location is not always the same as well location.

STATE/LOCAL WATER AGENCY DATA SUMMARY:

<u>MAP ID:</u>	<u>WELL ID:</u>	<u>LOCATION FROM SP:</u>
A2	3-3956-002	< 1/8 Mile SE
B4	3-3956-001	< 1/8 Mile SW
5	3-3956-008 213932157560701	1/8 - 1/4 Mile SSW
C7	3-4056-001	1/4 - 1/2 Mile NW
D13	3-4057-007 3-4057-010	1/2 - 1 Mile W
14	3-3957-007 213944157570701	1/2 - 1 Mile WSW
E15	3-3955-001	1/2 - 1 Mile SSE
18	3-3956-004	1/2 - 1 Mile S

~~SUBJECT NAME: Sea Turtle Estates LLC~~
~~ADDRESS: 56-157 Kamehameha Hwy, Kahuku, HI, 96731~~
~~LAT/LONG: 21.662994 / -157.934432~~

~~PREPARED FOR: Historical Information Gatherers~~
~~ORDER #: 82870~~
~~REPORT DATE: January 26, 2023~~



- + Subject Property
- ⊗ Basins (No Data)
- Geologic Cluster with Water Well
- Geological Site
- ⚡ NWIS
- ⚡ NWIS

Map Id: A2
 Direction: SE
 Distance: 0.104 mi., 547 ft.
 Elevation: 17 ft.
 Relative: Lower

Site Name : 3-3956-002
 21.661639, -157.933194
 HI
Database(s) : [WELLS - HI]

Envirosite ID: 47926622
EPA ID: N/R

WELLS - HI

Well Name :	Kahuku
Island :	Oahu
Aquifer Type :	N/R
Year Drilled :	1930
Owner User :	State of Hawaii, DLNR - Division of State Parks Oahu, DLNR-SP
Land Owner :	State of Hawaii
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	N/R
Driller :	N/R
Quad Map :	7
GPS :	FALSE
UTM :	TRUE
Pump Installer :	N/R
Old Number :	364
Casing Diameter :	12
Ground Elevation :	10
Well Depth :	364
Solid Case :	218
Perf Case :	N/R
Use :	UNU
INIT Head :	N/R
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	N/R
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	21
Test Unit :	C
Pump GPM 1 :	N/R
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	-354
Bot Solid :	-208
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	N/R
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-6-001:004
Aquifer Code :	30601
Latest HD :	N/R
WCR :	N/R
PIR :	N/R
Surveyor :	N/R
T :	N/R
Last Date in Agency List :	2022-08-05

Map Id: B4
 Direction: SW
 Distance: 0.110 mi., 581 ft.
 Elevation: 7 ft.
 Relative: Lower

Site Name : 3-3956-001
 21.661389, -157.936111
 HI
Database(s) : [WELLS - HI]

Envirosite ID: 47927343
EPA ID: N/R

WELLS - HI

Well Name :	Malaekahana
Island :	Oahu
Aquifer Type :	Basal
Year Drilled :	N/R
Owner User :	Hawaii Reserves, Inc.
Land Owner :	Hawaii Reserves, Inc.
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	Pump 7
Driller :	N/R
Quad Map :	7
GPS :	FALSE
UTM :	TRUE
Pump Installer :	N/R
Old Number :	363
Casing Diameter :	N/R
Ground Elevation :	18
Well Depth :	N/R
Solid Case :	N/R
Perf Case :	N/R
Use :	MUNPR
INIT Head :	N/R
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	N/R
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	N/R
Test Unit :	N/R
Pump GPM 1 :	160
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	N/R
Bot Solid :	N/R
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	0.23
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-6-006:006
Aquifer Code :	30601
Latest HD :	N/R
WCR :	N/R
PIR :	N/R
Surveyor :	N/R
T :	N/R
Last Date in Agency List :	2022-08-05

Map Id: 5
 Direction: SSW
 Distance: 0.244 mi., 1289 ft.
 Elevation: 20 ft.
 Relative: Lower

Site Name : 3-3956-008 | 213932157560701
 21.658889, -157.935278
 HI
Database(s) : [NWIS, WELLS - HI]

Envirosite ID: 16645445
EPA ID: N/R

NWIS

Site Identification Number :	213932157560701
Site Type :	Well
Station Name :	3-3956-08 Laie Deep Monitor, Oahu, HI
Agency :	U.S. Geological Survey
District :	N/R
State :	HI
County :	Honolulu County
Country :	USA
Land Net Location :	N/R
Name of Location Map :	KAHUKU, HI
Scale of Location Map :	24000
Altitude of Gage/Land Surface :	20
Method Altitude Determined :	Interpolated from Digital Elevation Model
Altitude Accuracy :	5
Altitude Datum :	Local Mean Sea Level
Hydrologic Unit :	Oahu
Drainage Basin :	N/R
Topographic Setting :	N/R
Flags for the Type of Data Collected:	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNO
Flags for Instruments at Site :	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Date of First Construction :	N/R
Date Site Established or Inventoried:	N/R
Drainage Area :	N/R
Contributing Drainage Area :	N/R
Data Reliability :	Unchecked data.
Data-Other GW Files :	Y Y
National Aquifer :	N/R
Local Aquifer :	N/R
Local Aquifer Type :	N/R
Well Depth :	860
Hole Depth :	N/R
Source of Depth Data :	A
Project Number :	N/R
Real-Time Data Flag :	0
Peak-Streamflow Data Begin Date :	N/R
Peak-Streamflow Data End Date :	N/R
Peak-Streamflow Data Count :	0
Water-Quality Data Begin Date :	N/R
Water-Quality Data End Date :	N/R
Water-Quality Data Count :	0
Field Water-Level Measurements Begin Date:	2004-01-01
Field Water-level Measurements End Date:	2004-03-30
Field Water-Level Measurements Count:	2
Site-Visit Data Begin Date :	N/R
Site-Visit Data End Date :	N/R
Site-Visit Data Count :	0
Latitude :	21.658889
Longitude :	-157.935278
Last Date in Agency List :	2022-11-11

WELLS - HI

Well Name :	Laie Deep Monitor
Island :	Oahu
Aquifer Type :	N/R

Map Id: 5
 Direction: SSW
 Distance: 0.244 mi., 1289 ft.
 Elevation: 20 ft.
 Relative: Lower

Site Name : 3-3956-008 | 213932157560701
 21.658889, -157.935278
 HI
Database(s) : [NWIS, WELLS - HI] **(cont.)**

Envirosite ID: 16645445
EPA ID: N/R

WELLS - HI (cont.)

Year Drilled :	2004
Owner User :	Honolulu Board of Water Supply, BWS
Land Owner :	L Leopardi (C&C of Honolulu)
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	N/R
Driller :	Valley Well Drilling, LLC
Quad Map :	7
GPS :	TRUE
UTM :	FALSE
Pump Installer :	N/R
Old Number :	N/R
Casing Diameter :	10
Ground Elevation :	23
Well Depth :	860
Solid Case :	220
Perf Case :	N/R
Use :	OBSDM
INIT Head :	14.29
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	N/R
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	N/R
Test Unit :	N/R
Pump GPM 1 :	0
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	-837
Bot Solid :	-197
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	N/R
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-6-006:001
Aquifer Code :	30601
Latest HD :	N/R
WCR :	N/R
PIR :	N/R
Surveyor :	Robert K. Y. Lee (Towill, Shigeoka & Associates, Inc)
T :	N/R
Last Date in Agency List :	2022-08-05

Map Id: C7
 Direction: NW
 Distance: 0.372 mi., 1964 ft.
 Elevation: 4 ft.
 Relative: Lower

Site Name : 3-4056-001
 21.666944, -157.938611
 HI
Database(s) : [WELLS - HI]

Envirosite ID: 47928667
EPA ID: N/R

WELLS - HI

Well Name :	Kawananakoa
Island :	Oahu
Aquifer Type :	Basal
Year Drilled :	N/R
Owner User :	Hawaii Reserves, Inc.
Land Owner :	Hawaii Reserves, Inc.
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	N/R
Driller :	N/R
Quad Map :	7
GPS :	FALSE
UTM :	TRUE
Pump Installer :	N/R
Old Number :	358-
Casing Diameter :	12
Ground Elevation :	11
Well Depth :	328
Solid Case :	188
Perf Case :	N/R
Use :	AGRLI
INIT Head :	12.3
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	117
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	21
Test Unit :	C
Pump GPM 1 :	N/R
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	-317
Bot Solid :	-177
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	N/R
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-6-006:006
Aquifer Code :	30601
Latest HD :	N/R
WCR :	N/R
PIR :	N/R
Surveyor :	N/R
T :	N/R
Last Date in Agency List :	2022-08-05

Map Id: 8
 Direction: SSE
 Distance: 0.650 mi., 3430 ft.
 Elevation: 4 ft.
 Relative: Lower

Site Name : 16308500
 21.654028, -157.929944
 HI
Database(s) : [NWIS]

Envirosite ID: 16642784
EPA ID: N/R

NWIS

Site Identification Number :	16308500
Site Type :	Stream
Station Name :	Kahawainui Str at Laie, Oahu, HI
Agency :	U.S. Geological Survey
District :	N/R
State :	HI
County :	Honolulu County
Country :	USA
Land Net Location :	N/R
Name of Location Map :	KAHUKU, HI
Scale of Location Map :	24000
Altitude of Gage/Land Surface :	1
Method Altitude Determined :	Interpolated from Digital Elevation Model
Altitude Accuracy :	1
Altitude Datum :	Local Mean Sea Level
Hydrologic Unit :	Oahu
Drainage Basin :	N/R
Topographic Setting :	Stream channel
Flags for the Type of Data Collected:	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNA
Flags for Instruments at Site :	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Date of First Construction :	N/R
Date Site Established or Inventoried:	N/R
Drainage Area :	5.45
Contributing Drainage Area :	N/R
Data Reliability :	N/R
Data-Other GW Files :	NNNNNNNN
National Aquifer :	N/R
Local Aquifer :	N/R
Local Aquifer Type :	N/R
Well Depth :	N/R
Hole Depth :	N/R
Source of Depth Data :	N/R
Project Number :	N/R
Real-Time Data Flag :	0
Peak-Streamflow Data Begin Date :	1997
Peak-Streamflow Data End Date :	2021-03-09
Peak-Streamflow Data Count :	22
Water-Quality Data Begin Date :	N/R
Water-Quality Data End Date :	N/R
Water-Quality Data Count :	0
Field Water-Level Measurements Begin Date:	N/R
Field Water-level Measurements End Date:	N/R
Field Water-Level Measurements Count:	0
Site-Visit Data Begin Date :	N/R
Site-Visit Data End Date :	N/R
Site-Visit Data Count :	0
Latitude :	21.654028
Longitude :	-157.929944
Last Date in Agency List :	2022-11-11

Map Id: D10
 Direction: W
 Distance: 0.812 mi., 4287 ft.
 Elevation: 10 ft.
 Relative: Lower

Site Name : 214003157570101
 21.664167, -157.9475
 HI
Database(s) : [NWIS]

Envirosite ID: 16646307
EPA ID: N/R

NWIS

Site Identification Number :	214003157570101
Site Type :	Well
Station Name :	3-4057-07 Kahuku P12 (W361-A), Oahu, HI
Agency :	U.S. Geological Survey
District :	N/R
State :	HI
County :	Honolulu County
Country :	USA
Land Net Location :	N/R
Name of Location Map :	KAHUKU, HI
Scale of Location Map :	24000
Altitude of Gage/Land Surface :	10
Method Altitude Determined :	Interpolated from Digital Elevation Model
Altitude Accuracy :	5
Altitude Datum :	Local Mean Sea Level
Hydrologic Unit :	Oahu
Drainage Basin :	N/R
Topographic Setting :	N/R
Flags for the Type of Data Collected:	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Flags for Instruments at Site :	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Date of First Construction :	1925
Date Site Established or Inventoried:	N/R
Drainage Area :	N/R
Contributing Drainage Area :	N/R
Data Reliability :	Data have been checked by the reporting agency.
Data-Other GW Files :	YYNNNNNN
National Aquifer :	Hawaii volcanic-rock aquifers
Local Aquifer :	N/R
Local Aquifer Type :	N/R
Well Depth :	306
Hole Depth :	N/R
Source of Depth Data :	N/R
Project Number :	N/R
Real-Time Data Flag :	N/R
Peak-Streamflow Data Begin Date :	N/R
Peak-Streamflow Data End Date :	N/R
Peak-Streamflow Data Count :	N/R
Water-Quality Data Begin Date :	N/R
Water-Quality Data End Date :	N/R
Water-Quality Data Count :	N/R
Field Water-Level Measurements Begin Date:	N/R
Field Water-level Measurements End Date:	N/R
Field Water-Level Measurements Count:	N/R
Site-Visit Data Begin Date :	N/R
Site-Visit Data End Date :	N/R
Site-Visit Data Count :	N/R
Latitude :	21.664167
Longitude :	-157.9475
Last Date in Agency List :	2022-11-11

Map Id: D13
 Direction: W
 Distance: 0.832 mi., 4394 ft.
 Elevation: 17 ft.
 Relative: Lower

Site Name : 3-4057-007 | 3-4057-010
 21.664444, -157.947778
 HI
Database(s) : [WELLS - HI]

Envirosite ID: 47925209
EPA ID: N/R

WELLS - HI

Well Name :	Kahuku P12 Batt
Island :	Oahu
Aquifer Type :	Basal
Year Drilled :	N/R
Owner User :	Malaekahana Hui West, LLC
Land Owner :	Malaekahana Hui West, LLC
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	Pump 12
Driller :	N/R
Quad Map :	7
GPS :	FALSE
UTM :	TRUE
Pump Installer :	N/R
Old Number :	361-A
Casing Diameter :	10
Ground Elevation :	16
Well Depth :	306
Solid Case :	68
Perf Case :	N/R
Use :	AGRCP
INIT Head :	N/R
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	N/R
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	N/R
Test Unit :	N/R
Pump GPM 1 :	1300
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	-290
Bot Solid :	-52
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	1.872
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-6-006:018
Aquifer Code :	30601
Latest HD :	N/R
WCR :	N/R
PIR :	N/R
Surveyor :	N/R
T :	N/R
Last Date in Agency List :	2022-08-05

Map Id: D13
 Direction: W
 Distance: 0.832 mi., 4394 ft.
 Elevation: 17 ft.
 Relative: Lower

Site Name : 3-4057-007 | 3-4057-010
 21.664444, -157.947778
 HI
Database(s) : [WELLS - HI] **(cont.)**

Envirosite ID: 47925209
EPA ID: N/R

WELLS - HI (cont.)

Well Name :	Pump 12A Bat
Island :	Oahu
Aquifer Type :	Basal
Year Drilled :	1937
Owner User :	Hawaii Reserves, Inc.
Land Owner :	Hawaii Reserves, Inc.
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	N/R
Driller :	N/R
Quad Map :	7
GPS :	FALSE
UTM :	TRUE
Pump Installer :	N/R
Old Number :	361-B
Casing Diameter :	12
Ground Elevation :	16
Well Depth :	378
Solid Case :	118
Perf Case :	N/R
Use :	AGRAQ
INIT Head :	N/R
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	N/R
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	N/R
Test Unit :	N/R
Pump GPM 1 :	1250
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	-362
Bot Solid :	-102
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	1.8
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-6-006:006
Aquifer Code :	30601
Latest HD :	N/R
WCR :	1937-01-01
PIR :	N/R
Surveyor :	N/R
T :	N/R
Last Date in Agency List :	2022-08-05

Map Id: 14
 Direction: WSW
 Distance: 0.943 mi., 4978 ft.
 Elevation: 21 ft.
 Relative: Lower

Site Name : 3-3957-007 | 213944157570701
 21.659167, -157.949167
 HI
Database(s) : [NWIS, WELLS - HI]

Envirosite ID: 16646313
EPA ID: N/R

NWIS

Site Identification Number :	213944157570701
Site Type :	Well
Station Name :	3-3957-07 Kahuku P-6 (W362-1), Oahu, HI
Agency :	U.S. Geological Survey
District :	N/R
State :	HI
County :	Honolulu County
Country :	USA
Land Net Location :	N/R
Name of Location Map :	KAHUKU, HI
Scale of Location Map :	24000
Altitude of Gage/Land Surface :	23
Method Altitude Determined :	Interpolated from Digital Elevation Model
Altitude Accuracy :	10
Altitude Datum :	Local Mean Sea Level
Hydrologic Unit :	Oahu
Drainage Basin :	N/R
Topographic Setting :	N/R
Flags for the Type of Data Collected:	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Flags for Instruments at Site :	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Date of First Construction :	1937
Date Site Established or Inventoried:	N/R
Drainage Area :	N/R
Contributing Drainage Area :	N/R
Data Reliability :	Data have been checked by the reporting agency.
Data-Other GW Files :	YYNNNNNN
National Aquifer :	Hawaii volcanic-rock aquifers
Local Aquifer :	N/R
Local Aquifer Type :	N/R
Well Depth :	397
Hole Depth :	397
Source of Depth Data :	O
Project Number :	N/R
Real-Time Data Flag :	N/R
Peak-Streamflow Data Begin Date :	N/R
Peak-Streamflow Data End Date :	N/R
Peak-Streamflow Data Count :	N/R
Water-Quality Data Begin Date :	N/R
Water-Quality Data End Date :	N/R
Water-Quality Data Count :	N/R
Field Water-Level Measurements Begin Date:	N/R
Field Water-level Measurements End Date:	N/R
Field Water-Level Measurements Count:	N/R
Site-Visit Data Begin Date :	N/R
Site-Visit Data End Date :	N/R
Site-Visit Data Count :	N/R
Latitude :	21.659167
Longitude :	-157.949167
Last Date in Agency List :	2022-11-11

WELLS - HI

Well Name :	Kahuku Pump 6
Island :	Oahu
Aquifer Type :	Caprock

Map Id: 14
 Direction: WSW
 Distance: 0.943 mi., 4978 ft.
 Elevation: 21 ft.
 Relative: Lower

Site Name : 3-3957-007 | 213944157570701
 21.659167, -157.949167
 HI
Database(s) : [NWIS, WELLS - HI] **(cont.)**

Envirosite ID: 16646313
EPA ID: N/R

WELLS - HI (cont.)

Year Drilled :	1937
Owner User :	Hawaii Reserves, Inc.
Land Owner :	Hawaii Reserves, Inc.
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	N/R
Driller :	Kahuku Plantation Company
Quad Map :	7
GPS :	FALSE
UTM :	TRUE
Pump Installer :	Beylik / Energetic A JV
Old Number :	326-1
Casing Diameter :	12
Ground Elevation :	29
Well Depth :	397
Solid Case :	104
Perf Case :	N/R
Use :	AGRLI
INIT Head :	N/R
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	N/R
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	22
Test Unit :	C
Pump GPM 1 :	750
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	-368
Bot Solid :	-75
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	1.08
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-6-006:006
Aquifer Code :	30601
Latest HD :	N/R
WCR :	1937-01-01
PIR :	2016-08-22
Surveyor :	N/R
T :	N/R
Last Date in Agency List :	2022-08-05

Map Id: E15
 Direction: SSE
 Distance: 0.954 mi., 5035 ft.
 Elevation: 16 ft.
 Relative: Lower

Site Name : 3-3955-001
 21.649167, -157.930278
 HI
Database(s) : [WELLS - HI]

Envirosite ID: 47926772
EPA ID: N/R

WELLS - HI

Well Name :	Laie
Island :	Oahu
Aquifer Type :	N/R
Year Drilled :	1890
Owner User :	S. Navalta
Land Owner :	Church of Jesus Christ LDS
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	N/R
Driller :	L. McCandless
Quad Map :	7
GPS :	FALSE
UTM :	TRUE
Pump Installer :	N/R
Old Number :	371-
Casing Diameter :	12
Ground Elevation :	7
Well Depth :	N/R
Solid Case :	N/R
Perf Case :	N/R
Use :	ABNLOS
INIT Head :	N/R
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	N/R
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	N/R
Test Unit :	N/R
Pump GPM 1 :	N/R
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	N/R
Bot Solid :	N/R
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	N/R
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-5-004:002
Aquifer Code :	30601
Latest HD :	N/R
WCR :	1890-01-01
PIR :	N/R
Surveyor :	N/R
T :	N/R
Last Date in Agency List :	2022-08-05

Map Id: E17
 Direction: SSE
 Distance: 0.960 mi., 5071 ft.
 Elevation: 17 ft.
 Relative: Lower

Site Name : 21390815755901
 21.649058, -157.9303
 HI
Database(s) : [NWIS] (*cont.*)

Envirosite ID: 16666463
EPA ID: N/R

NWIS (*cont.*)

Data Reliability :	Unchecked data.
Data-Other GW Files :	YYNNNNNN
National Aquifer :	Hawaii volcanic-rock aquifers
Local Aquifer :	N/R
Local Aquifer Type :	N/R
Well Depth :	N/R
Hole Depth :	N/R
Source of Depth Data :	N/R
Project Number :	N/R
Real-Time Data Flag :	N/R
Peak-Streamflow Data Begin Date :	N/R
Peak-Streamflow Data End Date :	N/R
Peak-Streamflow Data Count :	N/R
Water-Quality Data Begin Date :	N/R
Water-Quality Data End Date :	N/R
Water-Quality Data Count :	N/R
Field Water-Level Measurements Begin Date:	N/R
Field Water-level Measurements End Date:	N/R
Field Water-Level Measurements Count:	N/R
Site-Visit Data Begin Date :	N/R
Site-Visit Data End Date :	N/R
Site-Visit Data Count :	N/R
Latitude :	21.649058
Longitude :	-157.9303
Last Date in Agency List :	2022-11-11

Map Id: 18
 Direction: S
 Distance: 0.989 mi., 5223 ft.
 Elevation: 4 ft.
 Relative: Lower

Site Name : 3-3956-004
 21.648056, -157.935
 HI
Database(s) : [WELLS - HI]

Envirosite ID: 47927097
EPA ID: N/R

WELLS - HI

Well Name :	Laie
Island :	Oahu
Aquifer Type :	Basal
Year Drilled :	N/R
Owner User :	S. Kahawai
Land Owner :	Property Reserve, Inc.
Well Type :	N/R
Five Volumn Pump Time :	N/R
Old Name :	N/R
Driller :	N/R
Quad Map :	7
GPS :	FALSE
UTM :	TRUE
Pump Installer :	N/R
Old Number :	366-

Map Id: 18
 Direction: S
 Distance: 0.989 mi., 5223 ft.
 Elevation: 4 ft.
 Relative: Lower

Site Name : 3-3956-004
 21.648056, -157.935
 HI
Database(s) : [WELLS - HI] **(cont.)**

Envirosite ID: 47927097
EPA ID: N/R

WELLS - HI (cont.)

Casing Diameter :	10
Ground Elevation :	9
Well Depth :	340
Solid Case :	N/R
Perf Case :	N/R
Use :	ABNLOS
INIT Head :	13.1
INIT Head 2 :	N/R
INIT Head 3 :	N/R
INIT CL :	54
Test Date :	N/R
Test GPM :	N/R
Test Ddown :	N/R
Test Chlor :	N/R
Test Temp :	22.5
Test Unit :	C
Pump GPM 1 :	N/R
Graft MGY :	N/R
Head Feet :	N/R
Max Chlor :	N/R
Min Chlor :	N/R
Geology :	TKB
Pump Year :	N/R
Draft Year :	N/R
Bot Hole :	-331
Bot Solid :	N/R
Bot Perf :	N/R
Spec Capacity :	N/R
Pump MGD :	N/R
Draft MGD :	N/R
Pump Elevation :	N/R
Pump Depth :	N/R
TMK :	(1) 5-5-008:051
Aquifer Code :	30601
Latest HD :	N/R
WCR :	N/R
PIR :	N/R
Surveyor :	N/R
T :	N/R
Last Date in Agency List :	2022-08-05

RADON DATA:

STATE SOURCE: No Available Data

FEDERAL AREA RADON INFORMATION FOR: 96731

NUMBER OF SAMPLE SITES: No Available Data

FEDERAL EPA RADON ZONE FOR HONOLULU COUNTY: Zone = 3

Note: Zone 1 indoor average level > 4 pCi/L

: Zone 2 indoor average level > = 2 pCi/L and <= 4 pCi/L

: Zone 3 indoor average < 2 pCi/L

HIST PWS ENF

Historical Public Water Supply locations with Enforcement Violations

Environmental Protection Agency

(800) 426-4791

List of Safe Drinking Water Information Systems (SDWIS) with enforcement violations that are no longer in current agency list.

NWIS

National Water Information Systems

United States Geological Society

(703) 648-5953

Information on all water resources for the United States. This database contains all current and historical data for the nation.

PWS

Public Water Supply

Environmental Protection Agency

(800) 426-4791

Safe drinking water information Systems

PWS ENF

Public Water Supply locations with Enforcement Violations

Environmental Protection Agency

(800) 426-4791

Safe drinking water information Systems with enforcement violations

WELLS - HI

Water Well Locations

Department of Land and Natural Resources

Water Well Locations

FLOOD Q3

Flood data

Environmental Protection Agency

(202) 566-1667

Q3 Flood Data

HYDROLOGIC UNIT

Hydrologic Unit Maps

USGS

The United States Geological Survey created a hierarchical system of hydrologic units originally called regions, sub-regions, accounting units, and cataloging units. Each unit was assigned a unique Hydrologic Unit Code (HUC). As first implemented the system had 21 regions, 221 subregions, 378 accounting units, and 2,264 cataloging units. Over time the system was changed and expanded. As of 2010 there are six levels in the hierarchy, represented by hydrologic unit codes from 2 to 12 digits long, called regions, subregions, basins, subbasins, watersheds, and subwatersheds. The table below describes the system's hydrologic unit levels and their characteristics, along with example names and codes.

WETLANDS NWI

National Wetland Inventory

U.S. Fish and Wildlife Service

(703) 358-2171

Wetland Inventory for the United States

SSURGO

Detailed Soil Data Map

Natural Resources Conservation Service: U.S. Department of Agriculture
(202) 690-4985

Detailed Soil Data Map

STATSGO & MUI

General Soil Data Map

Natural Resources Conservation Service: U.S. Department of Agriculture
(202) 690-4985

General Soil Data Map

USGS GEOLOGIC AGE

USGS Digital Data Series DDS

Natural Resources Conservation Service: U.S. Department of Agriculture
(202) 690-4985

USGS Digital Data Series DDS: Geologic Age and Rock Stratigraphic Unit

RADON

National Radon Database

U.S. Environmental Protection Agency

215-814-2469

A study of the EPA/State Residential Radon Survey and the National Residential Radon Survey.

RADON EPA

RADON EPA

U.S. Environmental Protection Agency

215-814-2469

EPA list of Radon zones

AIRPORT FACILITIES

Airport landing facilities

Federal Aviation Administration

(866) 835-5322

Airport landing facilities

BASINS

Better Assessment Science Integrating point & Non-point Sources

U.S. Environmental Protection Agency

855-246-3642

Integrated geographical information system national watershed data and environmental assessment known as Better Assessment Science Integrating point & Non-point Sources

DIGITAL OBSTACLE

Obstacles of interest to aviation users

Federal Aviation Administration

855-379-6518

The Digital Obstacle File describes all known obstacles of interest to aviation users in the U.S. with limited coverage of the Pacific the Caribbean Canada and Mexico. The obstacles are assigned unique numerical identifiers; accuracy codes and listed in order of ascending latitude within each state or area by FAA Region.

EPICENTERS

National Geographical Data Center

National Geographical Data Center

303-497-6826

List of recent and historic earthquakes and information.

FLOOD DFIRM

National Flood Hazard Layer Database

Federal Emergency Management Agency

The National Flood Hazard Layer Database (NFHL) is a computer database that contains the flood hazard map information from FEMA's Flood Map Modernization program. These map data are from Digital Flood Insurance Rate Map (DFIRM) databases and Letters of Map Revision.

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Guest Structures

ESA - APPENDIX E

AERIAL HISTORICAL IMAGERY



Site boundaries shown in red are approximate

Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



2017

HIG Project # 2072002

Client Project #

Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



2011

HIG Project # 2072002

Client Project #

Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



2008

HIG Project # 2072002

Client Project #

Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



2005

HIG Project # 2072002

Client Project #

Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



2001

HIG Project # 2072002

Client Project #

Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



1998

HIG Project # 2072002

Client Project #

Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



1985

HIG Project # 2072002

Client Project #

Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



1977

HIG Project # 2072002

Client Project #

Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Sea Turtle Estates LLC
56-157 Kamehameha Highway
Kakuku, HI



1962

HIG Project # 2072002

Client Project #

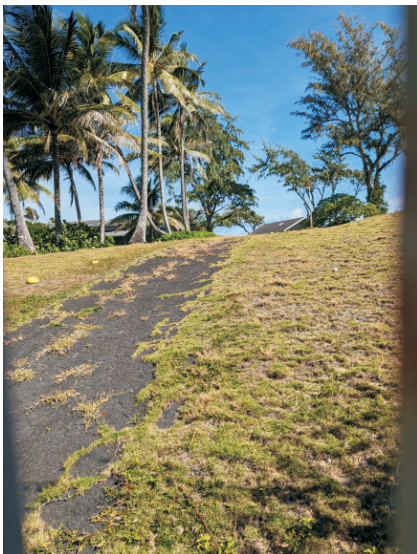
Approximate Scale 1: 6,000 (1"=500')

www.historicalinfo.com





Zucco Property Site Photos





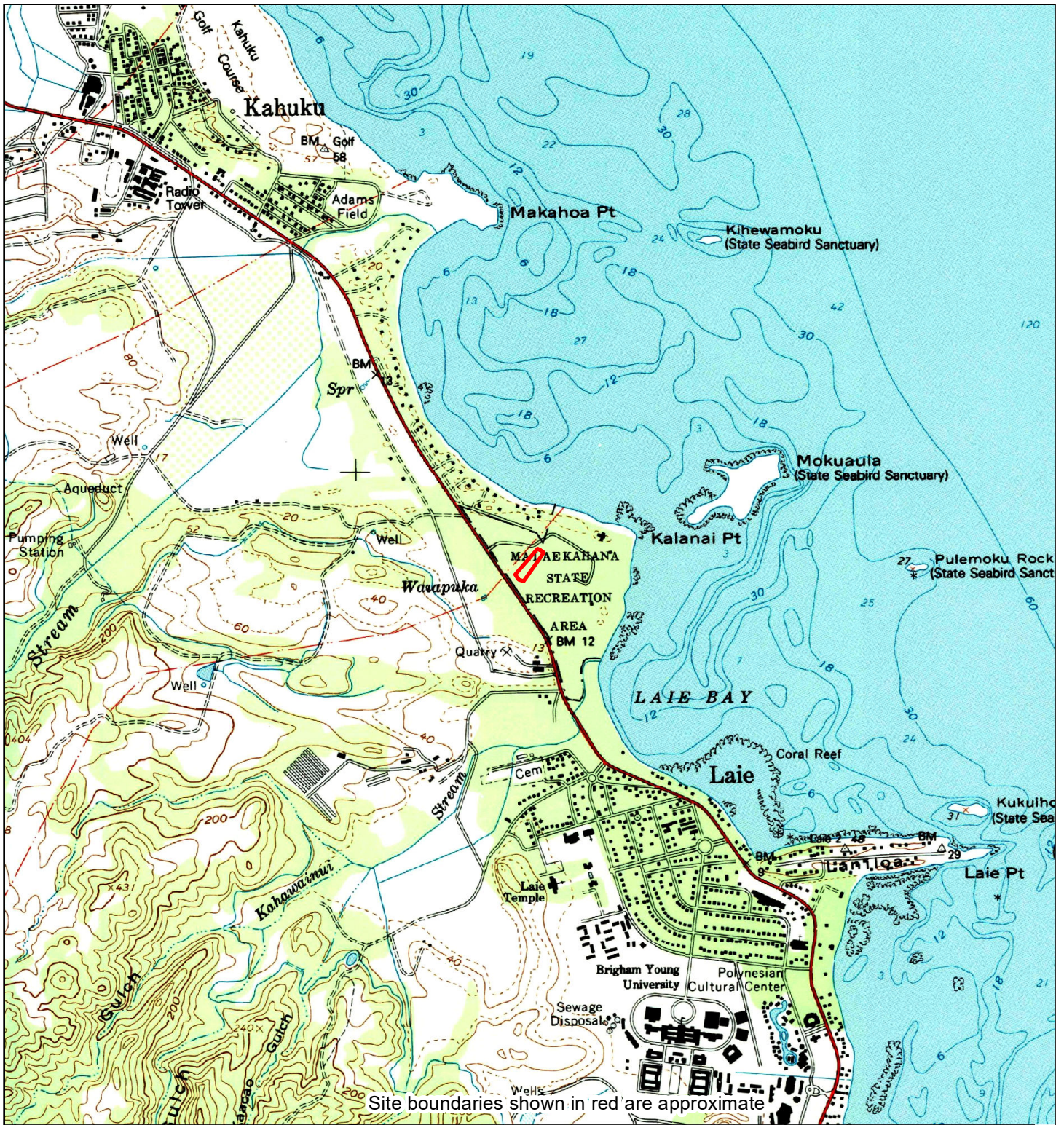
<h1>2017</h1>	0 Distance in Miles 1	Site information: Sea Turtle Estates LLC 56-157 Kamehameha Highway Kakuu, HI 96731		
	1: 24,000 (1"=2,000') NAD 1983 UTM Zone 4N			
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.		WHALE Environmental Services LLC HIG #2072002 completed: 01/27/2023		
Zone All	Topographic Map Name Kahuku, HI	Publisher USGS	Map Size Base Map 7½' x 7½' 2017	Aerial Photo Topo Updates Photo Year Inspected Revised -- -- --



<h1>2013</h1>	0 Distance in Miles 1	Site information: Sea Turtle Estates LLC 56-157 Kamehameha Highway Kakuku, HI 96731	
	1: 24,000 (1"=2,000') NAD 1983 UTM Zone 4N		
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.		WHALE Environmental Services LLC HIG #2072002 completed: 01/27/2023	
Zone All	Topographic Map Name Kahuku, HI	Publisher USGS	Map Size Base Map 7½' x 7½' 2013
Aerial Photo Topo Updates Photo Year Inspected Revised -- -- --			



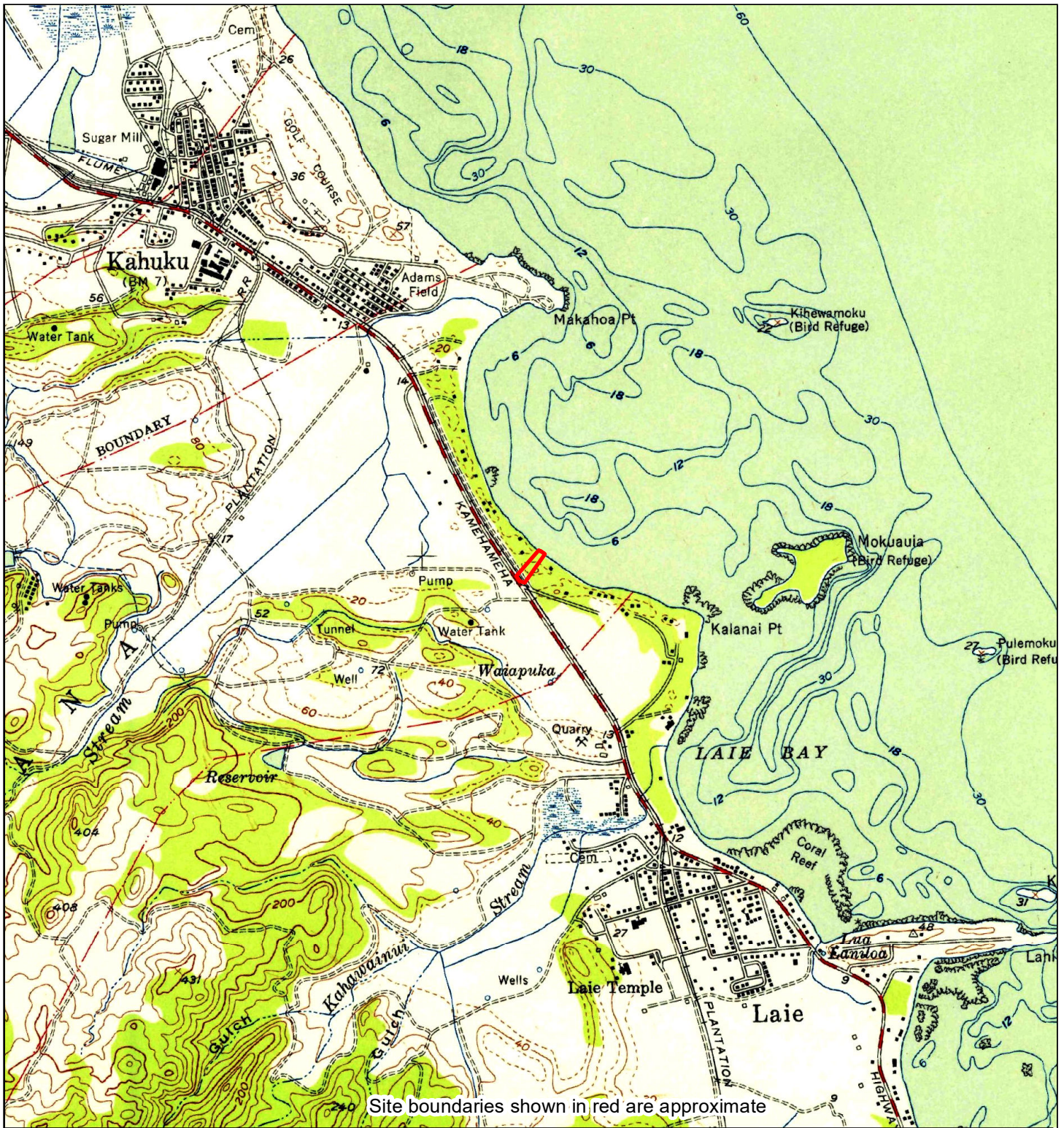
<h1>1998</h1>	<p>Distance in Miles 1 0 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 4N</p>	<p>Site information: Sea Turtle Estates LLC 56-157 Kamehameha Highway Kakuku, HI 96731</p>				
		<p>Unified maps show subdued modern topo features where corresponding maps of the same year were not published.</p>		<p>WHALE Environmental Services LLC HIG #2072002 completed: 01/27/2023</p>		
<p>Zone All</p>	<p>Topographic Map Name Kahuku, HI</p>	<p>Publisher Mil0;USGS</p>	<p>Map Size 7½' x 7½'</p>	<p>Base Map 1998</p>	<p>Aerial Photo Topo Updates Photo Year Inspected Revised 1998 -- --</p>	



1983	0 Distance in Miles 1	Site information: Sea Turtle Estates LLC 56-157 Kamehameha Highway Kakuku, HI 96731						
	1: 24,000 (1"=2,000') NAD 1983 UTM Zone 4N							
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.		WHALE Environmental Services LLC HIG #2072002 completed: 01/27/2023						
Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates	Photo Year	Inspected	Revised
All	Kahuku, HI	USGS	7½' x 7½'	1983	1977	--	--	--

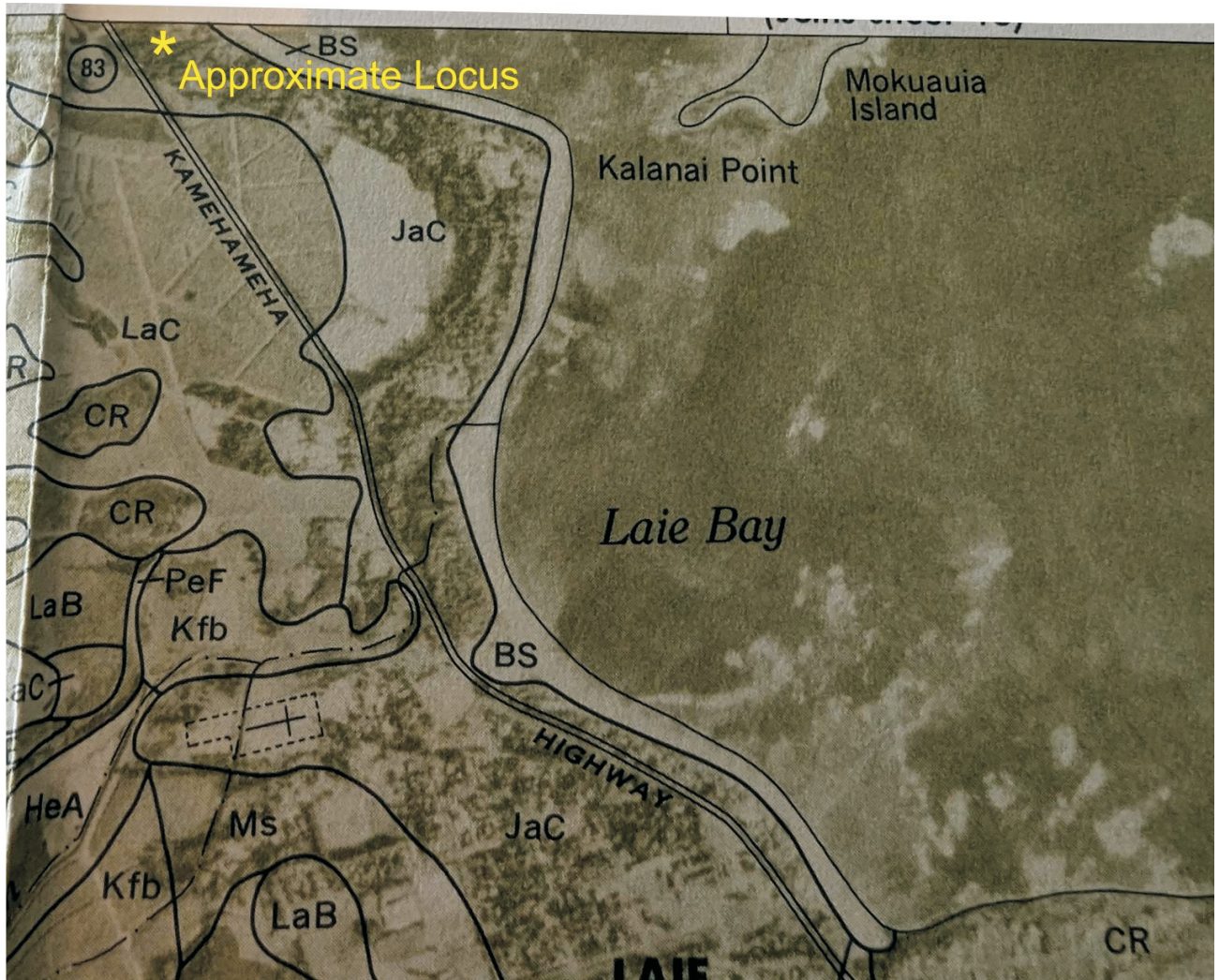


<h1>1965</h1>	0 Distance in Miles 1 	Site information: Sea Turtle Estates LLC 56-157 Kamehameha Highway Kakuku, HI 96731					
	1: 24,000 (1"=2,000') NAD 1983 UTM Zone 4N	WHALE Environmental Services LLC HIG #2072002 completed: 01/27/2023					
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.		Aerial Photo Topo Updates					
Zone All	Topographic Map Name Kahuku, HI	Publisher USGS	Map Size 7½' x 7½'	Base Map 1965	Photo Year 1951	Inspected --	Revised --



<h1>1954</h1>		Site information: Sea Turtle Estates LLC 56-157 Kamehameha Highway Kakuku, HI 96731				
		Unified maps show subdued modern topo features where corresponding maps of the same year were not published.		WHALE Environmental Services LLC HIG #2072002 completed: 01/27/2023		
Zone All	Topographic Map Name Kahuku, HI	Publisher USGS	Map Size 7½' x 7½'	Base Map 1954	Aerial Photo Topo Updates Photo Year Inspected Revised 1951 -- --	

Zucco Property - NRCS Soils Map



References

U.S. Environmental Protection Agency: Rules for All Appropriate Inquiries

U.S. F&W National Wetlands Inventory: <https://www.fws.gov/wetlands/>

Historical Information Gatherers: www.historicalinfo.com

National Center for Environmental Health: <https://www.cdc.gov/nceh/data.htm>

Flood Hazard Assessment Tool: <http://gis.hawaiiinfip.org/FHAT/>

ArcMap GIS Oahu:

<https://www.arcgis.com/home/webmap/viewer.html?webmap=402854e56d044454a35c4a458d09bd78>

Drone Mapping Guidance: <https://www.digmap.com/> & <https://www.dronezon.com/learn-about-drones-quadcopters/multispectral-sensor-drones-in-farming-yield-big-benefits/>

Hydrology: https://waterdata.usgs.gov/nwis/inventory/?site_no=16200000&agency_cd=USGS

Soils: <https://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=HI>

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

ESA - APPENDIX H

PRINCIPAL INVESTIGATOR RESUME

WHALE Environmental Services LLC declares that, to the best of their professional knowledge and belief, that our firm's personnel meet the definition of Environmental Professional(s) as defined in §312.10 of this part.

“WHALE Environmental Services LLC's personnel in the capacity of Chief Biologist, Mark Howland, have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. Mr. Howland has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.”

Mr. Howland's resume is attached as part of this submission. Mr. Howland is also teaches a course in writing Environmental Impact Assessments – (ESA, EA, EIS) at HPU under course number ENVS 3010.

Mark Howland
Principal Program Manager
PO Box 455
Kahuku HI 96731
808-294-9254
markahowland@hawaii.rr.com

Education

- ✓ B.S. Biology – Southeastern Massachusetts University (now UMASS Dartmouth)
- ✓ M.S. Public Affairs with concentration in Environmental Policy – UMASS Boston

Highlights/Certifications/Professional Training

- ✓ Certified Project Manager,
- ✓ Natural Resource Management and Land Rehabilitation;
- ✓ NEPA Specialist and Pollution Investigator under 21E, Phase Levels 1-3;
- ✓ Wetlands and Wildlife Biologist; EA, EIR, and EIS development;
- ✓ BioMimicry Designer;
- ✓ Erosion Control Professional,
- ✓ Stormwater Mitigation Expert;
- ✓ Aquaculture and Hydroponics Specialist,
- ✓ Senior Principal Engineer- Environment, Senior Program Manager/Group Leader;
- ✓ CEO, COO and Principal Office Manager.
- ✓ Honolulu Authority for Rapid Transportation (HART) Voting Board Member

Awards/Recognition

- ✓ Winner of EPA Environmental Technology Innovator Award for erosion control product development in 1999
- ✓ Winner of EPA Environmental Technology Innovator Award for stormwater mitigation design in 1998.
- ✓ EPA Environmental Merit Award in 2000.
- ✓ Business Development Leader selected by State and Federal Government for Trade Missions to France, England, Northern Ireland, Ireland, Germany, Japan, China and Australia to represent the environmental industry.
- ✓ ACECH Design Award 2012 for pollution mitigation design.

Years of Experience

40+

Security Clearance

LEVEL: Confidential, DoD CAD card issued for Army/Air Force work

Professional Summary

Technical, Management and Cooperative Abilities and Skills

Staff Management, Contracts and Budgets

Office management, executive policies, budgetary planning and processing, grant and contract development, employee hiring and staff supervision. Familiarity with Army, Marine, and Air Force contracting. Responsibilities include performance management of staff of 14, development of materials, documents, briefs and handouts, as well as equipment, and budgets. Past budgetary responsibility with levels in excess of \$22 million. Have managed staffs as large as 33 employees, and projects with \$25-\$100 million budgets. Public Policy experience (State Representative) in the Legislature (\$30 billion budget) and Municipal (Selectman) levels (\$18 million budget). Chair of the Board of

Mark Howland
Principal Program Manager
57-101 Kuilima Drive #23W
Kahuku HI 96731
808-294-9254
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Selectmen, Chair of Municipal Board of Health, Chair of Soil Conservation Zoning Board, Municipal Personnel Committee member, Police Commissioner. Chair Conservation Commission (2 communities), Conservation Agent (4 communities). Program Management with both immediate staff supervision and with remote located technical teams/individuals for assembling projects for client fulfillment. Interactive environmental contract experience with the military (Army, Air Force, Marines) and decades of experience in the environmental field.

NEPA Experience

NEPA documentation, permit application and investigative studies with preparation and review. Federal work with the USDA/NRCS, DoD/Army, Air Force, Army OEA, ACOE, EPA and other federal agencies. State Agencies work in the Northeast U.S., Florida and Hawai'i such as here in Hawai'i with the HDOT, HDOH CWB, HDOH HEER, DOFAW, DBEDT, HDOA, DNLR, CZM, and DAR. Private NEPA work for utility companies such as L3 Communications, MFS Network Technologies, Verizon, ComElectric and others. Local work with C&C of Honolulu agencies such as Mayor's Office, OED, HART, DPP, ENV. Comparable experience with counterpart agencies in states from Maryland to Maine (Northeast corridor) and Florida (Disney). Environmental Compliance (Qa/Qc) for base operations with the Army and Air Force.

Instructional Experience

- ✓ Lecturer, Cape Cod Community College – aquaculture
- ✓ Lecturer, UMASS Dartmouth – aquaculture and hydroponics, environmental policy
- ✓ Lecturer – Wellesley College – environmental policy
- ✓ Past President, Intl. Erosion Control Assoc. – seminar in erosion control and stormwater management
- ✓ Adjunct Professor, HPU – Environmental Impact Assessments Course – ESA, EA, EIS

Natural Resource Management

Natural resource management, wetland delineations, wildlife habitat studies, wildlife hazard assessments (WHA), environmental impact statements, environmental assessments, environmental baseline studies, coastal studies, wetland replication and restoration services, wetland species nursery management, wetland and wildlife protection products, experience in land rehabilitation practices, wildlife biology, botany, forestry and other types of applied ecology. All work environments from tropics to alpine. Ability to work in rough terrain under extreme weather conditions. Project count over the last four decades in this field in excess of 28,000 studies conducted by self or under my direction as owner of firm(s).

Communications and Public Relations

Ability to make public presentations on technical issues and policy directives. As a Selectman and State Representative, attended, conducted, organized and presented public hearings, seminars, organizational forums and Q & A sessions. As a Manager, Business Owner and Corporate Group Leader, responsibility was for client interactions, client presentations, public presentations, community outreach and technical presentations. Interaction with community groups, federal, state and local agencies, DoD decision makers, State and Federal legislative bodies and committees. Example is the presentation of a Lesson Learned PowerPoint demonstration to the North Shore Neighborhood Board on behalf of the U.S. Army U.S. Garrison Hawai'i on advances in stormwater and erosion control methods used during Army land rehabilitation efforts.

Hazardous Materials Coordination

Spill prevention plans, along with pollution prevention studies, and hazardous materials and waste mitigation.

Mark Howland
Principal Program Manager
57-101 Kuilima Drive #23W
Kahuku HI 96731
808-294-9254
markahowland@hawaii.rr.com

Environmental Site Assessments, 21Es, Phase I and Phase II hazardous materials studies and worked on projects where environmental remediation activities were conducted serving as the site overseer and controlling the hazardous materials testing regime. Experienced in characterizing soil, air and water HazMat incidents.

Stormwater Mitigation and Erosion Control

Drainage calculations, erosion control designs and products, stormwater mitigation designs and products, slope and bank stabilization designs and products, Stormwater Mitigation Plans, Storm Water Pollution Prevention Plans (SWPPP), erosion control monitoring plans, mitigation monitoring plans (MMP), Best Management Practices (BMP) plans.

Sustainability

Environmental audits, energy audits and lighting inventories, lumen analysis, sustainability studies, baseline environmental management systems, identify and research sustainability initiatives as related to energy, water, waste, design, sourcing, decision-making and marketing/education. Prioritized implementation of sustainability projects to maximize cost savings and green marketing promotion. Developed LEED grant applications to support sustainability initiatives.

Renewable Energy – Wind, Solar, Biomass and innovations

Experience in renewable energy source selection of wind, solar or biomass based on need, client preference and siting. Familiar with large wind and small wind systems as well as solar thermal and solar photovoltaic. Environmental permitting, environmental impacts and regulatory compliance. Work with energy balancing systems such as harmonic filters, sensors, timers, etc...Fatal Flaw or Critical Issues Analysis and siting reviews. Onshore and Offshore experience. Public involvement and baseline studies for wildlife issues, habitat mapping, modeling, visual impact analysis and mitigation and monitoring plans.

Permitting

Prepared applications and support documentation for all environmental permits such as shoreline setback variances, noise permits, special management area permits, CZM and floodplain permits, 404/401 permits, MS4 approvals, NPDES applications, Notice of Intents, Records of Environmental Consideration, Requests for Determinations, EA, EIR and EIS etc...

Horticulture and Crop Technology

Experience with a variety of crop technologies. Expertise in aquaculture, hydroponics and traditional greenhouse operations. Grew up in traditional greenhouse operations business with a wide variety of plant and shrub species such as geraniums, poinsettias, chrysanthemums, annuals, perennials, herbs and more. Owner and Operator of New England's largest wetland plant nursery with over 400 species cultivated from seed or cuttings. Owner and Operator of aquaculture operations for trout and prawn species. Owner and operator of hydroponics facilities often integrated with aquaculture operations in an aquaponics setting with species such as strawberries, mache lettuce, haricot vert green beans, oyster mushrooms and over 500 other cultivars. Experienced with Green Roof Technology, diverse growing systems, water management and a host of other operational parameters of growing systems.

Biomimicry Design

Biomimicry principles offer "fresh architectural solutions" for landscapes such as coastal areas susceptible to flooding. Biomimicry is using designs that draw inspiration from the intricate ways that plants and animals have adapted to their situations over hundreds of millions of years. Award-winning eco-designs expertise using Biomimicry principles. Award winning designer of BioFence™ – the biodegradable siltation fence and the

Mark Howland
Principal Program Manager
57-101 Kuilima Drive #23W
Kahuku HI 96731
808-294-9254
markahowland@hawaii.rr.com

Howland Swale™ – the EPA award winning stormwater mitigation design presented by VP Al Gore. Hawaii's 2013 ACECH award for pollution mitigation design in Hawaii for dry dock copper and zinc discharges mitigation at the Campbell Industrial Park.

Geographical Information Systems

Experience with geographical information systems such as ESRI/ArcMap, GPS usage of (GIS) and GPS (Trimble) equipment. Have a working knowledge and experience with a variety of computer software and technologies, including GIS software. Developed skills in data collection, use of geographical position systems (GPS), and database development.

Marine Environment Experience

Experience with coastal environs such as dock and pier studies, shellfish inventories, beach erosion mitigation designs. Associate member of New England Fisheries Development Council and Aquaculture Coordinator and Public Outreach Coordinator for the New England Fisheries Steering Committee. Worked with many fisheries trade groups, fishermen organizations, fish processors, vessel operators, Coast Guard, NMFS, NOAA and state agencies. Sample project was an EIS for the undersea fiber optic cable from Green Hill Beach in Rhode Island to London for habitat impact, current impact, vessel interference, maintenance issues and more...

Aquaculture and Hydroponic Experience

Operator and Manager of Aquaculture and Hydroponics operations. Experience with the culture of over 400 species including but not limited to trout, prawns, oysters, mussels, haricot vert, mache lettuce, strawberries, etc... all with integrated aquaponic systems.

Greenscaping and BioEngineering

Experience with environmental appraisal and design enhancement of land and properties. Designed environmental improvements for water management, land maintenance, aesthetics appeal and environmental correctness. Work on resort properties such as hotels and golf courses to design green roofs, songbird gardens, stormwater gardens, porous pavements, wildlife buffer and research zones and greenscaping maintenance alternatives to grass. Considered one of the nation's top experts in stormwater bioengineering designs for pollution mitigation at residential, commercial and governmental facilities. Complete project management from visionary design to concept development to implementation to post-construction review. Cost appraisal of both implementation costs and value-added bioengineering's present and future values. Sample project was as the lead design consultant for WED Enterprises (Disney) for "The Land" exhibit at EPCOT Center, Florida and environmental assessment consultant for Disney Imagineering in Tokyo Disney, Japan; EuroDisney, France and future hotel/resort sites in Kauai and South Carolina.

Policy

Ability to work with diverse issues that may not fall under established practices or guidelines. Ability to resolve complex issues by working with stakeholder organizations and to find creative solutions to land use requirements with environmental compliance and conservation goals. Written and oral communication skills. Have the ability to work independently with limited supervision. Board of Health Chairman, Soil and Land Conservation Zoning Board Chairman, Police Commissioner. Personnel Board member.

Present Experience

Present – COO/Chief Biologist, WHALE Environmental Services, LLC, North Shore, Oahu 2009-present

Mark Howland
Principal Program Manager
57-101 Kuilima Drive #23W
Kahuku HI 96731
808-294-9254
markahowland@hawaii.rr.com

Professional Duties - wetland and wildlife expert, aquatic design, environmental and energy audits and inventories, land rehabilitation specialist, erosion control and stormwater mitigation specialist and environmental design and planning.

Current and past 2014-2021 project(s): Environmental Audit for Turtle Bay Resort; Environmental Coordination Services for Environmental Management System implementation at Turtle Bay Resort. Energy Audit and Implementation; EIS for Biomass facility siting; Energy Audits for HECO DR program; and private firm energy audits. DLNR West Maui Coral Reef Resiliency Study. Named Conservation Champion of Turtle Bay Resort in May 2014. Waimea Valley Environmental and Energy Coordination Services. DOFAW Phase I Keana Point, NELHA DBEDT Biota and Benthic Study, HDOA/ABC Phase I 77 acres Dole Foods; OHA Energy Consultant; Leidos Contract for NEPA Office Development; C&C of Honolulu DoD Project Coordinator for Community Interaction, HDOT – A Wildlife Hazard Assessment, Kalaeloa Airport, DOFAW – Waihee Ridge Trail EA, Turtle Bay Forest/Landscape Management and Safety Plan; HDOA/ABC Phase I 287 acres Dole Foods, HDOA/ABC Phase I 900 acres Dole Foods, HDOA/ADC Phase I 89 acres UH Hawaii, HDLNR/F&W Phase I 800 acres Molokai; DOFAW Wood Utilization Analysis, DOFAW – Forest Products Price Analysis; DOFAW – EA Lower Waiohuli Trails, Coca Cola Mapunapuna – NPDES work and Water Source Viability Study, Daniel K. Inouye Intl. Airport Stormwater Monitoring.

Selected Previous Experience

Hawaii Business Development and Program Manager, URS 2013-2014

Professional Duties – Responsible for URS Business Development interests in Federal Interactions. Dual role serving as Project Manager and Program Manager for URS awarded contracts. Client interaction, technical expertise and subject matter expert for various projects and project team review and supervision. Key services provided to DoD clients such as Navy, Army, Marines and Air Force; and federal agencies such as USFW, NRCS, EPA, FAA, NOAA and NMFS.

Division Manager for Environmental & Planning Services, URS, Honolulu Hawaii. 2012-2013

Professional Duties–Principal-in-Charge to manage the URS Honolulu Office staff in the Environmental & Planning Services division. Responsibility to manage federal, state, local and private projects. Develop and implements strategic marketing plans with proposal preparation and presentation to the government, industrial and private market sectors. Significant HEPA and NEPA interactions along with state and federal agency regulatory compliance. Environmental and Planning Division leadership for project teams conducting environmental compliance, site assessment & remediation, GIS support services, environmental sciences, sustainability, planning and military solutions. Supervise team leaders, responsible for the day-to-day operations of the group comprised of project managers, technical specialists and junior level planners. Responsible for hiring, staff utilization, group sales goals, mentoring, financial control, quality assurance and business development and marketing.

Permits Coordinator, Honolulu Authority for Rapid Transportation (HART), Honolulu, Oahu – Honolulu Rail Transit Project 2011-2012

Professional Duties – Coordinated the Permits Program at HART, responsible for oversight of all 12,000+ permits for the Oahu Rail Project including but not limited to environmental permits such as

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Principal Program Manager
57-101 Kuilima Drive #23W
Kahuku HI 96731
808-294-9254
markahowland@hawaii.rr.com

shoreline setback variances, noise permits, special management area permits, CZM and floodplain permits, 404/401 permits, MS4 approvals, NPDES applications, etc... Also responsible for general construction permitting along with coordination with contractor resident engineers, regulatory agencies on City and County, State and Federal levels and other affected parties. Familiar with Oracle's Primavera P6 Enterprise Project Portfolio Management and scheduling and CMS Contracts Management System. HART HazMat liaison and auditor for Phase I, Phase II and Hazardous Materials (HazMat) studies and submittals.

Selected Previous Projects

Program Manager, NEPA Specialist WHALE Environmental Services LLC

Project Name: Technical Assistance to Air Force Natural Resources Program

Company work was performed for: U.S. Air Force/TEAM Integrated Engineering, LLC

Hickam Air Force Base, Oahu

August 2009 – August 2010

Professional Duties - Managed TEAM IE's Global Engineering, Integration and Technical Assistance (GEITA) contract. Provided and supervised NEPA and NHPA personnel at the Air Force's Natural Resources Program at Hickam Air Force Base. Support, assist, and facilitate implementation of regulatory environmental programs. Provided expertise in the preparation of environmental baseline studies, environmental audit of joint basing requirements, environmental permits, and coordination with historical and architectural needs. Coordinate and monitor NEPA efforts. Ensure Air Force interests are represented and composed of the following: real estate site review and planning, and interaction with consultants, and federal and government civil servants of US Air Force agencies and others. Wrote Environmental Baseline Studies and Joint Base Pearl Harbor/Hickam Environmental Base Closure Plan under an AFCEE \$230,000 contract.

Selected Previous Projects

Senior Principal Engineer - Environment, ITAM Coordinator, Directorate of Planning, Training, Mobilization, and Security (DPTMS) U.S. Army, Schofield Barracks

Company work was performed for: General Dynamics Informational Technology at *Schofield Barracks, Kahuku Training Area, South Range, East Range, Kunia Training Area, Makua Training Area, Dillingham Air Field, Pohakuloa Training Area. Coordination with Marine Training Programs at Camp Smith and Kaneohe Base.*

August 2008-August 2010

Professional Duties - Managed the U.S. Army's Hawaii Garrison's Integrated Training Areas Management (ITAM) program, coordinated, executed, and assisted in all ITAM program components, including Land Rehabilitation and Management (LRAM), Range and Training Land Assessment (RTLTA), Training Requirements Integration (TRI), Sustainable Range Awareness (SRA), and Geographic Information Systems (GIS). Direct, support, assist and facilitate implementation of regulatory environmental programs. Provided expertise in the preparation of scopes of work for land inventory and monitoring, land rehabilitation projects and management, environmental awards, and training/environmental integration requirements. Prepared Independent Government Cost Estimates (IGCEs), Statements of Work (SOWs) and Requests for Statement of Qualifications (SOQs). Selected firms for contracts based on submissions. Coordinate and monitor NEPA efforts that affect the Directorate of Planning, Training, Mobilization and Security (DPTMS) and other military agencies in the region. Ensure DPTMS interests are represented and composed of the following: 5 year Master

Mark Howland
Principal Program Manager
57-101 Kuilima Drive #23W
Kahuku HI 96731
808-294-9254
markahowland@hawaii.rr.com

Planning Cycles, real estate site review and planning, and interaction with DPW Facilities, USAGHI, Kaneohe Marine Base Hawaii, consultants, and federal and government civil servants of US Army agencies and others. Coordinate mitigation and workarounds between users (DPTMS) and federal agencies such as EPA, NRCS, and ACOE. Coordinated permitting activities with State of Hawaii DOH. Conduct basic environmental assessments, environmental impact statements, records of environmental consideration, review permit approvals, and file notice of intents. Provided information to support installation command decisions. Worked with military training schedules to help insure that training lands are available in sufficient quality and land status to successfully accomplish the requested training. Experience in land management of over 153,000 acres of US Hawaii Army training lands on Oahu and the Big Island. Reviewed NEPA documents, assists in project scoping efforts, updates program management modules and provides expertise and assistance to the DPTMS Range Division Office staff. Coordinates with the USAGHI Installation environmental staff to assist the Installation land managers in making informed land management decisions and coordinating military land use requirements. Sought new funding sources for Army land restoration projects. Succeeded in acquiring \$22 million for new projects.

Selected Previous Projects

Land Rehabilitation and Maintenance Coordinator (LRAM), Directorate of Planning, Training, Mobilization, and Security (DPTMS) U.S. Army, Schofield Barracks Company work was performed for: Colorado State University's Center for Environmental Management of Military Lands (CEMML) at *Schofield Barracks, Kahuku Training Area, South Range, East Range, Kunia Training Area, Makua Training Area, Dillingham Air Field, Coordination with Marine Training Programs at Kahuku Training Area for Marines from Kaneohe Base.* August 2007-August 2008

Professional Duties - Support, assist, and facilitate implementation of regulatory environmental programs. Provided expertise in the preparation of scopes of work for land rehabilitation projects and management, and training/environmental integration requirements. Coordinate and monitor NEPA efforts that affect DPTMS and other military agencies in the region. Ensure DPTMS interests are represented with interaction with DPW Facilities, USAGHI, Kaneohe Marine Base Hawaii, consultants, and federal and government civil servants of US Army agencies and others. Coordinated permitting activities with State of Hawaii DOH and Section 106 consultations. Conduct basic environmental assessments, environmental impact statements, records of environmental consideration, review permit approvals, and file notice of intents. Provided information to support installation command decisions. Worked with military training schedules to help insure that training lands are available in sufficient quality and land status to successfully accomplish the requested training. Reviewed NEPA documents, assists in project scoping efforts, updates program management modules and provides expertise and assistance to the DPTMS Range Division Office staff.

Other Sample Projects

Program Manager, Chief Biologist, Environmental Research Corps

Company work was performed for: Kiewit Pacific

Drum Road, Kawailoa, Oahu

January 2008-April 2010

Environmental Consultant responsible for the preparation of General Best Management Plan (BMP) plan for \$39 million

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Principal Program Manager
57-101 Kuilima Drive #23W
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808-294-9254
markahowland@hawaii.rr.com

dollar Army Corps of Engineers Drum Road construction project. Duties included field investigations of site-specific BMP needs for erosion control needs, design, stormwater mitigation needs as exhibited by the development of a Storm Water Pollution Prevention Plan (SWPPP), and NEPA permit narratives. Also responsible for QA/QC for BMP implementation by Kiewit Pacific.

Other Sample Projects

Owner/Operator, BioMass Farms

Company work was performed for: P A Landers

Wetland Replication - Carver Massachusetts

Project: October 2002 - November 2004

Cultivated, transplanted and matured over 400 wetland species for use in a ten acre wetland restoration project. Worked at establishing multi-functional wetlands with all three plant layers – herbaceous, shrub and tree as well as establish correct hydrology and soil regimes. Species induced obligates, facultative wet and facultative species as well as upland species of trees and plants for buffer and wildlife enhancement. Installation of erosion control measures such as BioFence – biodegradable siltation fencing, and Curlex – slope stabilization erosion blankets. Soil enhancements such as mycorizae fungi, moisture retention agents, organic fertilizers, pest deterrents were employed.

Other Sample Projects

Owner/Operator, Environmental Research Corps

Company work was performed for: IONICS

Saline Marine Environment Mitigation, Bermuda

Project: October 1999 - January 2000

Design/Construct of a saline mitigation structure for a desalinization plant in Bermuda. IONICS processed seawater to create fresh water for drinking purposes resulted in a waste flow of byproduct of extreme salinized waters. With the use of salt-loving species with large bio-uptakes such as rosemary, successfully reduced high salt levels in discarded desalinization waters back to natural seawater levels. Also completed the EIS for that discharge and the placement and permitting of an under-lagoon fiber optic cable to tie control of the system to the main desalinization plants EMS.

Other Sample Projects

Owner/Operator, New England AquaFarms, Inc.

Company work was performed for: Shaw's Supermarkets

Rhode Island & Massachusetts

Project: 1980 - 1983

Cultivation of rainbow and brown trout to specific market size for supermarkets sales of farm to table fish species. Designed and erected in-store holding tanks for rainbow trout to insure freshness and the ability to provide a source for "trout en blue" a gourmet dish that requires an less-than-an-hour fish to create a reaction with the protective gelatinous cover on the fish skin reacting with vinegar to turn "blue". Complete design and implementation of aeration and filtrations systems.

Other Sample Projects

Owner/Operator, WHALE Environmental Services LLC

Project: February 2011 -present

Company work was performed for: Turtle Bay Resort

Environmental and Energy Audit; Environmental Coordination Services for sustainability implementation, Kahuku, HI

Conducted Environmental Audit using EPA's 7 parameter method for evaluation. Expanded audit to detail energy aspects including lighting inventory, runtime analysis and lumen analysis. Assisted in the selection of renewable energy sources such as Solar PV and Bio Carbonization Units. Completed financial analysis of energy implementation designs and efforts.

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57-101 Kuilima Drive #23W
Kahuku HI 96731
808-294-9254
markahowland@hawaii.rr.com

Prepared feasibility studies for various energy and water management scenarios. Saved TBR over \$1.4M/yr. in costs.

Other Sample Projects

Program Manager, Chief Biologist, Environmental Research Corps

Company work was performed for: WorldCom/MFS Network Technologies

Northeast US Corridor

Project: January 1998-April 2000

Environmental Consultant responsible for the preparation of all wetlands delineations (2132 locations), wildlife habitat studies and environmental impact statements for fiber optic cable placement of the 1200 mile EZ toll system in New Jersey and the main fiber optic cable East coast backbone line from Washington DC to Green Hill Beach, Rhode Island to London England. Responsible for all federal, state and county/municipal permitting for cable trenching, directional bores and undersea placement.

Sample of Services provided by Environmental Research Corps/WHALE Environmental Services LLC that formed the basis for company contracts on over 28,000 projects.

Array of Services

<i>Wetland Delineations</i>	<i>Wetland Design & Computer Modeling</i>
<i>Wetlands Replication & Plantings</i>	<i>Wetlands Restoration & Mitigation</i>
<i>Wetlands Maintenance & Management</i>	<i>Water Quality Monitoring</i>
<i>Expert Witness</i>	<i>Site Walks and Public Hearings</i>
<i>Riverfront Area Delineations</i>	<i>Environmental Impact Reports</i>
<i>Natural Resource Inventories</i>	<i>Wildlife Habitat Designs</i>
<i>Refuge Construction & Habitat Enhancement</i>	<i>Vernal Pool Certification</i>
<i>Endangered Species Review & Wildlife Checklists</i>	<i>Water Gardens Creation</i>
<i>Specialized Plantings and Seed Mixtures for Wildlife</i>	<i>Wildlife Area Evaluations, HCP(s), WHA(s), WEP(s)</i>
<i>Wildlife Mitigation Products & Barriers</i>	<i>Sources for Wildlife Enhancing Materials</i>
<i>Preliminary Assessment of Pollution</i>	<i>Calculations of Pollution Potential</i>
<i>Review of Federal and State Files</i>	<i>Design of Mitigation Structures</i>
<i>Environmental Audits & Sustainability Reports</i>	<i>Silt and Sediment Control Products</i>
<i>Specialists in Constructed Wetlands for Clean-up</i>	<i>Wetland Impact Solutions</i>
<i>Constructed Wetlands for Stormwater Runoff</i>	<i>Stormwater Calculations and Computation</i>
<i>Review of Stormwater Designs</i>	<i>Verification of Site Development Modeling</i>
<i>Inventory of Stormwater Runoff Products</i>	<i>Water Saving Products</i>
<i>Specialists in Commercial Pollution Mitigation</i>	<i>Specialists in Residential Subdivision Runoff</i>
<i>Narratives for regulatory submission on erosion</i>	<i>Erosion Potential Calculations and Computation</i>
<i>Review of Erosion Control Plans</i>	<i>Inventory of Erosion Control Products</i>
<i>Specialists in Bank Stabilization</i>	<i>Leaders in Erosion Control Designs</i>
<i>Coastal and Inland Wetlands Solutions</i>	<i>Coastal and Inland Bank Stabilization</i>
<i>Dock and Pier Impact Studies</i>	<i>Shellfish Inventories</i>
<i>Maintenance & Management of Planted Areas</i>	<i>Permitting and As-Built Narratives</i>
<i>Design of replication/restoration areas</i>	<i>Invasive Species and Weed control</i>
<i>Detailed investigations of hydrology and soil types</i>	<i>Energy Audits and Inventories</i>

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

APPENDIX F

Demolition, New Home construction with
two (2) Dwellings & Carport

CULTURAL IMPACT
ASSESSMENT (CIA)



WHALE Environmental Services LLC

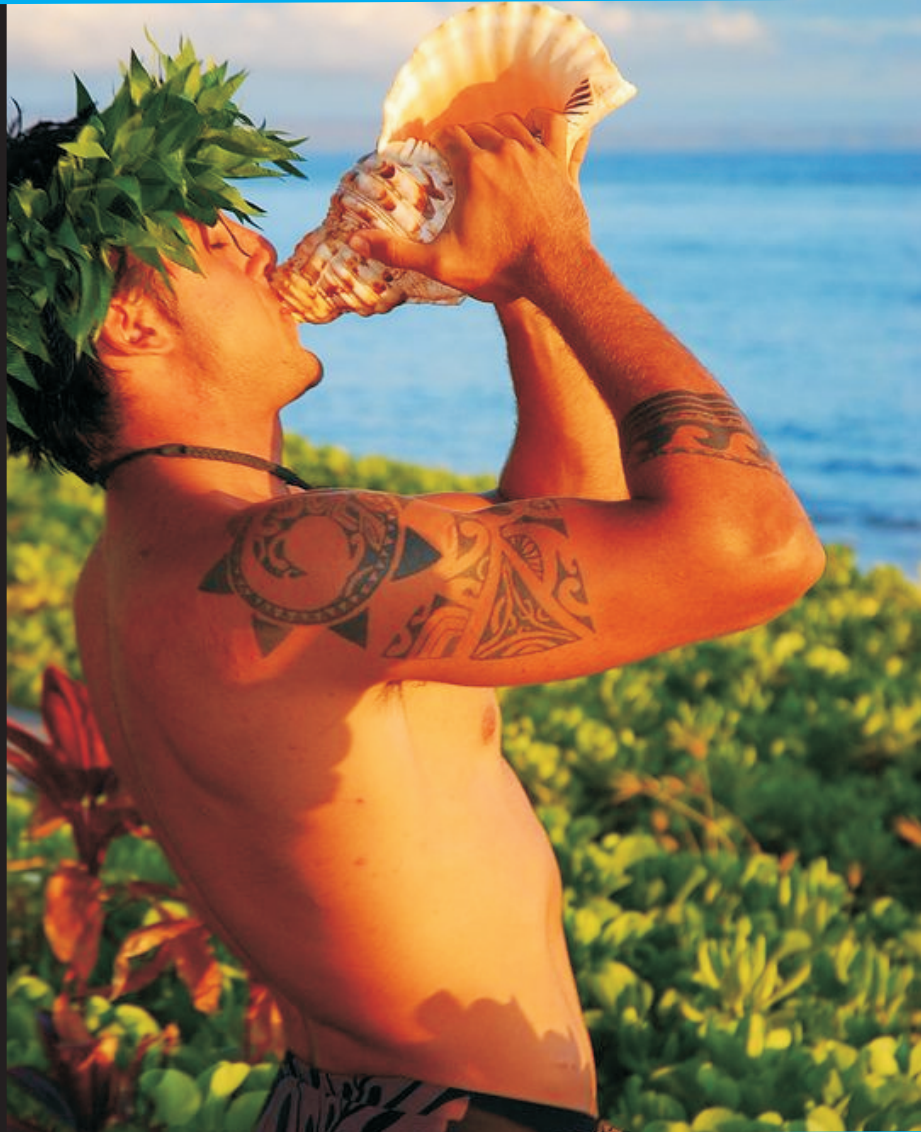
P.O. Box 455, KAHUKU, HI 96731 808-294-9254

Sea Turtle Estates Zucco Property

Kahuku HI

Cultural Impact Assessment

February 2023



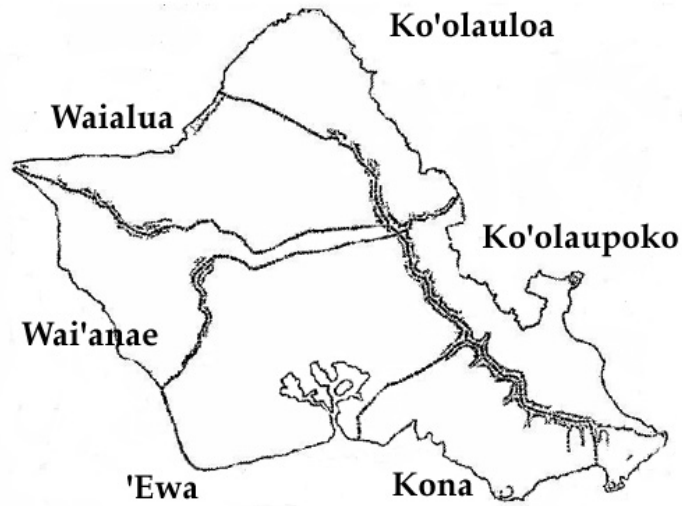
*Speak to the 'aina...
Work with Lokahi*

HARMONY AND BALANCE

MOKUPUNI / ISLAND DISTRICT of O'AHU

Note: files not complete – to be updated at www.SciHI.hawaii.edu !

Moku of O'ahu

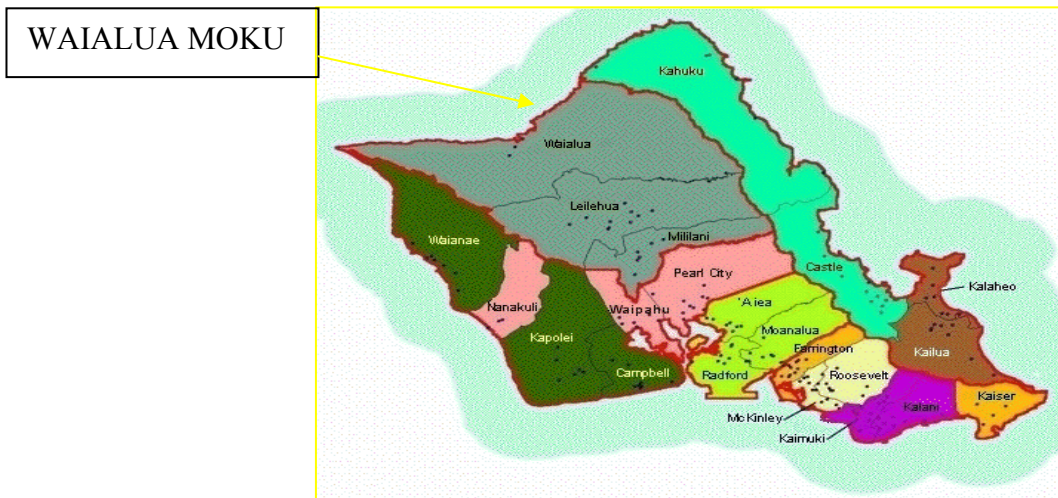


DESCRIPTION OF MOKU (ANCIENT DISTRICTS of O'AHU)

There were six large land divisions in ancient O'ahu, each having a source of fresh water for all the ahupua'a within a moku/district, and access to each area of resource, from reef to coast to midlands and mountains.

WAIALUA (CENTRAL DISTRICT)

Retrieved from http://doe.k12.hi.us/myschool/map_oahu.htm



Schools in the Moku Waialua on O‘ahu

The Waialua Complex includes two elementary schools and one middle-high school. Located in the Leilehua-Mililani-Waialua Complex-Area (Central District), Haleiwa Elementary, Waialua Elementary, Waialua High & Intermediate schools make up the North Shore area of the complex.

Description of This Moku

Waialua is the northwestern district of O‘ahu, from Ka‘ena Point in the west, to Kapaeloa at Waimea Bay. It was known in ancient times for its fishing grounds and gods. "Waialua" means "two waters," which has been referenced to mean: a lo‘i (taro pond), or a pool at Kemo‘o; or the name of a bad chief named Waia, who was "doubly ('lua') disgraced." According to David Malo, an early Hawaiian historian, Waia was "so absorbed in the pursuit of pleasure that he disregarded the instructions of his father to pray to the gods, to look well after the affairs of the kingdom, and to take good care of his people so that the country might be prosperous."

In ancient times, the ruling chiefs of O‘ahu lived near the center of the island and the famous birthing stones of Kukaniloko in Wahiawa; the chiefs were fed by the fish of 'Uko'a fishpond in Waialua. The sin of O‘ahunui, the cannibal king, caused their home in central O‘ahu to be cursed by Kāne, the god of life, and the chiefs have not lived there since that time. The district of Waialua also contains the famous "leina a ka 'uhane" ("spirit leap") near Ka‘ena Point, where spirits of the recently departed leapt into the sea from an uplifted limestone rock and were met by ancestors who guided them safely to the land of spirits.

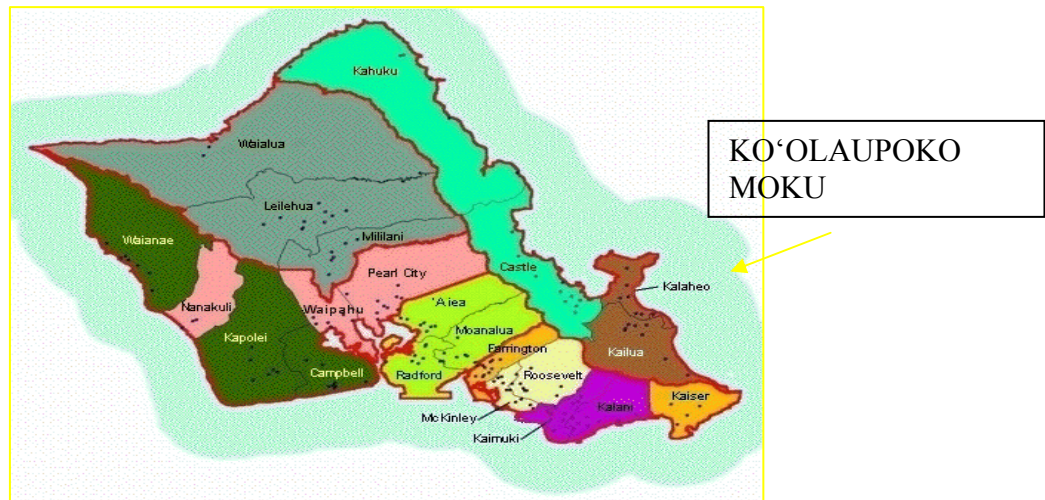
The ahupua‘a from west to east are Ka‘ena, Keālia, Kawaihāpai, Mōkūle‘i (or Hinakokea), Ka‘ala (or Pu‘uka‘ala), Kamananui, Pa‘ala‘a, Kawailoa, and Kāpaeloa.

For much more on this, go to these sites:

<http://apdl.kcc.hawaii.edu/~oahu/stories/waialua/index.htm>

<http://www.gonorthshore.org/history.htm>

Ko'olaupoko (Windward District)



Schools in the Moku Ko'olaupoko on O'ahu

This moku splits the Castle-Kahuku complex that includes thirteen elementary, one intermediate, and two high schools (one is a combination intermediate & high school). The schools in the Castle section of the complex include: Castle High, King Intermediate and the Hakipu'u Learning Center Public Charter School (PCS). This moku also includes the Kailua-Kalaheo complex which has the following schools: Kailua High, Olomana School (for students at risk), Waimanalo Elementary & Intermediate and Ke Kula O Kamakau Lab PCS.

Description of This Moku

Unlike many other moku on O'ahu, Ko'olaupoko has only been urbanized on one-quarter of its land. This is largely due to the topography of this moku. In spite of this small amount of urbanization, the moku has changed greatly since ancient times. This moku receives the most rain on O'ahu, 300 - 350 inches annually. The lands are well watered by streams; Kāne'ohe Bay, with the only barrier reef in Hawai'i, has a protected lagoon known for its abundance of fish and its numerous fishponds, where mullet and milkfish were fattened. The delicious uhu, or parrot fish, is the famous fish of this land, from Kāne'ohe Bay to Maunaloa Bay. The land section of Kualoa was sacred to the chiefs, and the home of the famous Tahitian voyaging chief, La'amaikahiki, while he lived in Hawai'i. Kaulu is the most well-known demigod of Ko'olaupoko, similar to Kamapua'a of Ko'olauloa and Maui of Wai'anae.

According to legend, during the Makahiki festival several Akua (Gods) appeared. Akua Loa traveled in a right circle around the island and Akua Poko journeyed to the left. Eventually, they met at the ahupua'a division between Kualoa and

Ka'a'awa. As a result, the names Koolauloa and Koolaupoko were given to the moku to represent the meeting of the Akua.

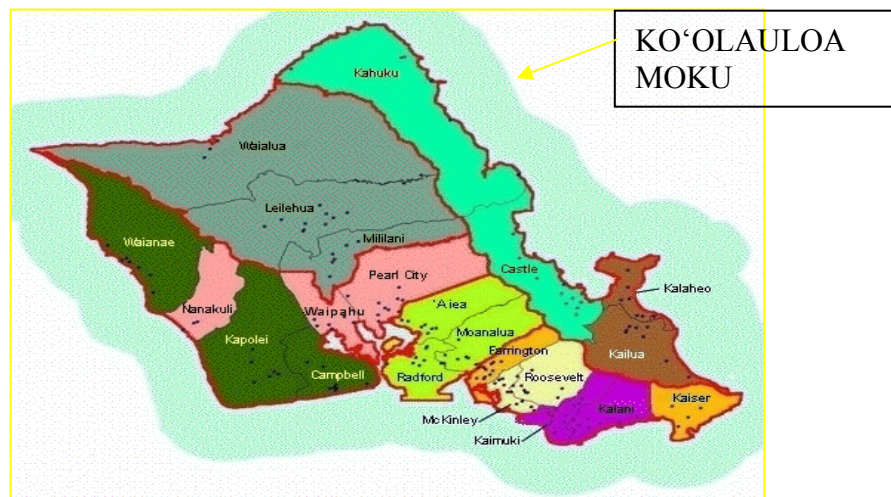
The ahupua'a from west to east are: Kualoa (or Holopali), Hakipu'u, Waikāne (or Kiliua), Waiāhole, Ka'alaea, Waihe'e, Kahalu'u, He'eia, Kāne'ohe (or Ulumano), Kua'a'ohe (or Mololani), Kailua (or Malanai), Nu'uaniu (or Puahiohio), Waimānalo (or Limulipu'upu'u), and the island called Mokoli'i more commonly known as Chinaman's Hat.

Go to these sites for more information:

<http://koolaupoko.com/menu.htm>

<http://apdl.kcc.hawaii.edu/~oahu/stories/koolaupoko/index.htm>

Ko'olauloa (Windward District)



Schools in the Moku Ko'olauloa on O'ahu

This moku splits the Castle-Kahuku complex that includes thirteen elementary, one intermediate, and two high schools (one is a combination intermediate & high school). Since this school district complex division overlaps with the moku above we will only list the Kahuku schools here. Upper level schools in the Kahuku complex include: Kahuku High & Intermediate and Lā'ie Elementary.

Description of This Moku

Ko'olauloa is the northeastern district of O'ahu, from Waimea Bay on the North Shore to Ka'a'awa on the windward coast. ("Ko'olau" means "windward"; "loa" means "long"). The valleys from Lā'ie to Kahana are well-watered and fertile. The most famous god of this land was Kamapua'a, "Pig-Child," whose home was in

the valley of Kaliuwa'a (Sacred Falls) in Kaluanui. The gods Kāne and Kanaloa wandered through this district, creating springs and fishing. Fish is abundant; the coastline is also noted for its shark gods and shark men (mano kanaka).

According to legend, during the Makahiki festival several Akua (Gods) appeared. Akua Loa traveled in a right circle around the island and Akua Poko journeyed to the left. Eventually, they met at the ahupua'a division between Kualoa and Ka'a'awa. As a result, the names Koolauloa and Koolaupoko were given to the moku to represent the meeting of the Akua.

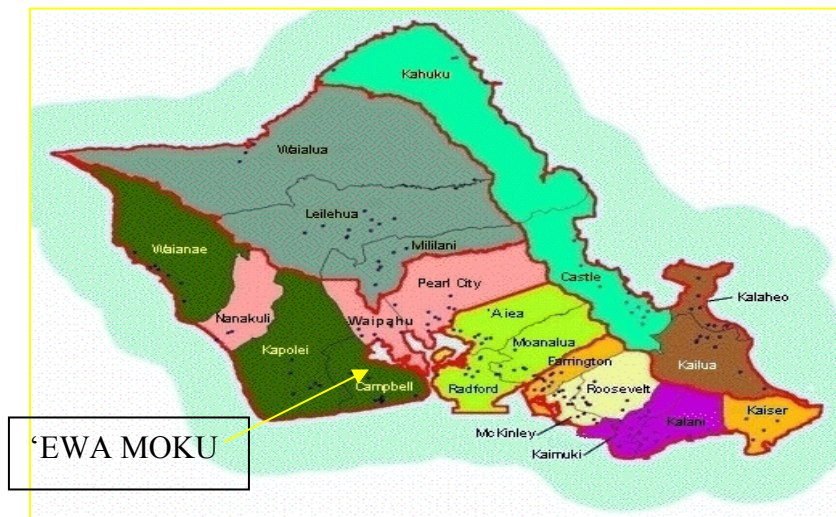
The ahupua'a from west to east are Waimea, Keahuohapu'u, Pupukeya, Paumalu, Kaunala (or Peapueo), 'Opana, Kawela, Hanakao'e, Kahuku (or Ahumanu), Keana, Malaekahana, Lā'iewai, Laniloa, Lā'iemalo'o, Kaipapa'u, Hau'ula (or Lanakila), Mākoa, Kapaka, Kaluanui, Punalu'u (or Moa'e), Kahana (or 'Āhiu), Ka'a'awa (or Holopalo), and Ka'o'io.

For more on this go to:

<http://apdl.kcc.hawaii.edu/~oahu/stories/koolauloa/index.htm>

'Ewa Moku (Central District)

Retrieved from http://doe.k12.hi.us/myschool/map_oahu.htm



Schools in Moku 'Ewa on O'ahu

Middle and High schools in this area include: Aiea High School, Campbell High School, School, Kapolei High School, Moanalua High School, Pearl City High School, Radford High School, Waipahu High School

Description of This Moku

'Ewa is in the Southwest district of O'ahu with lands surrounding the estuary of Pu'uloa (Pearl Harbor), from Hālawā in the East to Honouliuli in the West. "'Ewa" means "crooked" or "unequal." The lands around Pu'uloa are watered by streams running down from the Ko'olau Mountains, while the western plains, where homeless spirits without family or friends wandered, are dry. The estuary of Pu'uloa was noted for its abundance of seafood and for its guardian shark goddess, Ka'ahupahau, its fish goddess, Kaihuopala'ai, and its mo'o (water lizard) goddess, Kanekua'ana, who brought, then took away, the oysters from which Pearl Harbor got its name.

Click on the hyperlinks above or go to <http://apdl.kcc.hawaii.edu/~oahu/graphics/> for a variety of maps on this information.

The Moku of Wai'anae on O'ahu is fully explored in a separate document in this folder. See page A-110.

The Moku of Kona on O'ahu will be added to the Web site. Our apologies that it is not available now.

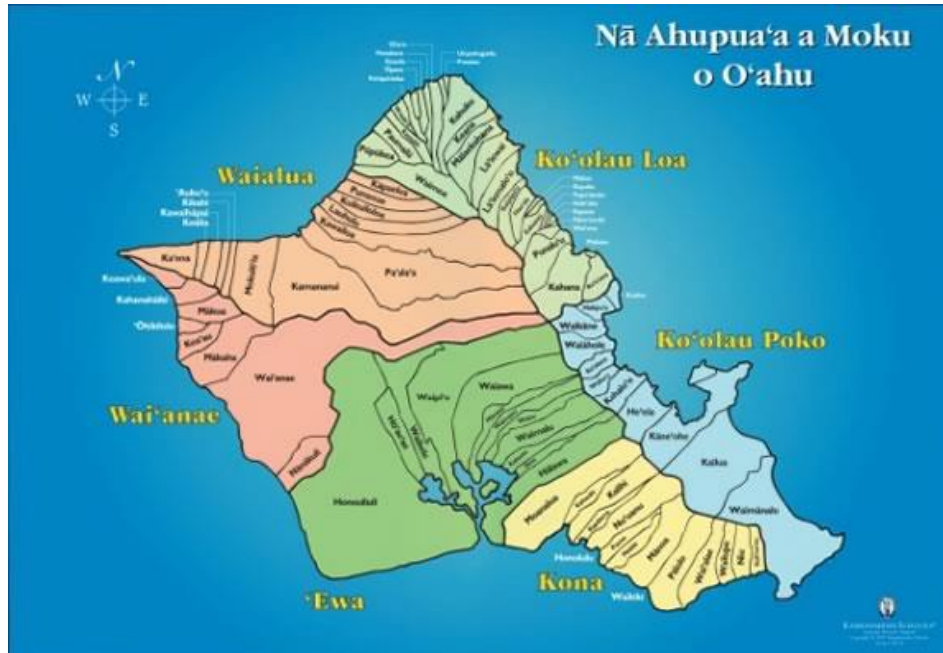
**CULTURAL IMPACT ASSESSMENT OF
ZUCCO PROPERTY IN SUPPORT OF AN ENVIRONMENTAL
ASSESSMENT OF ITS PROPOSED
RESIDENTIAL DEVELOPMENT
OF FAMILY RESIDENCES**

**MALAEKAHANA AHUPUA‘A, KOĀOLAU LOA MOKU DISTRICT, ISLAND
OF OAHU
TMK (1) 5-6-001:089**

Prepared for:
Sea Turtle Estates LLC Property
Zucco Family

Prepared by:
Bonnie L. Howland
WHALE Environmental Services LLC
P.O. Box 455
Kahuku, HI 96731
February 2022

Cultural Impact Assessment – Zucco Property



ABSTRACT – EXECUTIVE SUMMARY

WHALE Environmental Services LLC has completed a Cultural Impact Assessment (CIA) of the Sea Turtle Estate LLC Property location in Kahuku and its proposed development of residential single-family residences. The approximately 1.362 project area is located in Malaekahana Ahupua'a, Ko'olau Loa Moku District, Oahu Island, located at 56-157 Kamehameha Highway in Kahuku HI 96731.

The site is TMK (1) 5-6-001-089. This CIA is written in accordance with HRS § 343 (law governing Environmental Impact Statements [EIS]) and HAR § 11-200 (rules governing content of EIS and Environmental Assessment [EA] documents) and their relevant chapters; as well as the OEQC's 2012 *Guide to the Implementation and Practice of the Hawaii Environmental Policy Act*. (now OSPD)

We requested suggested contacts familiar with the region from OHA through its Lead Compliance Manager - Kamamaka Ferreira for names that would allow us to conduct formal interviews with two individuals for this CIA. The results of these consultations are presented in this CIA along with the findings of our archival research, which included historical map analysis; review of Māhele 'Āina (Land Commission) records; a consideration of the Hawaiian cultural landscape; nineteenth-century developments in and near the project area; early twentieth-century developments in and near the project area.

Extensive Consultation with Susan Lebo of SHPD is that WHALE Environmental Services LLC, and particularly Bonnie Howland – lead cultural historian is more than qualified to

Cultural Impact Assessment – Zucco Property

do CIAs, historical reports and such. SHPD does not certify CIAs or any permits below a SMA Permit. Ms. Lebo has so informed DPP that CIAs prepared for this project suffices for EA presentation and appreciates the stop work requirement during construction if artifacts are un-covered.

Cultural Impact Assessment – Zucco Property

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INTRODUCTION

- Purpose and Content of Cultural Impact Assessments
- Project Area Description

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- Field Inspection
- Mitigating Factors, Conditions and Caveats
- Archival Research
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- Hawaiian Cultural Landscape: Place Names and Oral History
- Historical Changes and Map Analysis

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- Previous Studies of the Vicinity of the Project Area
- Results from the Current Project Area

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- Interviews
- Informal Consultations
- Biographical Notes
- Discussion Notes

CONCLUSION

- Recommendations

REFERENCES CITED

- APPENDIX A: State OEQC Guidelines for Assessing Cultural Impacts
- Report Research

Cultural Impact Assessment – Zucco Property

INTRODUCTION

On behalf of the landowner, Sea Turtle Estates LLC of the Property, WHALE Environmental Services, LLC, has completed a Cultural Impact Assessment (CIA) of the Sea Turtle Estates LLC project. The approximately 1.362 acre project area is located in Malaekahana Ahupua‘a, Ko‘olau Loa Moku District, Oahu Island, located at 56-157 Kamehameha Highway, Kahuku



Figure 1 - Locus Map

The project is in TMK (1) 5-6-001:089. In general, the objective of the proposed project is to construct a family homes construction on the lot for main house and guest quarters. The project lies in a Special Management Area (SMA) and is in the process of applying for an SMA Major Permit for the development. The lot is developed, and the existing house will be demolished for the new main house and the addition of two guest quarters.

Purpose and Content of Cultural Impact Assessments

This CIA is designed to satisfy HRS § 343 (law governing Environmental Impact Statements [EIS]) and HAR § 11-200 (rules governing content of EIS and Environmental Assessment [EA] documents) as well as the OEQC's 2012 Guide to the Implementation and Practice of the Hawaii Environmental Policy Act (now OPSD). Ms. Susan Lebo of

Cultural Impact Assessment – Zucco Property

SHPD has informed DPP that CIAs are not archaeological instruments, and as such, Ms. Bonnie Howland is qualified to perform CIAs, historical reports and any above-surface reviews. Interestingly, cultural resources valued by individuals and communities with historical and genealogical ties to a given project area may be different than those deemed significant by “outsiders,” including scientists, anthropologists, and other researchers not from the area. Likewise, the same resource may be valued in different ways by “insiders” and “outsiders.” A pertinent example in this study is the presence of Ironwood trees (*See Botanical and Faunal Assessment in the DEA*) in the project area. This resource may be viewed by those interested in the pre-Contact Hawaiian landscape as invasive species, reflecting the history of deforestation and loss in the moku; and others, for example, may interpret these plantings as part of the modern era farmers using it as a valuable windbreak. In CIA work, we are interested in both of these perspectives. Our objectives are to identify *all* the various types of cultural resources in and near the project area, to explain why they are important to different individuals or groups, and to recommend ways they can be preserved or protected, if appropriate. We are also interested in expressing the intangible values people attribute to the project area.

Maly and Maly (2005), citing Kent et al. (1995), use the term “*cultural attachment*” to describe this important class of phenomenon:

“Cultural Attachment” embodies the tangible and intangible values of a culture—how a people identify with, and personify the environment around them. It is the intimate relationship (developed over generations of experiences) that people of a particular culture feel for the sites, features, phenomena, and natural resources etc., that surround them—their sense of place. This attachment is deeply rooted in the beliefs, practices, cultural evolution, and identity of a people. The significance of cultural attachment in a given culture is often overlooked by others whose beliefs and values evolved under a different set of circumstances. (Maly and Maly 2005:3)

In Hawai‘i, commonly identified cultural resources include archaeological sites; burial sites and cemeteries; *wahi pana* (legendary places associated with oral history); natural landscape features such as *pu‘u* (e.g., hills, outcrops and other promontories), ridges, and water sources and courses; natural phenomena such as characteristic weather patterns, winds and rain (many of which have place-specific names); and other place names and landscape features that are important to local families. Such resources need not necessarily refer to Hawaiian culture but may also include other ethnic groups.

Cultural Impact Assessment – Zucco Property

Anthropologists have long recognized the value in studying both “insider” and “outsider” perspectives, called “emic” and “etic,” respectively, when trying to understand cultural values and significance.

In Hawaiian culture, there is no hard and fast distinction between cultural and natural resources; thus, for example, a clean and healthy kahawai (stream) is just as much a cultural resource—because its existence is crucial to carrying out traditional and customary practices such as irrigated (pond-field) agriculture—as a natural one.

We sought formal interviews with parties familiar with the cultural history for this CIA, and spoke informally about the proposed project with others. The results of this on-going consultation are presented in this CIA along with the findings of our archival research, which included historical map analysis; review of Māhele ‘Āina (Land Commission) records; information on the Hawaiian cultural landscape; nineteenth-century developments in and near the project area; and early twentieth-century developments in and near the project area.

Project Area Description

The Sea Turtle Estates LLC Property project has its main road – Kamehameha Highway as its frontage; and heads across level ground, in the makai direction, until it connects with the Pacific Ocean. The terrain over which the project passes is relatively open with mostly consisting of a grassed yard(s) and a tree/shrub perimeter. Mean annual rainfall in the project area is approximately 32 inches, but it also receives additional precipitation from sea mist that rolls in during storm periods. The area has a mean annual temperature of 78°F.

A Biological Survey (WES 2023) of the project area provides some information on historic and modern changes to the landscape and vegetation in and around the project area. According to WES 2023), prior to the arrival of the first humans on Oahu, vegetation in and around the project area was likely a forest with a canopy of milo, noni and/or naupaka. Following the start of Hawaiian settlement in the islands, *“a series of forces including fires, agriculture, forestry, and introduced plants, animals, and diseases transformed the site [project area] to predominantly non-native vegetation”* (ibid.) In historic times, the primary land uses would have been for access to off-shore fishing spots (k’oa) and fishponds. Currently, the project area and environs is occupied and the historical aerial imagery for the site seen in the Environmental site Assessment (ESA) in the EA shows its current status since at least 1962 and present day representative photographs of the project area taken on our recent (January, 2023) reconnaissance for both the botanical and ESA reports.

Cultural Impact Assessment – Zucco Property

Topographical maps for the project area may also be found in the ESA over several years and again no change in site elevation for many years has persisted.

METHODS

This section describes the methods of a field inspection, archival research, consultation/interviews, and report writing activities for this project.

Field Inspection

We obtained details on the proposed project development and its geospatial location prior to conducting a field inspection for this CIA (see *Conceptual Plan for Sea Turtle Estates LLC Property – DEA Appendix 3*) prepared by Michele D’Amico, licensed architect, who provided data on the planned residential single family and guest homes/construction development.

Mitigating Factors, Conditions and Caveats

In general, our objective was to walk as precisely as possible the entire project area. In reality, conditions on the ground in a small portion of the project area made this not possible, since the dense perimeter trees and shrubs covers that portion of the terrain. In most of the project area, ground visibility is generally good to excellent, and one can observe conditions on the ground surface from a distance without having to walk over every square foot.

Archival Research

Prior to going into the field, Howland utilized UHWO Hawai‘i’s reference library to obtain some general information about the project area and its environs. Howland also visited the State Historic Preservation Division’s (SHPD) library of reference materials online (no reports of any previous archaeological studies in or near the project area were accessible – some sealed).

We also utilized these on-line databases 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?styp=3>)

Cultural Impact Assessment – Zucco Property

- University of Hawai'i-Manoa'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/>)
- US Library of Congress digital maps (<https://www.loc.gov/maps/>)
- Hawai'i State Archives digital collections (<http://archives1.dags.hawaii.gov/>)

Consultation/Interviews

We are still working on expanding these interviews – contact has been made with two individuals. Any results will be entered in this section before SMA submission to DPP and SHPD.

Report Writing Activities

Our research was processed, merged with other gathered information, and was used to develop this report.

Historical and Cultural context of the Sea Turtle Estates LLC Project area

This section presents a selection of information related to the project area, including relevant place names and oral history, traditional land uses, historical changes in land uses in and near the project area, and historically-significant features shown on historic maps in and near the project area.

Hawaiian Cultural Landscape: Place Names and Oral History

Hawaiian place names and *wahi pana* (legendary or storied places) are repositories of oral-historical knowledge, cultural significance and community values about indigenous landscapes. Because Hawaiians did not have a written system of communication prior to the arrival of Captain James Cook in 1778, our understanding of the meaning of Hawaiian place names is based on translations and interpretations from the nineteenth and twentieth century. As such, some places have more than one possible interpretation, which is particularly so since Hawaiians also highly valued both kaona ("hidden meaning") and huna ("secret meaning"), or "double meanings," in their poetic description of the natural world.

Malaekahana Ahupua'a, Ko'olau Loa Moku District

Ko'olauloa is the northeastern district of O'ahu, from Waimea Bay on the North Shore to Ka'a'awa on the windward coast. ("Ko'olau" means "windward"; "loa" means "long"). The valleys from La'ie to Kahana are well-watered and fertile. The most famous god of this land

Cultural Impact Assessment – Zucco Property

was Kamapua'a, "Pig-Child," whose home was in the valley of Kaliuwa'a (Sacred Falls) in Kaluanui. The gods Kane and Kanaloa wandered through this district, creating springs and fishing. Fish is abundant; the coastline is also noted for its shark gods and shark men (mano kanaka).

According to legend, during the Makahiki festival several Akua (Gods) appeared. Akua Loa traveled in a right circle around the island and Akua Poko journeyed to the left. Eventually, they met at the ahupua'a division between Kualoa and Ka'a'awa. As a result, the names Koolauloa and Koolaupoko were given to the moku to represent the meeting of the Akua. The ahupua'a from west to east are Waimea, Keahuohapu'u, Pupukea, Paumalu, Kaunala (or Peapueo), 'Opana, Kawela, Hanakao'e, Kahuku (or Ahumanu), Keana, Malaekahana, Lā'iewai, Laniloa, Lā'iemalo'o, Kaipapa'u, Hau'ula (or Lanakila), Mākoa, Kapaka, Kaluanui, Punalu'u (or Moa'e), Kahana (or 'Āhiu), Ka'a'awa (or Holopalo), and Ka'o'io. In Hawaiian. Malaekahana has been historically known as "Puuhonua" (Place of Refuge). Hawaii is known for its many rains and winds of the islands.

Historical Changes and Map Analysis

For generations following initial settlement, communities in Ko'olauloa were clustered along the shores which offered sheltered bays from which deep sea fisheries could be easily accessed. The near shore fisheries and coastal fishponds, which were enriched by nutrients carried in the fresh water, also offered opportunities for resource extraction and stewardship. It was in these coastal areas that clusters of houses were found, and where agricultural production first became established. Over a period of several centuries, these areas became populated and perhaps even crowded, and inland elevations began to be used for agriculture and some habitation. Taro would have been the dominant crop in this area with sweet potatoes planted only as a supplement for it (Handy and Handy 1972:282-283).

Other crops would have included wauke, noni, gourds, sugarcane, 'awa, breadfruit, bananas, coconuts, and ti (Stride et al. 2003). Other resources important to subsistence would have been gathered from the sea to the mountains. The period between A.D. 1200–1650 was characterized by the greatest social stratification, major socioeconomic changes, and intensive land modification (Kirch 1985). Most of the ecologically favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed. The concept of the ahupua'a was established during the A.D. 1400s (Kirch 1985), adding another component to a then well-stratified society. This land unit became the equivalent of a local community, with its own social, economic, and political significance. Ahupua'a were ruled by ali'i 'ai ahupua'a or lesser chiefs; who, for the most part, had complete autonomy over this generally economically

Cultural Impact Assessment – Zucco Property

self-supporting piece of land, which was managed by a konohiki. Ahupua‘a were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986).

Entire ahupua‘a, or portions of the land were generally under the jurisdiction of appointed konohiki or lesser chief-landlords, who answered to an ali‘i-‘ai-ahupua‘a (chief who controlled the ahupua‘a resources). The ali‘i-‘ai-ahupua‘a in turn answered to an ali‘i ‘ai moku (chief who claimed the abundance of the entire district). Thus, ahupua‘a resources supported not only the maka‘ainana and ‘ohana who lived on the land, but also contributed to the support of the royal community of regional and/or island kingdoms. This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resources management planning. In this system, the land provided fruits and vegetables and some meat in the diet, and the ocean provided a wealth of protein resources.

Legendary Accounts of the regional Ahupua‘a (s)

The current study parcels are located in the District of Ko‘olauloa, Island of O‘ahu. This area includes a rich fishery and a broad coastal plain abundant with wetlands, springs, and brackish pools. This area was once renowned for its hala groves.

This moku and many of the places named within it, have traditional legends associated with them.

[1] Legend tells us that Kahuku region was a floating island situated several miles out to sea. For a long time, the people of O‘ahu had planned to make the island part of their land, for they saw it come close to O‘ahu’s shores. The floating island of the Menehune did not have any fresh water springs because there were no high mountains covered with verdure and trees to capture the rains. So, the Little Folk used to paddle their islet into the bays of O‘ahu at night to haul water from the springs of the larger island.

One day, a resident of Kahuku suggested that all the people gather together to make strong hooks of whalebone and attach them to a stout rope made of sacred olona fibres. This was done. The Menehune came to take water as usual, then the residents of O‘ahu attached the large hooks to the floating isle while the Menehune started to paddle off again, but they could not move their islet or free it from their ivory hooks and Olona ropes. Today, many people who travel Kahuku section of O‘ahu and see the many islets seeming to float off shore, and hear the sea singing its songs, they say, *‘Listen to the Menehune grumbling while they try to move their island that used to float!’*

McAllister (1933) also describes a legend associated with Punamano, a spring and wetland located on the Kahuku plain. He relates that it is a small water hole that was pointed out by

Cultural Impact Assessment – Zucco Property

Kahione, Kaleo, and Luiko Kaio in the flat limestone plain of Kahuku Point. It is about 15 ft. in diameter and brackish in taste. The legend is:

One time when the people of Kahuku were fishing they caught a small shark. Putting him in a calabash of water they carried him to their houses near the beach. Here he was cared for and put in larger and larger calabashes as he grew bigger. Finally haven outgrown even the largest calabash that could be found, it was decided to place him in one of the pools of brackish water which came to be known as Punamano. A man and woman living near the pool became guardians. They had lived in their grass huts with a breadfruit tree near the pool and taro and potato patches near the mountains for several years when the brother of the woman came to live with them. Sometime after, the man and his wife went to the mountains to gather taro and potatoes. The brother, who was staying at home, thought that he would like to have some food prepared when the sister and her husband returned. He climbed the breadfruit tree and gathered several, throwing the fruit into the water instead of on the ground, where it would have been bruised in the fall. After picking enough for a few days he descended the tree and gathered most of the fruits from the bank. Two had floated to the middle of the pond and he could not reach them. Now this man knew of the shark that lived in the pool, but he had frequently bathed in the pool and no thought of fear crossed his mind as he swam to the breadfruit. He did not know, however, that his sister and her husband had warned the shark not to allow anyone to steal breadfruit when they were gone. When the sister and her husband returned they could not find brother. Neither was the shark to be found, but they saw the breadfruit floating in the pool and the reddish color to the water. They guessed what had occurred. For nearly a mile they followed the bloody trail until they came to a spring known as Punahoolapa. Not only was the brother never seen, but the shark has never been seen to this day.

During Precontact and early Historic times the Kahuku plain was well known for its groves of hala. Wong-Smith (1989:A-5, A-6) provides several accounts of its renown:

...he flew to Kahuku and adorned his neck with wreaths of the pandanus fruit and his head with flowers of sugarcane. [Thrum 1912:100]

This is the land of the hala tree..."I sent out word...among the people that there should be no one leaving here (Kahuku) for Waimea or Waialua who had not a wreath of hala fruit...": [Cummings 1913:241-242 cited in Wong-Smith 1989]

...men from Kahuku were identified by leis of the orange hala fruit which they wore by order of their chief when they left their ahupua'a...[Wilcox 1975]

Cultural Impact Assessment – Zucco Property

Halemano, a man credited with the evolution of hula, composed a chant to win back the attentions of his wife that mentions the hala of Kahuku (Wong-Smith 1989:A-6). The chant goes:

*A kukui au a Kahewahewa
Ku au nana I laila,
Haloilo Kuu waimaka e uwe,
Nani na hala ka oiwi o Kahuku,
I ka lawe a ka makani he mikoioi
As I reported to Kahewahewa*

I stood and gazed, then
Tears filled my eyes causing me to weep.
How beautiful are the hala, native trees of Kahuku,
As they are being fanned by the Mikoioi wind
[Elbert 1965:280-281 cited in Silva 1984]

The tale of Laieikawai is a story that has versions in other Pacific cultures, but also is a dominant myth in Hawaii, and is most often associated with the legends and myths of Hawaii. It is a story of romance, of deceit and deception, of vows and prayers. This is a story of “*a favorite daughter of Hawaii*” (Haleole).

Haleole questioned the origin of the story being solely Hawaiian (similar tales are scattered throughout Polynesia) but placed his tale in the Hawaiian Islands. He described the Islands of Hawaii, and discussed elevations, weather, topography, plant life and more. For Laieikawai, this had one locality, the “*small fishing village of Laie*”, as described by Haleole (Haleole). Haleole pointed out that in cane fields above the Government Road, laid a pond called *Waiopuka*. This was a pool that is said to have a subterranean connection to the ocean, with a rise in water levels equal to the tides; yet one or two miles from the ocean (see appendix for map location). It was reported by Daggett as late as 1930, that a jutting rock marked the point where one could dive to reach the cave within; and behind the pool where Laieikawai was hidden. Her twin sister Laielohelohe was described by Haleole to have been brought to another locale thought to be inland at Wahiawa..

This was the tale of the birth of the twins, Laieikawai and Laielohelohe. Laie was the place Laieikawai was hidden in her early years, a place called a *pu’uhonua*; a place of refuge for *kapu* breakers (Bridge). Here lies the base of the story of Laieikawai and her upbringing – one of the twin daughters borne to Malaekahana, her mother; and Kahauokapaka, the father.

Kahauokapaka delivered to his wife a vow upon marrying her, that no daughters borne of this union would be tolerated; since only sons would survive him to portion out the lands he controlled (two districts in the Koolau Mountains). Only daughters that came after the birth of a son would be tolerated, any earlier would be destroyed. After a while, a daughter of beauty was

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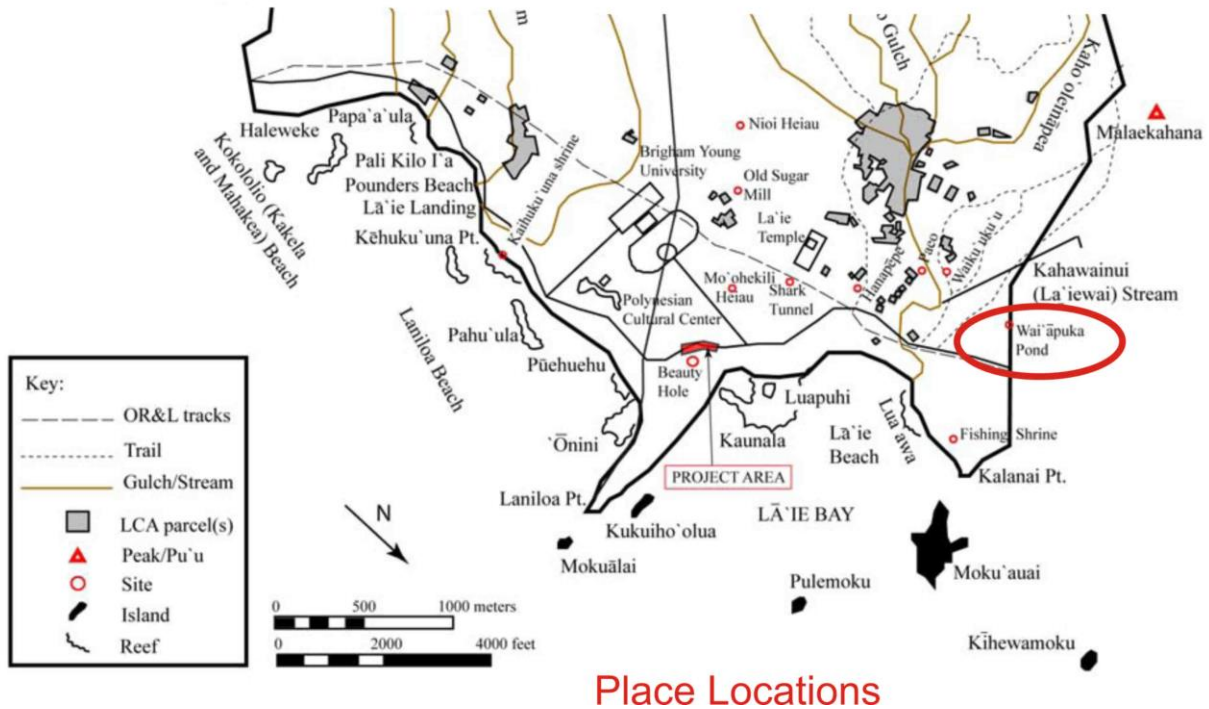
conceived and delivered, and her father had her executed despite the mother's belief that such beauty could not be destroyed. A second, even more beautiful daughter was delivered, and Kahauokapaka had her executed as well. This went on in this pattern with subsequent conceptions.

By the fifth time Malaekahana conceived, she had lost four daughters and went to the priests to say she could not tolerate her husband killing the precious lives. She would rather do the deed herself, but the priest said to come back when the child is ready to be born for the decision. He asked for a sign, and asked her to present him a hand, and she presented her left with the palm upward, which the priest said meant another daughter. She was so sorrowful that the priest had to offer a solution - *“tell Kahauokapaka when you are ready to deliver, that you have a craving for manani spawn and he must go fishing for those fish. While he is away, give the child borne to me and I will hide the baby”* (Haleole). When he returns and the child is missing, tell him it was aborted.

And this is indeed what happened, she had labor pains; she sent Kahauokapaka off fishing for *manani*, and delivered Laieikawai, and then Laielohelohe while he was away. They were given to the care of the grandmother, Waka and to the priest, Kapukaihaoa. Upon Kahauokapaka's return, he asked how she was, and she said the baby was aborted, and she had thrown it in the ocean. But he had heard two claps of thunder in the month of October, which signaled the twins' birth and was unsure.

This prompted Malaekahana to insure her babies were hid. Kapukaihaoa said to take the baby Laieikawai to the hidden cave at the pond of Waiapuka for care and upbringing, where it would be his responsibility to see she is protected. The twin Laielohelohe was taken to the slopes of Wahiawa, to the sacred place called Kukaniloko for her protection. Laieikawai was hidden at Waiapuka until maturity; and it was said that all the days she was there, that a rainbow appeared above the hidden cave constantly; no matter if there was rain or sun, it was a sign of the guardians protecting her. Prophets saw the rainbow and sought the princess, yet the Waiapuka cave in the pond was so well hidden, Laieikawai remained safe.

Cultural Impact Assessment – Zucco Property



Place Locations

The story centers on location encircled in red, Wai'apuka Pond. The region, Laie, was called an old city of refuge and the southern boundary beyond Pounder's Beach was called the 'Pa-paa-koko. Or "fence that held the blood". The entire region is believed to be named after the Legend of Laieikawai and the legend was named *La'ie I ka 'ehēu o na manu* – Laie – borne of the wings of birds. Wai'apuka Pond was still in its original state in 1885 when parties came to view it. In 1930, McAllister did an archaeological survey for Bishop Museum and stated it was intact, but so silted that the entrance to the cave was no longer possible to access (Bridge).

(Map Courtesy of AECOM EIS for HDOT La'ieloa Bridge Replacement 2012)

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History After Contact 1779-1847

On February 28, 1779, two weeks after the death of Captain James Cook, the H.M.S. Resolution captained by Charles Clerke rounded the northern tip of O‘ahu providing the first historical accounts of the Kahuku area. Clerke wrote:

SUNDAY 28th. . . *run round the Noern [Northern] Extreme of the Isle which terminates in a low Point rather projecting; off it lay a ledge of rocks extending a full Mile into the Sea, many of them above the surface of the Water; the Country in this neighborhood is exceedingly fine and fertile; here is a large Village, in the midst of it is run up a high Pyramid doubtlessly part of a Morai. I stood into a Bay just to the Westward of this point the Eastern Shore of which was far the most beautiful [sic] Country we have yet seen among these Isles, here was a fine expanse of Low Land bounteously cloath'd with Verdure, on which were situated many large Villages and extensive plantations; at t he Water side it terminated in a fine sloping, sandy Beach. . . [in Beaglehole 1967:I:572]*

In 1794, British Captain, George Vancouver also visited the northern tip of O‘ahu, but found the Kahuku area to be slightly different than the verdant, well populated plain described by Clerke and King fifteen years earlier. He wrote:

...In every other respect our examination confirmed the remark of Capt. King excepting “*that in point of cultivation or fertility, the country did not appear in so flourishing a state, nor to be so numerously inhabited, as he represented it to have been at that time, occasioned most probably by the constant hostilities that had existed since that period*”.
[Vancouver 1798(3):71]

By the middle of the nineteenth century the ever-growing population of Westerners forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership and the Mahele of 1848 became the vehicle for determining ownership of native lands. During the Mahele, land interests of the King (Kamehameha III), the high-ranking chiefs, and the low-ranking chiefs (the konohiki) were defined. The chiefs and konohiki were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. They were also required to provide commutations to the government in order to receive royal patents on their awards. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission (Chinen 1961:13).

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During the Mahele all lands were placed in one of three categories: Crown Lands (for the occupant of the throne), Government Lands, and Konohiki Lands. All three types of land were subject to the rights of the native tenants therein.

As a result of the Mahele, Kahuku was retained as Crown Lands by King Kamehameha III (under the name of Victoria Kamamalu). According to the Waihona 'Aina Mahele database, eighty-five claims for Land Commission Award (LCA.) parcels were made within the ahupua'a (s) of Kahuku, but only seventy-two kuleana lots were awarded to native tenants. Nearly all of awards were located makai of the present day highway. The locations of the LCA parcels generally confirm the expected Pre-contact settlement patterns discussed above for Kahuku's ahupua'a (s), with the majority of the kuleana lots located near the coast and only a few at inland locations. Information contained in the LCA testimony provides insight into Hawaiian land use practices during the early Historic Period. Silva (1984) provides a tally of the land uses mentioned in the LCA testimony for Kahuku moku, listing "162 taro patches, 39 kula plots & gardens planted w/awa, banana, wauke, gourd, sweet potato, sugar cane, noni, watermelon, pili grass, 7 clusters of hala, 6 salt lands, 4 koa canoe trees, 2 fish ponds, 10 house lots, 1 sweet potato patch cultivated upon cliffs, 1 water course bank, 3 cultivated upland plots, 1 brackish spring, 1 wooded upland area of ulu, ohia, kukui, koa, ti, noni, etc..." (in Wong-Smith 1989:A-13).

Site-Specific Cultural History

Historic and Archaeological Resources data searches of the National and State Register of Historic Places shows that no historic sites are located within the project area.

Based on historic accounts and recorded traditions, there may be additional as-yet-un-identified historic properties in the region and would most likely reflect uses and customs associated with the area's rich fisheries and the lack of any other dominant land use in this project area. These could include additional ko'a, the remnants of shelters and settlements for fishermen, burials, canoe landings, and salt-making sites. However, later uses of the area have significantly reduced the probability as nearby properties existing on the less flood prone portions of the region or along lower ridge slopes were more attractive and there is no indication that they were heavily used by natives before (as common to the project area).

The Proposed Action and No Action Alternative could have impacts on historic or cultural resources undiscovered. An archaeological monitoring plan would be developed prior to the construction phase of the project if during any foundation excavation any cultural artifacts detected. **SHPD will be notified immediately and all construction work halted until**

Cultural Impact Assessment – Zucco Property

during any continued earthwork activities, archaeological monitoring by a qualified monitor shall be put into place in accordance with an SHPD approved archaeological monitoring plan if needed. The No Action Alternative will have no impacts on project site historic or archaeological resources as construction in the area was in the 1960s, long before any of cultural resources could have been preserved.

Historical Documentation Conclusion

Analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place

In general, construction on the site which has likely not been utilized in historic past or even in the past 70 years as shown in the historical aerial photography in the ESA section of the EA minimizes the impact to any potential archaeological resources in the project area, which have not been detected.

After publication of the EA or SMA Major, consideration of public comments, and further consultation with cultural practitioners and lineal descendants from the Kahuku and Malaekahana Beach communities, a decision will be made if our conclusion that there will be no cultural impact to the project site needs to be re-visited. It is not anticipated.

While archaeological features or cultural sites are not anticipated to be significantly impacted by the proposed action, should evidence of any archaeological or cultural properties be encountered during construction, vegetation clearing and construction would immediately cease and the appropriate parties would be consulted immediately. If necessary, the planned construction will be adjusted to reduce or eliminate impact to any features located during surveys or construction or as recommended during consultation to be conducted for this project.

INTERVIEW/CONSULTATION SUMMARIES

As explained in the Methods section, we tried reached out to a few people to ask if they would like to participate in interviews for this CIA.

Our attempts were as follows to find two individuals familiar with the subject project area:

Waimea Valley
Office of Hawaiian Affairs

Cultural Impact Assessment – Zucco Property

We did not get any responses via email, phone, or web contact forms from OHA. The Waimea Valley has given us one individual familiar with Kahuku – Budde Crabbe who is a cultural expert for the ahupua`a of Waimea, but lives in Kahuku. We have contacted him and he is in agreement with the CIA, but knows of no particular cultural concerns with the site.

Sea Turtle Estates LLC, Malaekahana/Kahuku, HI Home and Structures

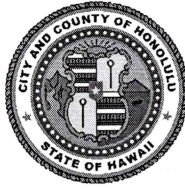
APPENDIX G

**Demolition, New Home construction with
two (2) Dwellings & Carport**

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

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

RICK BLANGIARDI
MAYOR



DAWN TAKEUCHI APUNA
DIRECTOR

JIRO A. SUMADA
DEPUTY DIRECTOR

April 25, 2023

2023/ELOG-600(CK)

Mr. Mark Howland
WHALE Environmental Services, LLC
P.O. Box 455
Kahuku, Hawaii 96731

Dear Mr. Howland:

**SUBJECT: Request for Comments – Special Management Area (SMA)
Use Permit Application for Dwellings on a Shoreline Lot
Zucco Residential Larger Development Project
57-157 Kamehameha Highway – Maleakahana
Tax Map Key 5-6-001:089**

This is in response to your letter, received March 22, 2023, requesting comments on the scope and content to be addressed in a SMA Use Permit application for the demolition of an existing single-family dwelling and construction of a new single-family dwelling and two new guest houses on a 43,560-square-foot shoreline lot located in the R-5 Residential District and the SMA in Maleakahana, Oahu. According to your submittal, a detached carport is also proposed for the principle dwelling unit and each of the guest houses.

Pursuant to Chapter 25, Revised Ordinance of Honolulu (ROH), Section 25-1.3, "development" includes but is not limited to the following:

- (E) *Construction, reconstruction, or alteration of the size of any structure, including but not limited to the construction or reconstruction of a dwelling unit:*
 - (iii) *That is part of a larger development of three or more dwelling units.*

As described in your submittal, the Project proposes the construction of a principle single-family dwelling as well as two guest cottages. Please be aware that guest cottages or guest houses are not allowed in the R-5 District. Therefore, the proposed guest cottages are considered dwelling units for zoning purposes. Because there are a total of three dwelling units, the proposal is considered a "larger development" for the purposes of Chapter 25, ROH. Further, because your submittal describes a cost range between

Mr. Mark Howland
April 25, 2023
Page 2

\$1,500,000 and \$1,800,000, an SMA Use Permit will be required. Chapter 25, ROH, as amended under Ordinance 23-4, does not exempt “larger developments” from the requirement to prepare and publish an environmental disclosure document in support of a required SMA Use Permit. For the proposed Project, we anticipate an environmental assessment (EA) will be the appropriate environmental disclosure document to meet this requirement. In this regard, please note that your submittal references an attached EA. However, no attachment to the binder copy of the written submittal was received.

Instructions for preparation of an SMA Use (Major) Permit application and the supporting EA are available on our website at the link below. Please utilize these resources as you prepare the EA and SMA Use Permit application:

www.honolulu.gov/dpp/permitting/coastal-area-permits/sma-major

In addition, the following items should be addressed in the Draft EA:

- Existing and Proposed Structures: The Draft EA should describe any existing or proposed structures, including when the existing structures were built, and identify any associated building permits or other land use approvals.
- Land Use Consistency: The Draft EA should describe the Project’s consistency with Chapter 21, ROH, the Land Use Ordinance, the Oahu General Plan, and Koolauloa Sustainable Communities Plan. In addition, because the EA is being prepared in support of a future SMA Use Permit application, the Draft EA should also analyze the Project’s consistency with Chapter 25, ROH, the SMA Ordinance; Chapter 26, ROH, the Shoreline Setback Ordinance; and Chapter 205A, Hawaii Revised Statutes. Instructions for preparation of an SMA Use (Major) Permit application are available on our website at:

www.honolulu.gov/dpp/permitting/coastal-area-permits

- Shoreline Setbacks: In order to comply with the Shoreline Setback Ordinance (Chapter 26, ROH), all development must be located outside of the shoreline setback area, which currently extends 40 foot (ft.) mauka of the Certified Shoreline for most residential properties. This setback distance from the shoreline must be confirmed on a shoreline survey certified by the State of Hawaii, and must also be reflected in the plans submitted for the SMA Use Permit application. A draft shoreline survey should be included and evaluated in the Draft EA. A certified shoreline survey should be included in the Final EA.
- Coastal Hazards: The Project site, as a shoreline lot, may be susceptible to coastal hazards associated with sea level rise (SLR), wave action, flooding, tsunamis, and storm surge. Therefore, proposed development activities must be evaluated not only for potential impacts to sensitive SMA resources, but also


Mr. Mark Howland
April 25, 2023
Page 3

for current and future susceptibility to these coastal hazards. The analysis in the Draft EA should evaluate the site's existing topographic, geologic, and shoreline environment, and explain how a proposed development can safely be located outside of the 3.2-ft. SLR-Exposure Area, and avoid impacts associated with other coastal hazards. The Draft EA should also explore project alternatives, site design (siting and configuring the proposed dwelling as far from the shoreline as possible), project design features (elevated structures, alternative foundations, etc.), Best Management Practices, and appropriate mitigation measures to reduce potential impacts related to coastal hazards to the extent possible.

Copies of available records for the subject property can be obtained from our Data Access and Imaging Branch. Please note that any request for permit research and/or copies (e.g., a Certificate of Occupancy, or a specific land use or building permit) must be accompanied with a research request fee. A money order or certified check in the amount of \$5.00, made payable to the City and County of Honolulu, will initiate the process of researching and copying the specific records you are interested in obtaining. There will also be a copy charge of \$0.50 for the first page of every record, and \$0.25 for each page of the same record, thereafter. In addition to the copy charge, there is a research fee of \$5.00 per 10 minutes, or fraction thereof, of research time. Shipping and handling charges will also be added to your total cost for this type of request. These charges will be imposed separately from the zoning clearance and confirmation request fee. Please contact our Customer Service Division at (808) 768-8272 for cost estimates to initiate the request.

Should you have any questions, please contact Christi Keller, of our Zoning Regulations and Permits Branch, at (808) 768-8087 or via email at c.keller@honolulu.gov.

Very truly yours,


FOR Dawn Takeuchi Apuna
Director

Cc: Shichao Li, OPSD
Lisa Webster, OPSD
Mark Howland (Agent) - markahowland@hawaii.rr.com

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)23.040

MAR 3 1 2023

Mark Howland
WHALE Environmental Services LLC
P.O. Box 455
Kahuku, Hawaii 96731

Dear Mr. Howland:

Subject: Environmental Disclosure Document for
A SMA Major Permit Application for the Zucco Property
57-157 Kamehameha Hwy, Kahuku, HI 96712
TMK (1)5-6-001:089

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 Dora Choy of the Planning Branch at (808) 586-0488.

Sincerely,

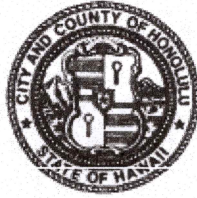
A handwritten signature in blue ink, appearing to read "CKinimaka".

CHRISTINE L. KINIMAKA
Public Works Administrator

DC:mo

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

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



RICK BLANGIARDI
MAYOR

ARTHUR J. LOGAN
CHIEF

KEITH K. HORIKAWA
RADE K. VANIC
DEPUTY CHIEFS

OUR REFERENCE EO-GK

May 2, 2023

SENT VIA EMAIL

Mr. Mark Howland
markahowland@hawaii.rr.com

Dear Mr. Howland:

This is in response to your communication received on March 22, 2023, requesting input on the Special Management Area Major Permit Application for the proposed construction of a new single-family dwelling and two guest houses, all with detached carports, on the Zucco Property located at 57-157 Kamehameha Highway in Kahuku.

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

If there are any questions, please call Major Herbert Soria of District 4 (Kaneohe, Kailua, Kahuku) at (808) 723-8640.

Sincerely,


GLENN HAYASHI
Assistant Chief of Police
Support Services Bureau

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com



March 31, 2023

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Manager and Chief Engineer

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Deputy Manager

Mr. Mark Howland
WHALE Environmental Services LLC
P.O. Box 455
Kahuku, Hawaii 96731

Dear Mr. Howland:

Subject: Your Letter Requesting Comments on the Environmental Disclosure Document for the Proposed New Single-Family Residence and Two New Guesthouses at the Zucco Property at 57-157 Kamehameha Highway in Kahuku – Tax Map Key: 5-6-001: 089

Thank you for your letter regarding the proposed new single-family residence and two new guesthouses.

The existing water system is adequate to accommodate the proposed development. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

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

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

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

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

Very truly yours,

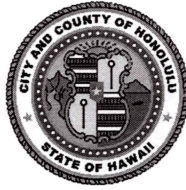
ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ny

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

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

RICK BLANGIARDI
MAYOR



SHELDON K. HAO
FIRE CHIEF

JASON SAMALA
DEPUTY FIRE CHIEF

April 4, 2023

Mr. Mark Howland
WHALE Environmental Services LLC
P.O. Box 455
Kahuku, Hawaii 96712

Dear Mr. Howland:

Subject: Environmental Disclosure Document
Zucco Property
56-157 Kamehameha Highway
Kahuku, Hawaii 96712
Tax Map Key: 5-6-001: 089

In response to your letter received on March 29, 2023, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires that the following be complied with:

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

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

2. The fire department access roads shall be in accordance with NFPA 1; 2018 Edition, Section 18.2.3.

Mr. Mark Howland
Page 2
April 4, 2023

3. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with NFPA 1; 2018 Edition, Sections 18.3 and 18.4.
4. Submit civil drawings to the City and County of Honolulu's Department of Planning and Permitting and route them to the HFD for review and approval.

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

Should you have questions, please contact Acting Battalion Chief Kendall Ching of our Fire Prevention Bureau at 808-723-7154 or kching3@honolulu.gov.

Sincerely,

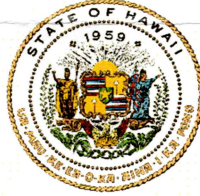


CRAIG UCHIMURA
Acting Assistant Chief

CU/MD:bh

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
Office of Conservation and Coastal Lands
P.O. BOX 621
HONOLULU, HAWAII 96809

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LAND
STATE PARKS

REF:OCCL:AW

Corr. OA 23-150

Mark Howland
WHALE Environmental Services, LLC
P.O. Box 455, Kahuku, HI 96731

APR 13 2023

SUBJECT: RE: Review Comments on Draft Environmental Assessment for the Zucco Property at
57-157 Kamehameha Highway, Kahuku, Hawai'i 96712, Tax Map Key (TMK) (1) 5-6-
001:089.

Dear Mr. Howland,

The Department of Land and Natural Resources (DLNR), Office of Conservation and Coastal Lands (OCCL) is responding to your letter requesting comments on the Draft Environmental Assessment for demolition of the existing dwelling and construction of a new single family residence, two guesthouses, and three carports on the subject property . According to the information you provided, the location of the proposed construction is outside of the Conservation District boundaries and is not regulated by this office. As a beach-front property, I encourage you to review the State of Hawai'i Sea Level Rise Viewer (<https://www.pacioos.hawaii.edu/shoreline/slr-hawaii/>) to assess the potential impacts of sea level rise on the parcel.

Please contact Amy Wirts, University of Hawaii Sea Grant Extension Agent and OCCL Coastal Lands Program Coordinator at (808) 798-7556 or by email at Amy.E.Wirts@hawaii.gov, should you have any questions regarding this matter.

Sincerely,



S. Michael Cain, Administrator
Office of Conservation and Coastal Lands

Draft Environmental Assessment – Zucco Property -

Responses to Board and Agency Comments

The DPP Pre-Consult Version for this project at 57-157 Kamehameha Highway, Kahuku, HI 96731 was mailed or provided via email – or digital transfer to the parties listed in the Chapter 7 Distribution List per their submittal request. We send out a cover letter and disk containing support documents for the development of this Draft Environmental Assessment for review and comment.

We request email responses, but sometimes get paper mail. Responses received have been scanned into .pdfs and are located in Appendix G of this DEA and the following are our comments on those responses. We also ask for a 30 day comment period, but also in every case grant a 30 day extension for comments which brings the comment period for the pre-consult version to 60 days. We are of the understanding that upon acceptance of the draft EA and subsequent publication of the DEA/SMA in the *Environmental Notice*; we will be responsible to return the revised DEA to the responsive agencies to show we incorporated their comments in the DEA. Meanwhile, the compilations below are the result receiving verbal or written comments and our plan of action.

Some of these plans of actions require:

- Changes to the language of the DEA
- Changes to the proposed action
- Changes to mitigation strategies

Notification is of three types:

- Board hearings such as the Koolauloa Neighborhood Board hearing held for this project
- Verbal conversations with abutters, neighbors and even agency individuals
- Emailed or mailed correspondence with agencies and boards.

Section 1 – Board Hearings and Communication

The 57-157 Kamehameha Highway Ke Piki Ohana LLC Property project requested and was granted a board hearing on June 8th, 2023. A PowerPoint Presentation was made (attached) and presented. There was little discussion about the planned project with the

Draft Environmental Assessment – Zucco Property - Responses to Board and Agency Comments

exception of the verification that the site is intended for family use only and not a vacation rental.

Other discussion centered on shoreline access, monk seal birthing and sea bird use of the shoreline.

Our responses were at the public hearing:

- *We are aware of the use of the shoreline by endangered species such as monk seals and from humans with walking and beach use along the coastal berm. The applicant agrees to conduct no activity beyond the shoreline setback and not placed any impediments to the shoreline path that currently exists on the coastal berm.*
- *Fencing – a little contradiction here, some want no fencing to prevent any species entering the property to nest, others want fences to prevent dogs and cats from stalking on the endangered species. We propose to maintain the dense naupaka plantings on the shoreline to prevent predators, but place no fence structures in the shoreline zone on the site.*
- *Lighting – the architect will be advised to insure Dark Sky provisions by having no outward or upward bound lighting on the property to prevent sea bird flight disruption*

The following are responses to comments made by agencies (no particular order)

Changes are made to the DEA as noted and can be seen in this submitted version

DPP – Pre-consult Letter – dated April 25th, 2023

Recommendation that the project not viable for ORD 23-4 submittal – full DEA/FEA/SMA process requirement.

Requirements for a DEA were listed and are complied with this submission.

Mr. Jordan Didly assigned to this project.

Board of Water Supply – C&C of Honolulu

Comments received March 31st, 2023

Board of Water Supply offered limited comments and acknowledged receipt.

Draft Environmental Assessment – Zucco Property - Responses to Board and Agency Comments

The BOWS confirmed that there is an adequate water supply for the planned project. They urge water conservation where possible, and to adhere to fire protection standards.

As such, the applicant appreciates the consideration.

Police Department – C&C of Honolulu

Comments received May 2nd, 2023

- The Honolulu Police Department offered the following comments and acknowledged receipt with few concerns.
- Insure nearby residents and/or businesses are notified of construction periods

As such, the applicant will insure the above comments are incorporated into the permit.

Honolulu Fire Department – City and County of Honolulu

Comments received April 4th 2023

The Fire Department recommended fire access roads and insuring an approved water supply is available. Submit final drawings with Building Permits.

As such, the applicant appreciates the consideration, and will insure all comments are address in project plans.

Dept. of Land and Natural Resources – OCCL – State of Hawaii

Comments received April 13th 2022

OCCL stated they have no jurisdiction over the property

We appreciate the consideration.

Dept. of Accounting and General Services – State of Hawaii

Comments received March 31st 2023

DAGS offered no comments but acknowledged receipt

Draft Environmental Assessment – Zucco Property - Responses to Board and Agency Comments

As such, the applicant appreciates the consideration

Abutters

Both abutters were notified – one is the applicant themselves who own the one lot northwards of the subject lot. The sole non-related abutter did not return comments.